Natural Resources Development in the Republic of Sakha: Russia's Diamond Producing Region

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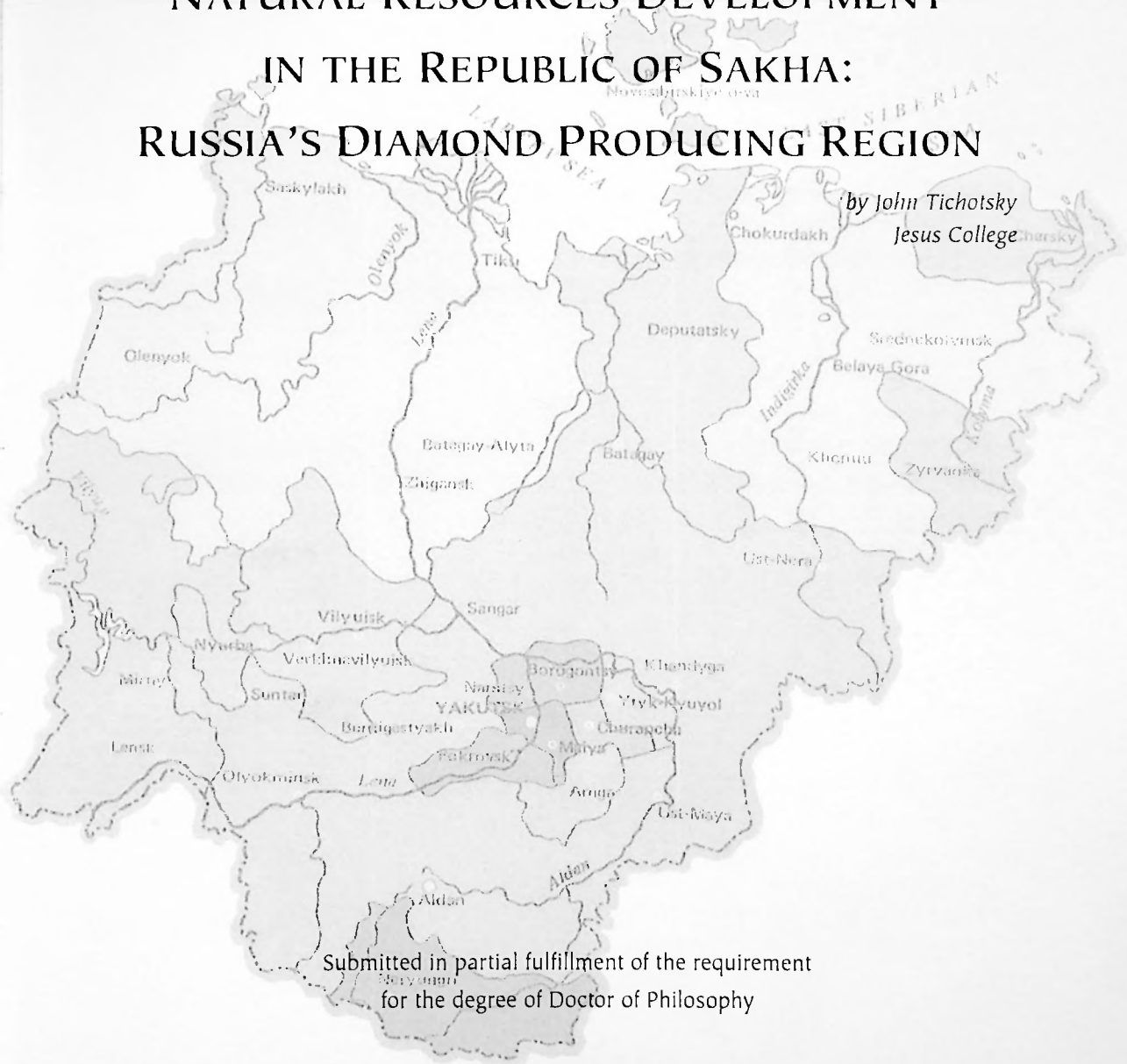

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DISSERTATION WAIVER

I hereby declare that my dissertation entitled, NATURAL RESOURCES DEVELOPMENT IN THE REPUBLIC OF SAKHA: RUSSIA'S DIAMOND PRODUCING REGION, is not substantially the same as any that I have submitted for a degree or qualification at any other University.

I further state that no part of my dissertation has already been or is being concurrently submitted for any such degree, diploma or other qualification.

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration.

This dissertation does not exceed the 370 pages approved by the Degree Committee of the Faculty of Earth Sciences and Geography.

Signature:

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ABSTRACT

NATURAL RESOURCES DEVELOPMENT IN THE REPUBLIC OF SAKHA: RUSSIA'S DIAMOND PRODUCING REGION

This thesis is an empirical study of a regional economy that is undergoing rapid social and economic change. The principal objective of the thesis is to advance a comprehensive view of past and present development of the Republic of Sakha, using available economic and historical information.

The Republic of Sakha (Yakutia) is one of Russia's most resource-rich regions, the political unit with the largest land area within the Russian Federation, and a region with a particularly strong, ethnically-based local government. The current economic structure of the Republic of Sakha is primarily defined by an export-based diamond industry. In Sakha, enormous real and potential windfall from natural resource development amplifies the existing chaos, typical in Russia, caused by the tangle of economic transition, regionalism, ethnic politics, and corruption.

The last one hundred years of development and reform in the Republic of Sakha can be addressed by a unified explanation. This thesis proposes that, rather than create a new paradigm in development economics, the Sakha case study is extremely consistent with existing explanations of a subset of economies that rely heavily on export-led growth of primary resource production. Historical evidence suggests that the successive development of specific natural resources ("staples") for use or sale outside the republic defines the development of the Republic of Sakha since the 19th century and throughout the entire Soviet period. The current state of Sakha's general economy, the recent changes in the structure of this economy and the performance of the main industries and firms continue to function through the exploitation and export of the region's natural resources. The process of privatization and the mechanism for export and sale of resource production are paramount issues in understanding the current structure of the Sakha economy.

Management of natural resource rents is closely linked with the current and future possibilities for the Republic of Sakha to achieve long-term economic growth and significantly higher standards of living for the people living within the region. Different views about Sakha's development are discussed in the context of development policy. A comparison is made between available options for Sakha's development and management of resource rents with parallel choices made in the State of Alaska (United States).

Key Words: Republic of Sakha, Yakutia, Russia, regional development, natural resources, export-led growth, economic rents, privatization, export, former Soviet Union, Alaska, diamonds, gold, oil and gas

CHAPTER 1

INTRODUCTION

The principal objective of this thesis is to develop a comprehensive view of economic development in the Republic of Sakha (Yakutia).[1] The Republic of Sakha is a little known, remote political unit of the former Soviet empire. Sakha covers the largest land area[2] within the Russian Federation. It is one of Russia's most resource rich regions. Simultaneously, Sakha is Russia's primary diamond producing region, yielding 25 per cent of the world's diamonds, and one of the most prospective regions in the future structure of Asia's natural gas supplies. Sakha also has a particularly strong, ethnically based local government.

This work formulates a unified explanation of past processes of regional economic development and present rapid economic change for one of the more interesting regional economies to crystallize in post-Soviet Russia. Previously, the West had little direct experience in analyzing regional economies of the former Soviet Union. Existing explanations of economic development of the Republic of Sakha and similar regions are based on an obscured history and a Soviet style analysis heavily tainted with ideology. (Egorov and Lishchenyuk, 1985, pp. 229–253; Aganbegyan, 1978, pp. 367–372) Until recently, lack of information also made existing explanations of current dynamic changes confusing and incomplete. (Dimitrieva, 1996; Manezhev, 1995) This work combines economic and historical information available, since the collapse of the Soviet Union, with firsthand knowledge of political institutions and social forces in the Republic of Sakha.

I began looking at the Republic of Sakha by speculating whether Sakha is a "new" kind of case study within the scope of western development economics. A significant conclusion of this thesis, based on empirical and historical evidence, is that, although the Republic of Sakha is only recently accessible as a case study, it does not create a uniquely new paradigm in development economics. Rather, the most extraordinary thing about the Republic of Sakha is that, in so many ways, it is ordinary and simple as an economy. Specifically, the past and present state of the economy of the Republic of Sakha is consistent with existing explanations for a subset of economies that rely heavily on export-led growth of primary resource production. (Lewis, 1989)

Sakha is an almost perfect archetype[3] of a primary resource export-led economy. The Sakha economy, for example, contains all the essential elements included in an interesting textbook case of an export-led economy: mines, oil wells, timber, an ethnic president, migrant colonial (Russian and Ukrainian) labor, farmers, pastoral indigenous herders, a successful primary export commodity (diamonds), a formerly successful primary export commodity (gold), and a potential export commodity (natural gas). Sakha's single major drawback as a model is that its marine coastline happens to be on the Arctic Ocean and the coastline is ice-covered most of the year. Classifying Sakha as a primary export economy

Insert A:

It should be noted that many problems associated with single export national economies do not apply to the Republic of Sakha, since it is a region within a larger sovereign nation. Specifically, Sakha does not have its own currency and avoids many problems related to balance of payments and currency exchange rate issues (e.g. Dutch disease).

puts the case study into the context of current development perspectives, including explanations of economic growth within such economies. (Lewis, 1989, p. 1553) (see insert A)

Several theories relate the importance of the growth of the export sector of a resource producing country or region to the total and sustained growth of its economy. One of the first people to develop this kind of analysis was the economic historian Harold Innis (for the first time in 1915), who described development in his native Canada in terms of the production and export of a principal resource, called a "staple." (Armstrong and Taylor, 1985, p. 66; North, 1955, p. 247) The staples theory of development explains how the economy of Canada developed based on the successive exploitation and export of furs, fish and wheat. (Findlay and Luhndahl, 1994, p. 71) The staples theory became a useful tool in analyzing the development of "regions of recent settlement," like Canada, the US, Argentina and Australia. (Findlay and Luhndahl, 1994, p. 71; Lewis, 1989, p. 1574) The staples theory was formalized in 1966 by Chambers and Gordon, who created a model that attempted to quantify "the effects of staple production upon per capita income." (Chambers and Gordon, 1966, p. 316) Staples theory was also applied by Douglas North to explain the development of the United States, particularly the development of *ante-bellum* South and the US West. (Findlay and Luhndahl, 1994, p. 71) In its simplest form, staples theory, as a part of the "export base approach," views economic development of resource based regions "from 'without' rather than from 'within.'" (Armstrong and Taylor, 1985, p. 66)

> Capital and labor flowed into these regions in order to exploit their rich natural resource base. As world demand for these natural resources expanded, the necessary transport links were forged with the outside world, leading to the integration of these regions into world markets. Shipping lines and railroads were therefore brought into these regions for the purpose of exploiting their natural resources. (Armstrong and Taylor, 1985, p. 66)

Part of the staples theory includes the important fact that the primary export industry leads to "linkages" with other sectors, which, in turn, also expand and create greater overall growth. (Hirschman, 1989, p. 210) Sectors of the economy are related to the primary industry through a "multiplier" effect. (Tiebout, 1956, p. 160) The multiplier is the ratio between growth in the primary export economy and other parts of a regional economy. In other words, the larger the multiplier the greater the effect that the primary industry has on other sectors of the economy. The smaller the multiplier, the smaller the effect of the primary economy on the rest of the economy.

Linkages are classified according to the kind of general connections they make between the primary industry and the regional economy. "Backward" linkages refers to the development and growth of industries that act as inputs to the primary export product (to an extent this is closely aligned with the concept of import substitution), while "forward" linkages are the creation of downstream industries. (Hirschman, 1989, p. 210) Balassa has three main classifications of linkages: backward linkages, that create demand for transport and a local support sector (domestically-produced inputs); final demand linkages, caused

by increased incomes from the primary industry that creates demand for domestic goods; and linkages that create processing activities. (Balassa, 1989, p. 1665)

These linkages are the process by which the export sector of the economy is the "prime mover" or "engine of growth" for the entire regional economy. (Findlay and Luhndahl, 1994, p. 71) Linkages are efficient when they develop naturally, rather than being, "pushed to uneconomic lengths." (Hirschman, 1989, p. 213) This is an argument for government not to subsidize linkages that cannot be sustained in the long run. This is particularly relevant in a place like Sakha, which cannot profitably engage in most downstream (processing) industries. (Bliss, 1989, p. 1193) This does not prevent the Sakha government from supporting and developing unprofitable industries regardless, contending that they are "value-added" activities. Decisions and policies about value-added activites are often complicated by political considerations. A major discussion in this thesis is about finding ways for a region to distinguish between profit-producing value-added activities and unprofitable activities.

A resource, like minerals, is a "gift of nature" and the profit generated from its exploitation is referred to by economists as economic rent. Economic rent is different from rent a tenant pays for the use of land or premises. Economic rent is the surplus (excess) in income or return that a factor of production (land, labor or capital) yields over the cost of production. (McDonald, 1979, p. 25)

Since economic rent is the surplus benefit that comes from resource exploitation, it is a major policy consideration to establish a system that maximizes total economic rent from resource development. (Goldsmith, 1987, p. 3; McDonald, 1979, p. 24) This economic rent can be used for continued growth and development of a region. (Lewis, 1989, pp. 1595-1596) In democratic, capitalist economies the goal of resource exploitation is generally to increase well being for the people who own the resources. (McDonald, 1979, p. 24) If the resource is owned by a region, then the economic rents can be maximized to benefit the people who live in the region.

Economic rent is often the object that various players compete to capture and control. (Bhagwati, 1982, p. 1990) Players can include various levels of government, resource development companies, and citizens. In Sakha, enormous real and potential windfall from natural resource development generates rent seeking activity by rent seeking interests that involve an unlikely collection of stakeholders: an international diamond cartel, a multi-national gas pipeline consortium, President Yeltsin, Moscow bureaucrats, ethnic Sakha political bosses, Sakha neo-communists with strong links to Moscow, Ukrainian miners, Russian lorry drivers, and indigenous reindeer herders. Economic rent also entails issues of land ownership and management of development, which in Russia is compounded by developing relations between the federal and provincial governments, and an ambiguous role for any potential private ownership or private production of resources. (Weingast, 1995, pp. 1-3) The combination of competition over resources and nebulous ownership laws augment the existing chaos, typical in Russia, caused by the tangle of economic transition, regionalism, ethnic politics, and corruption.

Economic rent is the greatest source of income for the Republic of Sakha, and will be a major point of discussion in this thesis. Economic rent produces a flow of revenue. In remote regions, like Sakha, where population is sparse and relatively small, the flow of revenue from economic rents is relatively large on a per capita basis. Choices must be made about managing economic rents. These revenue flows may be spent quickly or slowly, over a long time. Also, these revenue flows may be spent wastefully, bringing little economic or social return, or invested "wisely" to maximize economic and social benefits.

To a large extent the issue of "wise use" of resources is a question of resource allocation. Resource allocation of an export economy relies heavily on determining a region's comparative advantage. Comparative advantage is the principle proposed to explain how a region gains benefits through specialization and trade. (Chenery, 1979, p. 272) As a building block of trade theory the concept of comparative advantage can also be used as a tool for making policy choices. (Krueger, 1984, p. 136) If a region has a comparative advantage in a resource or manufacture, it will receive benefits from trading goods. If the region does not have a comparative advantage, it would receive no benefit, or a negative benefit (i.e. it would lose money from trading). Comparative advantage is crucial in determining the kind of development activities a region chooses. In this discussion gains from trade are considered to be due to a region's comparative advantage (i.e. relative) and not a regions lower absolute costs in a resource.

Resource allocation also involves the concept of import substitution. Import substitution is the choice to locally produce a good to displace an imported good (Burton, 1989, p. 1602–1603). In its extreme manifestation, import substitution is often viewed as an integral part of an inward looking trade policy (Burton, 1989, p. 1602–1603). An inward looking trade policy is often contrasted with an outward looking trade policy which puts a priority on export promotion. (Krueger, 1984, p. 135; Lewis, 1989, p. 1545) For Sakha, almost any activity other than raw resource production can be viewed as import substitution.

Import substitution arguments are critical to support the creation of manufacturing within Sakha as the government seeks to gain greater value than simply selling unprocessed resources (value-added processing), or to replace imports produced outside. Arguments for import substitution often are pitted against arguments for comparative advantage. (Bliss, 1989; Burton, 1989) That is, import substitution may cost more than the income it brings in and the activity meant to promote economic growth is simply a way to squander money. We shall see that this issue is extremely vital in Sakha, most notably for the diamond cutting industry, and to a lesser extent the reindeer herding industry.

Based on the above concepts, this thesis attempts to synthesize a broad and comprehensive approach using the best available social and economic data to develop a comprehensive view about a region undergoing rapid social and economic change. This view includes, background information, a historical context, an evaluation of the overall economy, and an examination of economic reform, privatization and the export economy. Finally, this thesis concludes with a critical discussion of various views about Sakha's development.

Chapter 2 provides essential background about the Republic of Sakha and includes information about geography, resources, resource production, population, ethnic makeup, political economy and business environment. The chapter's broad and comprehensive view provides insight into the initial conditions (resource potential) and critical non-economic factors that influence the existing state of development in the Republic of Sakha. In Sakha, rent seeking activity and rent seeking interests exist within a political context.

Chapter 3 provides a historical context for Sakha's regional development. The region's "major historical strands of development" (Rogers, 1962, pp. 60-102) provide a development continuum that includes: the indigenous agriculture-based economy; Russian expansion and fur trading; collectivization of local agriculture under Stalin; the first and only large-scale gold rush in the Soviet Union which was eventually transformed into a Stalinist mining gulag complex; and, following Stalin's death, the development of a modern diamond mining industry.

It is evident, looking at the historical patterns of development, that the major economic activity for Sakha is producing a primary commodity for export. The development of a primary staple, in turn, interacts and drives all other sectors of the economy. Consequently, the historical evidence adds credibility to the assertion that the Republic of Sakha fits extremely well into the category of an export-led staples economy. (Lewis, 1989, p.1542-1558; Tussing, 1995, personal communication)

Although it is easy to show that the Republic of Sakha's economy has always been dependent on primary resource production, the fact that the resources were exported from the region and often beyond the USSR is an issue that is generally not recognized. Instead, Sakha's resource production during the Soviet period is often considered as a part of the greater planned and closed Soviet system of development. (Humphreys, 1995, p. 81) Specifically, Sakha's past economic development is usually discussed in the context of the overall Soviet economic policy of autarky [self-sufficiency] that runs counter to exporting natural resources. This thesis shows, instead, that the present and past development of the Republic of Sakha is based heavily on exploiting a single principal natural resource for use or sale outside the region.

Chapter 4 evaluates the overall economy of the Republic of Sakha and looks at a broad range of social and economic indicators. This frame of reference allows for the year by year comparison of Sakha's economic performance during the period of intense social and economic change from 1991 to 1995. It also allows for comparison of the Republic of Sakha's economic development with other regions within the former Soviet Union and the rest of the world.

Chapter 4 also summarizes the available empirical evidence about the current state of Sakha's general economy, including changes in Gross Domestic Product (GDP), industrial output, employment, wage and quality of life indicators, and examines how these factors relate to natural resource exploitation. Prior to the collapse of the Soviet Union, many specialists treated each Soviet region as if it developed in the same Soviet manner.

(Pavlenko, 1979, pp. 22–23) Today, social and economic indicators show that each regional economy is adapting in its own way to rapid economic change in the post-Soviet Union.

Chapter 5 discusses the specific issues of economic reform and privatization within Sakha. Land rights are a major factor in determining policies that dictate resource development. The Republic of Sakha, as part of the Russian Federation, is caught up in the general ambiguity about land ownership and mineral rights. The issue of private land rights remains largely undefined, and much of the period of reform following 1991 involved a delineation of rights over resource revenues from minerals. Progress in determining land rights over the last three years extends regional (republic) and municipal land rights, but these are largely *de facto* rights and are minimally protected by law. For the present, Sakha has a competitive advantage over other regions in Russia because it is an ethnically-based former autonomous republic with an existing stream of foreign currency revenue. Successful development can be carried out on land owned by a regional governmental entity, as we will see in the example of the State of Alaska (USA). In the case of Alaska, the state government has clearly defined ownership of land and mineral rights they are completely separate from the federal government. In the case of Sakha, development remains hampered by the lack of clearly defined land rights.

Chapter 5 also addresses the process of privatization of capital and the means of production. Enterprises were privatized as part of Russia's nationwide privatization scheme starting in 1991–1992. Sakha was one of the slowest regions to implement privatization in Russia. (Slider, 1994, p. 390) As a result, the Sakha government continues to dominate the regional economy. Chapter 5 evaluates and compares the performance of the main industries and the principal firms of the region following the reorganization of corporate structure and changes in the nominal ownership of capital inputs. Following Russia's nationwide attempt at reform, several industries became bankrupt (e.g., timber, salt, mica and fur), while others are barely able to continue to operate under the new economic conditions (e.g., gold, tin and agriculture). The diamond industry continues to be extremely profitable under reform, but it is necessary to address serious structural problems if the industry is to continue to function efficiently.

Chapter 6 looks at the current mechanisms that drive the export of Sakha's resource production and provide a method for the region to collect foreign currency earnings. Sakha's primary export, diamonds, is a unique market. The nature of the diamond market adds a great degree of complexity to the way rent seeking behavior in Sakha and Russia interacts with the world market. Sakha's and Russia's decisions have the potential to affect the world market for diamonds, because they control over a quarter of the world's market share for rough diamonds. Sakha's decisions related to the diamond market are crucial in influencing the sustained economic growth for the region.

Chapter 6 also looks at the potential for future exports from the Republic of Sakha. Under new economic conditions, the Sakha government is exploring the possibility of devel-

oping a viable oil and gas industry that can serve a potentially enormous export market in East Asia.

Chapter 7 discusses the various views that have been adopted to explain development in the Republic of Sakha. During the Soviet period, except for the original development concept put forth by Stalin, (Serebrovskiy, 1936, pp. 16-17) the influence of export-led growth resulting from the exploitation of a primary resource was largely ignored. Instead, Sakha was often classed as a northern region, and as a northern region it was part of the Soviet Union's policy of "mastery" over the North's resources. (Slavin, 1961a, p. 40) Within this context, the Soviet Union's policy advanced in the 1970s and 1980s eventually evolved into a concept that northern regions must pursue a policy of "rational development." (Agranat, 1977, p. 16) The Soviet concept of rational development is closely related both in concept and in ambiguity to the western notions of "sustainable development." (World Commission on Environment and Development, 1987, p. 8) The western ideal of sustainable development is a concept recently applied to the world's northern regions, including the Republic of Sakha. In addition, Chapter 7 also includes a discussion of the current thoughts and myths about development within Russia that contradict this thesis' findings.

Chapter 7 adopts a case study approach that compares development in the state of Alaska (USA) with the current development issues that face Sakha. As a western analog of Sakha, Alaska is a primary export economy that within the last 20 years dealt with many of the issues only beginning to face Sakha. This particularly relates to issues of capturing and managing economic rents and incorporating the "traditional" rural economy into the primary export economy.

This thesis brings together, within a western analytical framework, regional economic data from Republic of Sakha primary sources and Russian source documents. I gathered much of the regional information in the Republic of Sakha during fifteen months of fieldwork carried out over the course of two and a half years (1993–1996). No regional analysis for the Republic of Sakha linking social and economic information and data with a general explanation of regional economic growth and its relationship with the outside world has been published. The main reason is that most data related to regional mineral production and demography anywhere in Russia and the former Soviet Union were considered to have strategic significance and were unpublishable by Russian social scientists and largely unavailable to Western specialists.

Theoretical considerations were drawn from four sources that are discrete pools of ideas.

1. The literature related to economic development, including current work analyzing the Russian macroeconomic condition.

2. The literature of the Sovietologists and "post-Sovietologists."

3. The literature that studies regions, the circumpolar north, and remote regions, like Alaska, that bear interesting similarities to Sakha.

4. What Russians[4] themselves write or say about regional economic development in the Republic of Sakha.

This thesis also links numerical regional economic data and social and economic source materials with a composite perspective that can only be achieved by first-hand experience with economic, social and political processes within the region. This, in turn, leads to a more accurate set of material upon which to base conclusions. Many of the source materials used in this thesis are in Russian.[5] I traveled extensively throughout Sakha collecting information about the extremely secretive diamond and gold mining industries, the fledgling oil and gas industry, and reform in the indigenous agricultural villages. The research conducted for this thesis builds on my experience studying the gold mining industry of the Russian Northeast for a Master's degree at the University of Cambridge (1992–1993). The research also builds on applied work I carried out between 1988 and 1995 for the Institute of Social and Economic Research (University of Alaska Anchorage).

CHAPTER 2

OVERVIEW OF THE REPUBLIC OF SAKHA

2.1. GEOGRAPHY

The Republic of Sakha is extremely large, sparsely populated, and relatively rich. Sakha is part of the Russian Federation and represents almost one-fifth (3,103,200 square kilometers or 1,197, 835 square miles) of Russia's territory. Sakha's territory is often expressed in terms of multiples of other areas of the world: "twenty-nine times the size of Belgium (Swenson, 1951, p. 208); "almost 13 times that of Great Britain;" (Korzhuev, 1965, p. 7; *Delove Lyudi*, 1994, p. 5) "2½ times that of Alaska, [or] slightly larger than India." (Tussing, 1994, p. 1)

Sakha is located in the eastern Asiatic part of Russia, technically known since 1917 as the Russian Far East. The Russian Far East is often erroneously referred to as part of Siberia by many westerners[1] (see Map 2.1). The Russian Far East is an official economic region within the Russian Federation and is the most eastern one-third of Russia's territory. Sakha makes up almost half of the Russian Far East (see Figure 2.1.).

Map 2.1: Map of the Republic of Sakha, the Russian Far East and Russia.

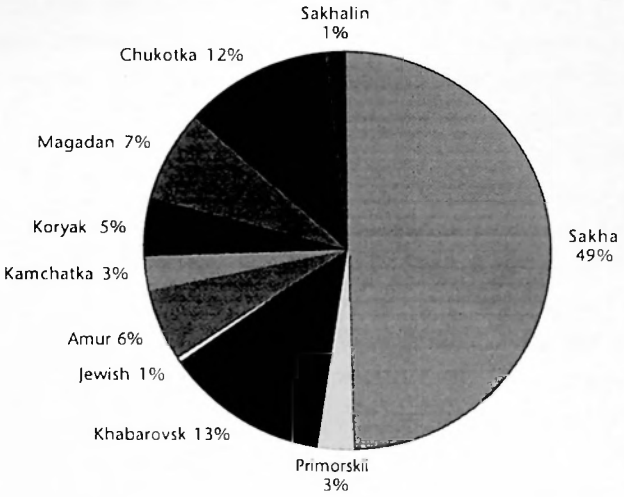


Figure 2.1: The Republic of Sakha's territory relative to other units of the Russian Far East.

The Republic of Sakha is considered the most severe part of the Russian North. Much of Sakha is located in northern and arctic areas and is the coldest permanently inhabited place on earth (only Antarctica is colder). Sakha has two major ecosystems, the taiga forests and the tundra. (Korzhuev, 1965, p. 9) The climate is characterized by cool summers and cold winters. The temperature in the interior of Sakha is lower than -40° C (-40° F) for most of the winter (December, January and February), and temperatures reach below -60° C (-78° F) at least several days a year. (Korzhuev, 1965, p. 126) At the same time, these identical areas can have summer temperatures above + 40° C. (+ 104° F) (Lishenyuk, 1995, p. 8) The harsh climate means that construction costs are high and transport of people and materials is difficult. Sakha has a network of ice roads in winter, while in the summer an extensive transport and supply network operates on rivers.

2.2. Resources

The Republic of Sakha is considered a storehouse of natural resources. It is said in Sakha that the Republic has "every element in Mendeleev's table [the periodic table of elements]." (Larionov, 1996)

The Republic of Sakha is located on a geological structure abundant in diamond-bearing ore. Sakha's geological diamond province is about 900 square kilometers in area,[2] located on the western side of the Republic. (Shishigin, 1994, p. 3) This represents 90% of Russia's geological diamond reserves. (Shishigin, 1994, p. 3)

The size of gold reserves is a state secret in Russia. Judging from Sakha's historic production of gold and Sakha's current production of about 24 percent of Russia's total gold production, gold reserves in Sakha are significant.

Sakha produces four percent of Russia's total coal production. Coal reserves for the Republic of Sakha were estimated in 1986 at over 8×10^9 (billion) metric tons of proven reserves,[3] and there may be as much as 2.7×10^{12} (trillion) tons of recoverable coal within 1,800 meters of the surface.[4] (Skrybykin, 1987, p. 57) In 1982, it was reported that Sakha had 33 percent of all estimated coal resources in the USSR. (Slavin, 1982, p. 179) Sakha also has reserves of antimony,[5] tin,[6] niobium, rare earth metals, iron,[7] lead, zinc, manganese, molybdenum, tungsten,[8] silver, copper, mica, zeolites, apatite, graphite and precious stones.

Presently, Sakha only produces natural gas for local needs in Yakutsk and western Sakha and small amounts of oil. Sakha potentially has world class deposits of hydrocarbons, especially gas. (Larionov, 1996) Other than the continuation of diamond mining, reserves of oil and gas are Sakha's best hope for a future economic base. Sakha's gas deposits have attracted the interest of an international consortium as a potential supply for natural gas demand in Japan, Korea and China for the 21st century. (Hirata, 1996, p. 12) There is, however, limited participation by foreign companies[9] in petroleum exploration within Sakha.

The total gas resource for the Republic of Sakha is estimated to be about 5,600 times greater than its current production of gas. (Tussing, 1995; Sakha Oil and Gas, 1993, and Khartukov, 1994, p. 73) Estimated recoverable reserves of crude oil are about 1,000 times greater than Sakha's current consumption of oil products. (Tussing, 1995; Sakha Oil and Gas, 1993; Khartukov, 1994, p. 69 and 73)[10] Sakha currently estimates its proved and probable natural gas reserves at about 1 trillion cubic meters or about two percent of the existing reserves of the former Soviet Union. (Khartukov, 1994, p. 73; Paik, 1995, p. 77) Sakha's recoverable oil reserves are about 2.6 billion tons, or about one third of the reserves of the Russian Far East, (Khartukov, 1994, p. 69; Paik, 1995, p. 82) with only about five percent of Sakha's oil and gas bearing areas explored. (Paik, 1995, p. 80) Sakha natural gas deposits may be equal to 15 million tons of oil per year, or 15 percent of potential future incremental gas demand for Asia.[11] (Stewart, 1995)[12]

Sakha has many renewable resources. Forty two percent of Sakha's territory is covered with forest,[13] mostly by larch,[14] pine[15] and Japanese stone pine.[16] (Skrybykin, 1987, pp. 112–113) The Soviet Union considered Sakha's forests 13.3 percent of the USSR's total forest reserve (Skrybykin, 1987, pp. 112–113). The forest resource is great, but much of its commercial value is marginal. Even during the Soviet period, Sakha's forest reserve was described "... as not valuable from the point of view of the forestry industry, [because,] ... most of forest is widespread, with low productivity." (Skrybykin, 1987, p. 113)

Sakha's agricultural economy is based on raising livestock, including: 294,800 reindeer, 239,900 beef cattle, 138,100 dairy cows, 167,200 horses and 81,000 pigs. (Goskomstat-Sakha, 1996b, p. 21) Sakha is also famous for its plush fur-bearing animals,[17] freshwater fish and large areas of pristine environment.

2.3. Sakha resource production

2.3.1 Diamond production

Almost all (99 percent) of Russia's diamonds are produced in the Republic of Sakha. Because some of the diamonds presently sold by Russia come from Russia's diamond reserve, amassed from Sakha's production between 1980 and 1990, it is difficult to estimate exactly how many diamonds are newly mined in the Republic of Sakha (i.e., its yearly production). In fact, the exact volume of diamonds that Russia produces is not officially available, although several estimates exist. The estimates vary from 12 million to 20 million carats per year (see Figure 2.2.). (Miller, 1995, p. 4; Behrmann & Banjerjee, 1995; Poiseev and Alekseev, 1989, p. 1; Minakir, 1993a, p. 52; Teslenko, 1995, p. 68; Gendlin, 1993, p. 9; Fuhrman, 1995)

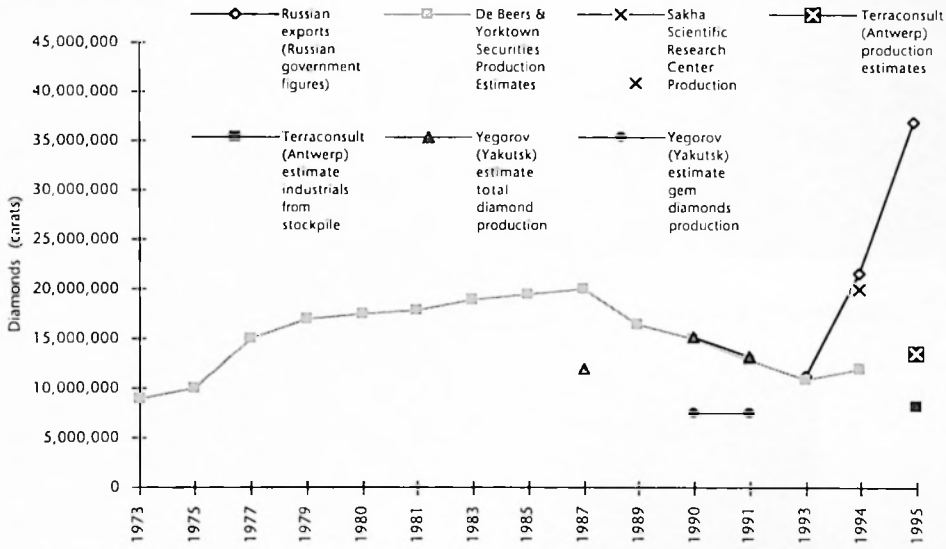
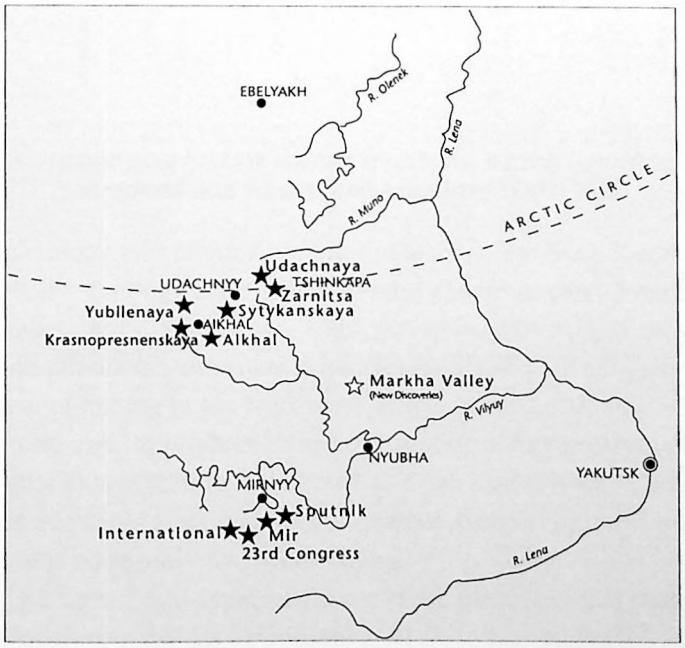


Figure 2.2. Russian diamond production 1973 to 1994, various estimates. Russian exports and stockpile estimates for comparison.

In its simplest form diamond mining involves digging a large open pit to reveal the diamond bearing ore, called kimberlite. This can be seen in Figure 2.3., an example of a diamond mining operation in the Republic of Sakha (Udachnyy). This photo illustrates how kimberlite, which forms giant underground cones called pipes, is excavated. Sakha's diamonds are mined from seven kimberlite pipes,[18] although it is likely that currently only three or four of these pipes are actually producing diamonds. In Russia, the producing kimberlite pipes are located near three Soviet-built enclave settlements (Mirnyy, Aikhal and Udachnyy) that were created expressly to develop the diamond deposits (see Map 2.2). A new, extremely rich kimberlite pipe was discovered recently west of the existing mining settlements (March 1994). This is the much-hailed Boutuabin pipe in the Markha Valley.

(Teslenko, 1995, p. 68; BBC, 1996, 19 January) The development of new diamond pipes is necessary to maintain and increase Sakha's diamond production. Since production at existing mines is decreasing (see Appendix 1 for detailed information on Sakha diamond production and status of the Sakha kimberlite pipes).

Figure 2.3. An example of a kimberlite pipe (Udachnyy) mining operation in Sakha.



Map 2.2. The location of the Sakha diamond industry.

2.3.2. Gold and Tin Production

Today, the Republic of Sakha annually produces a little over 20 percent of Russia's gold, about 28 tons of gold out of 122 tons of gold produced in Russia. The gold industry in Sakha is contracting, following a trend that started in the 1980s and is typical of gold mining operations in all of Russia. Sakha remains the largest gold producer in Russia. Like several other gold producing areas in the Russian Far East (Magadan and Chukotka), Sakha's gold production declined from 1991 to 1995 (see Figure 2.4.). Tin mining is operated in coordination with the gold industry, since both are considered precious metals. In 1989, Sakha produced about 6,700 tons of tin, estimated at 774,520,000 rubles or $57 million dollars.[19] (Poiseev and Alekseev, 1989, p.1)

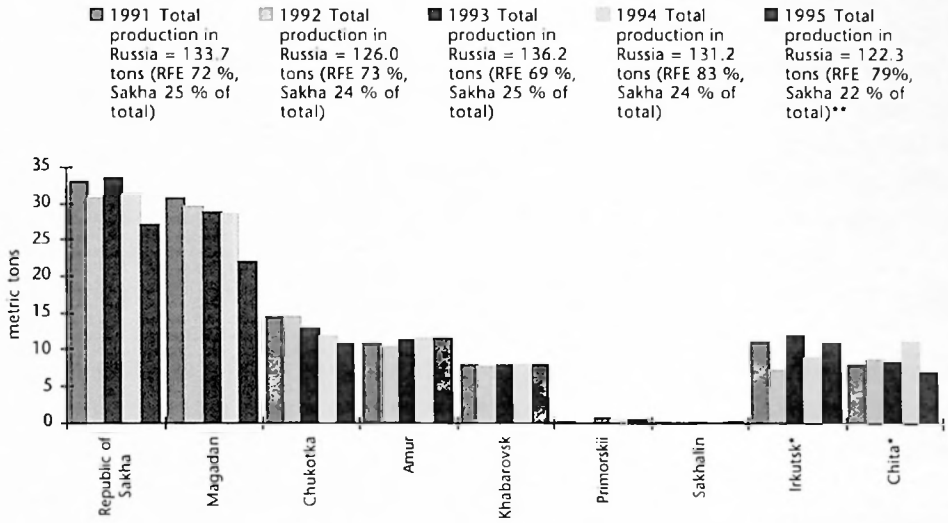


Figure 2.4. Production of gold for selected areas in the Russian Far East and Siberia, compared with Russian production from 1991–1995.

Mining technology and organization in the Russian Far East, including Sakha, is unique with its reliance on large scale placer mining and large capital and infrastructure built during the Soviet period. (Bogdanov, 1990, p. 2) Placer mining, a method of mining that uses water and gravitation to separate heavier gold and tin from gravel or sand, is the most prevalent form of mining in the Northeast. Placer mining probably accounts for over 85 percent of the gold and tin production in the Republic of Sakha. Most placer gold is mined at the surface. This is technically known as open cast mining. A small amount of the placer deposits are extracted from underground mines. Special portable placer processing plants carry out ore production for surface mining.

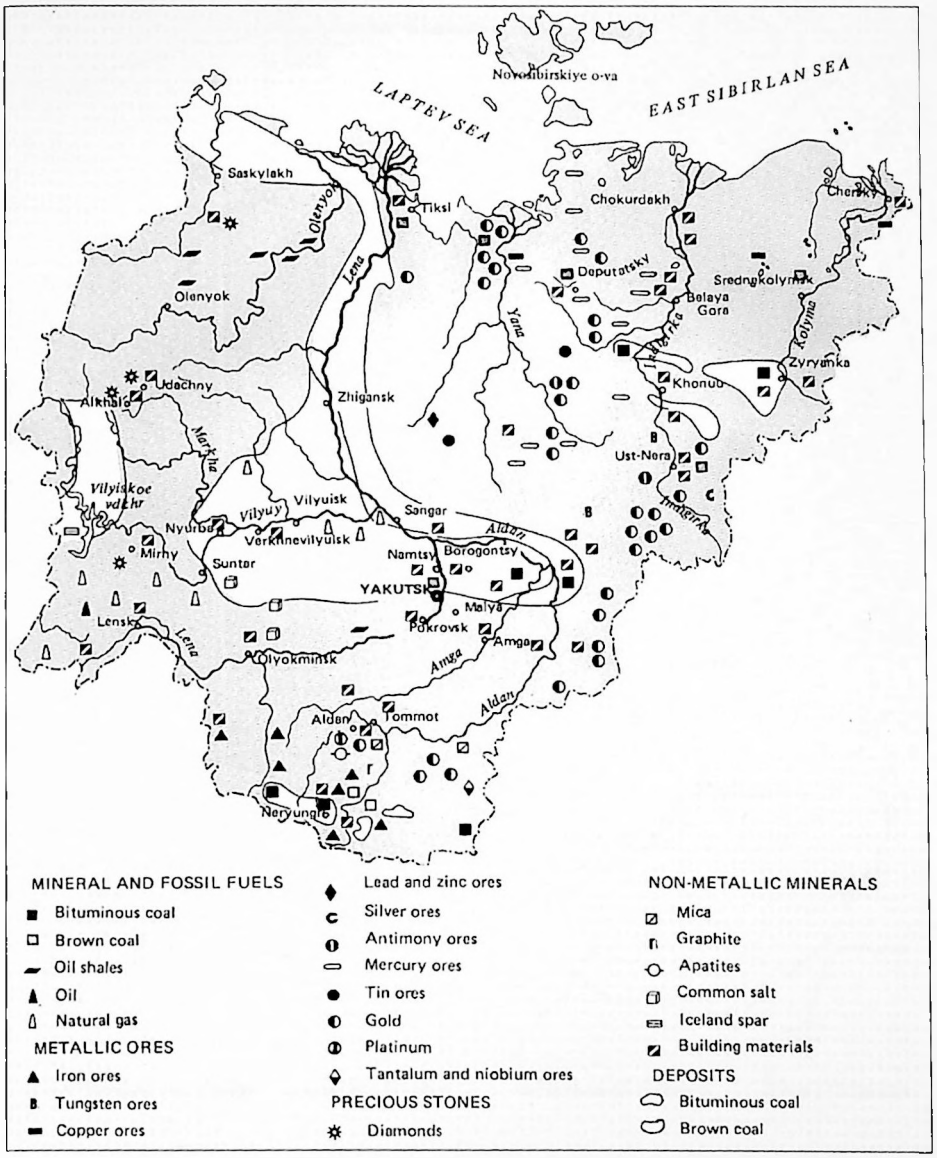
Since the late 1970s, and especially after 1991, the role of independent prospectors is growing. The prospectors use less elaborate gold washing equipment. The mining industry also uses a large floating surface processing plant with a bucket conveyor, called a

dredge. Less than 15 percent of the gold and tin is mined from lode mines, underground mines where gold and tin is found within hard rocks and is extracted mechanically or chemically. The exact breakdown of placer and lode mining for Sakha was not available at the time of the compilation of this thesis .

Four large gold mining companies are responsible for the bulk of precious metals mined in Sakha.[20] Three companies, Indigir Gold Company, Dzhugdzhur Gold Company, and Nezhdansk Gold Company are ultimately under the control of a holding company, Yakut Gold Company. Yakut Gold Company is the descendent of the original Union Gold Trust Company which was set up in the late 1920s and continues to be controlled by the Sakha government. Until 1991, Yakut Gold Company was called the Yakut Gold Industrial Amalgamation, and controlled the entire gold industry within Sakha. In 1994, Sakha produced 20 tons of gold, 5,100 tons of tin, 10,000 tons of antimony, two tons of silver and 160 tons of tungsten. (Lishenyuk, 1995, p. 98) Although the relationship between all parts of the industry and Yakut Gold Company is not exactly clear, it is clear that the Yakut Gold Company continues to control most of the metal mining industry. It is also clear that the company is under the overt control of the government. Aldan Gold Company, the fourth company, is considered independent of the Yakut Gold Company, but sells gold through the same government system controlled by the Sakha and Russian governments.

What are now Sakha's gold mining companies were previously called the State Production Plants, known in Russian by their abbreviated name GOK for *Gorno-Obogotitelnyy Kombinat* (mining combine). In 1994, the Kular Gold Company, a fifth company and a former *GOK* within Yakut Gold Company's control, went into bankruptcy and closed down. There are also about 30 independent groups of gold prospectors that operate within Sakha, some tied to the four larger companies or to Yakut Gold Company.

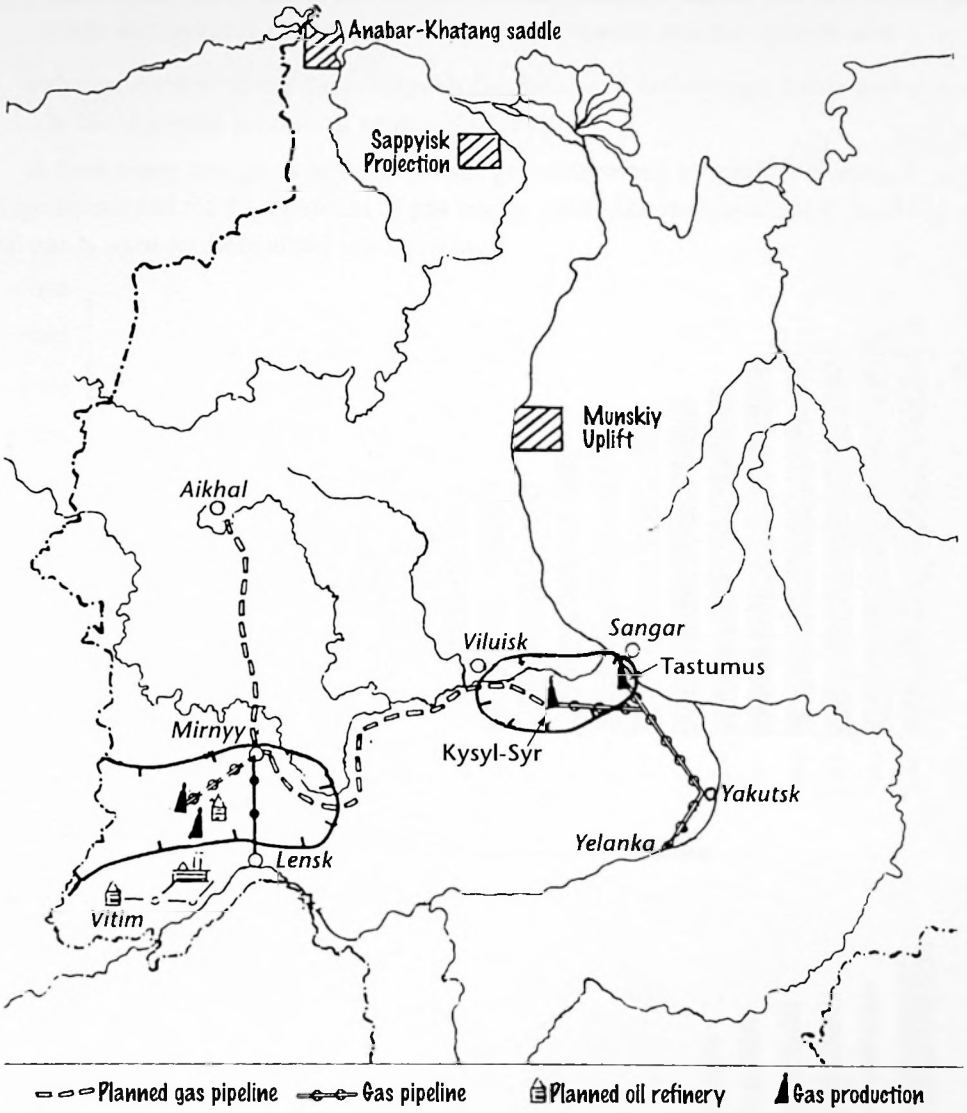
There is one tin mining company called Deputask Tin Mining Company, also primarily owned by Yakut Gold Company. Deputask Tin Mining Company is formerly one of Russia's largest tin producing enterprises and has been losing millions of dollars for the last three years, since tin demand within Russia collapsed. In 1995, a major tin mining area in Magadan region was completely shut down (Iultin Mine). This is probably a harbinger for Sakha's tin mining. Map 2.3 shows some of the gold and tin mining deposits of the Republic of Sakha.



Map 2.3. Gold, tin and other mineral deposits in Sakha.

2.3.3. Oil and Gas Production

Since 1967, the Republic of Sakha has been producing natural gas. There are two main areas currently under exploration, development and production of oil and gas within Sakha. These are the central Viluisk area (northwest of Yakutsk) and the Botuobinsk area in the west (around Mirnyy)[21] (see Map 2.4.).



Map 2.4. Oil and gas areas of Sakha.

Sakha produced a little over 1.6 billion cubic meters of natural gas in 1995 (see Figure 2.5a). This is about 45 percent of the Russian Far East's production. (Khartukov, 1994, p. 73) The Russian Far East includes the development of the Sakhalin area, which unlike Sakha, involves substantial foreign investment. On the scale of Russia's total production, Sakha's gas production represents less than one-quarter of one percent of Russia's total production. (Goskomstat-Sakha, 1995b, p. 7; LSE, 1996, p. 85) In the Republic of Sakha, natural gas is produced at both of the two main oil and gas areas. Specifically,

- the production of gas at the Middle-Viluisk (between Viluisk and Tastumus) gas fields and delivery of the gas to Yakutsk and several nearby villages, and
- the production of the Tass-Yuryakh (southwest of Mirnyy) gas fields and delivery to the diamond producing center of Mirnyy.

In both cases the gas is used for power generation and for central heating in the city or village accounted for 53.6 percent of gas use in 1994. About 19 percent of Sakha's natural gas is used for household use (cooking).

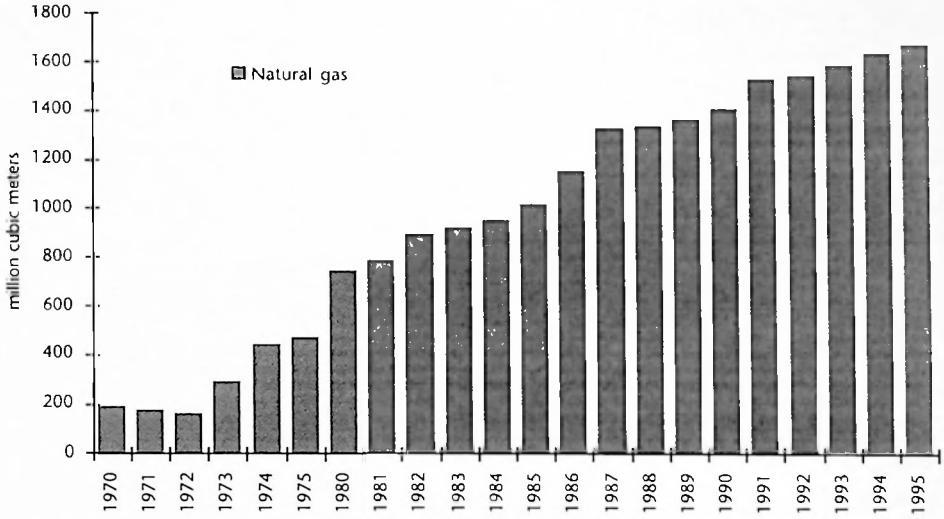


Figure 2.5a. Natural gas production in Sakha.

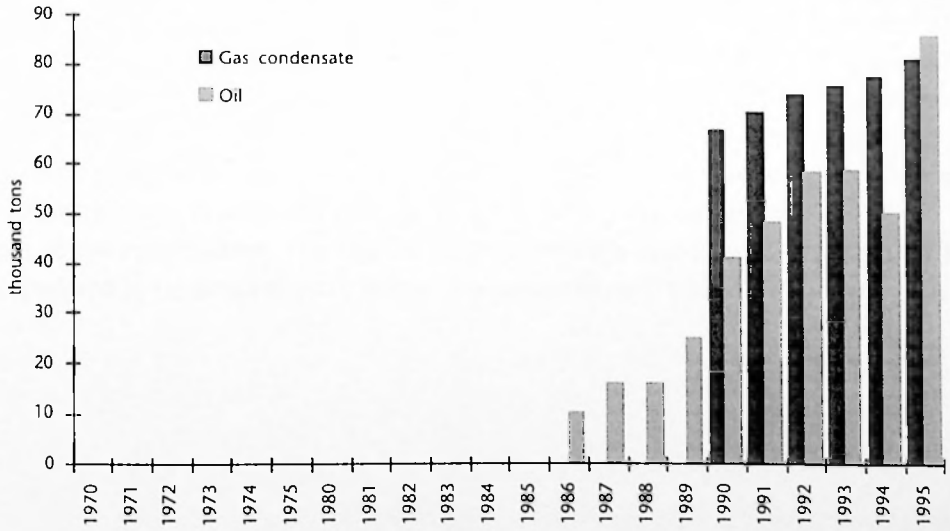


Figure 2.5b. Oil and gas condensate production in Sakha.

Oil production at this time in Sakha is minimal, with current production at 50,000 tons a year (1,000 barrels a day) (see Figure 2.5a). None of the oil is "commercially" produced. (Thompson and Matveev, 1994a, p. 70) About 78,000 tons (1,500 barrels of oil barrel equivalent per day) of gas condensate is produced a year (see Figure 2.5b).

Thirty deposits[22] of hydrocarbons have been discovered in Sakha since the 1950s. (Thompson and Matveev, 1994a, p. 70; Thompson and Matveev, 1994b, p. 98; Paik, 1995, p. 222) Most of the fields are either gas fields or oil and gas condensate fields.[23] Of the existing discovered 30 fields, only four are currently producing gas[24] and of these, one[25] is also producing oil. (Paik, 1995, p. 225) The remaining 26 petroleum deposits are in various stages of development, including six that were explored and shut-in. (Paik, 1995, p. 225)

Sakha's gas delivery system is one of the most remote systems in Russia. The gas delivery system is not tied into the systems of the western part of the country and is over 1800 kilometers (1118 miles) to tide water. The 585 km (363 miles) delivery system runs from Middle-Viluisk through Yakutsk and villages to the south.[26] There is a 278 km (173 miles) parallel delivery system[27] from Tastumus to Yakutsk, but it has been out of order since 1992 and for some time Sakha has been on a single line of gas supply.[28]

2.3.4. Coal production

Most of Sakha's coal is produced in what is called the "south Yakutian complex" centered around Neriungri City (see Map 2.5.). Coal production dropped to just above 11 million tons in 1994, and rose slightly to almost 12 million tons of coal in 1995 (see Figure 2.6.). Sakha production represents about a quarter of all coal produced in regions of the Russian North (Goskomstat-Russia, 1993, p. 117), about a third of all production in the Russian Far East (Minakir, 1993a, p. 54), and about four percent of Russia's production. (Dorian, Minakir and Borisovich, 1993, p. 364) The Neriungri coal deposit of southern Sakha was in production since the mid-1970s, but is presently declining (see Map 2.3).

The coal industry remained stable until the Neriungri coal deposit came on line. From 1980 to 1989 coal production increased by a factor of ten, to a maximum production of over 17 million tons of coal (see Figure 2.6). Export to Japan became a major part of the coal industry. Neriungri produces coking coal which is concentrated for use in the Japanese steel industry. Coal production began to fall in 1990. In 1994, production was about 75 percent of 1989 production. The Elginsk deposit, which is also in southern Sakha is being developed and is expected to push Sakha production to over 15 million tons per year.

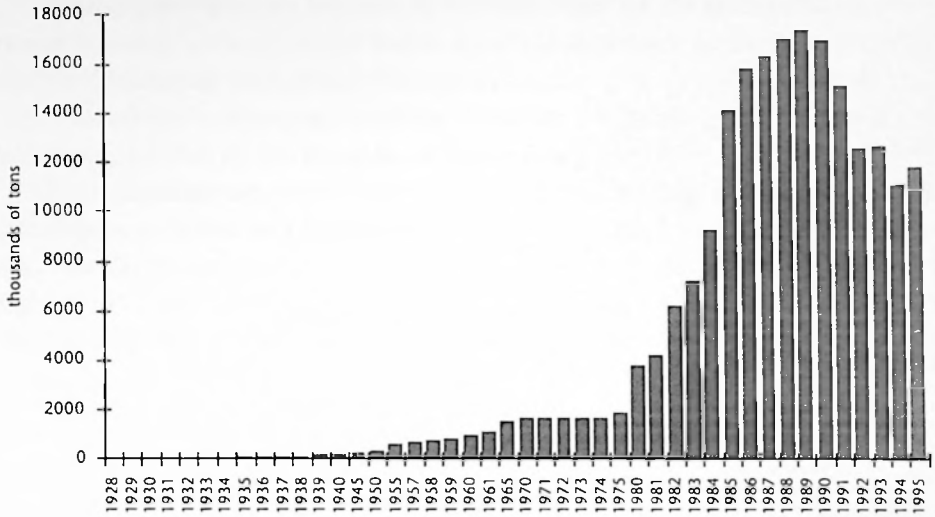


Figure 2.6. Coal production in Sakha.

2.3.5. Energy generation (power and heat)

There are four basic energy sources for power generation in Sakha; gas, coal, hydroelectric and diesel fuel. The main cities primarily use gas (Yakutsk), coal (Neriungri), and hydroelectric (the diamond mining cities and villages). Most northern cities in Russia are heated and provided with electricity by a centralized heating and electrical plant. The smaller villages primarily use diesel fuel for electricity production and wood to heat homes. Individual wooden homes in cities, like Yakutsk, also use wood for heat. Most of the diesel fuel is brought in from outside the Republic.

Relatively little electrical energy was used prior to the 1960s. The combination of the new diamond industry and the rising mechanization of the gold mining industry and other industries, led to a growing demand in energy. Electrical energy production doubled between 1965 and 1970, with the development of the gas fields of Vilyui and the coal pit in Neriungri. Electrical energy production doubled again between 1970 and 1975 and again between 1975 and 1980. In 1985, electrical energy production increased nine times from 1965. Since 1991, electrical energy production fell below 1985 levels (see Figure 2.7.).

Sakha is entirely dependent on outside sources of petroleum products, although it has large undeveloped oil reserves. This is the result of a heavily centralized system developed under the Soviet Union. (Sakha Oil and Gas, 1994) Sakha uses about 3.1 to 3.5 million tons of petroleum product a year (about 68,000 barrels a day). (Sakha Oil and Gas, 1995) Petroleum products are distributed by Yakut Oil Products Company (Yakutnefteprodukt). The Yakut Oil Products Company is controlled by Sakha Oil and Gas Company (Sakhaneftegaz), which owns 20 percent of the company's stock.

Petroleum products are brought up the Lena River (in the spring and summer) from the Irkutsk Province, arriving on the Baikal Amur (BAM) Branch of the Trans-Siberian Railroad for distribution throughout the Sakha Republic. The oil products are distributed from 26 main oil products storage facilities. Prices on wholesale and retail petroleum products are controlled by the Republic of Sakha government.

About 20 kilometers north of the city of Yakutsk, the largest petrol storage facility (Zhatai) distributes petrol to 15 petrol stations, eight of which are located in the city of Yakutsk. The city of Yakutsk has the greatest concentration of automobiles and lorries. Throughout 1993 and 1994, the price of petrol (gasoline) was between $0.20 and $0.25 per liter ($0.76 to $0.95 per US gallon). (Sakha Oil and Gas, 1994)

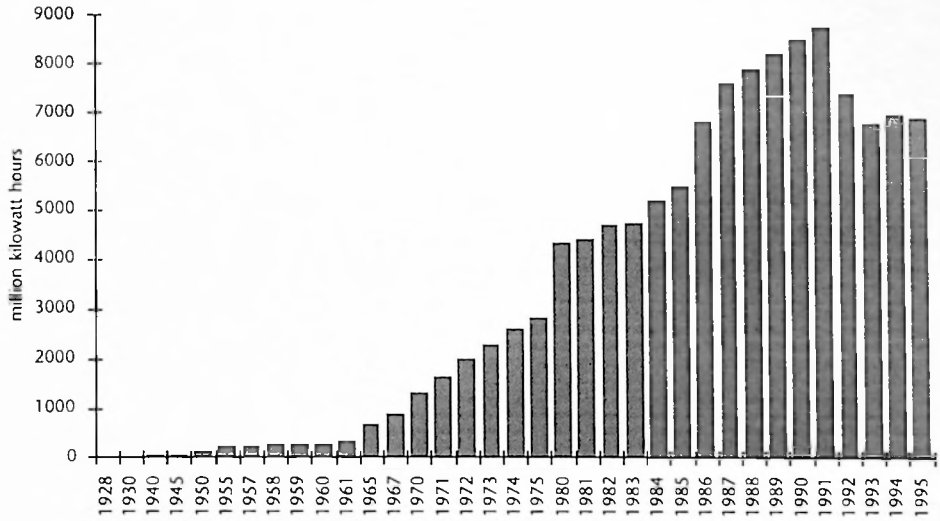


Figure 2.7. Electrical energy production in Sakha.

2.3.6. AGRICULTURE

Before 1991, animal herding in the Russian North was controlled and directed by the Soviet centralized economy through a system of state farms (*sovkhoz*), the basic unit of agricultural activity in the former Soviet Union. (Gregory and Stuart, 1986, p. 268) Increasing the numbers of animals was a priority with the Soviet government (see Figure 2.8.). For example, the numbers of reindeer increased significantly between 1940 and 1966 under a northern-wide policy to increase reindeer herding. The one exception in the increase of livestock in Sakha was milk cows. While milk production increased with the introduction of greater milk producing Russian breeds of cows,[29] the number of cows decreased between 1935 and 1945, and remained less than the 1940 level. The numbers of horses recovered in the 1980s to a population pre-dating collectivization. The number of pigs increased since 1913. Pigs were brought by the Russians and Ukrainians, and are primarily kept in the

urban centers. Pork is not as popular with the Sakha and other indigenous people as beef, horse and reindeer.

Cattle and horse breeding continue to dominate the activities of the rural villages in the Lena and Vilyui River valleys, and reindeer herding remains the backbone of the economic life of northern villages. The general disintegration of the state farm system, after 1991, led to a decrease of all agricultural animals in Sakha (see Figure 2.8.).

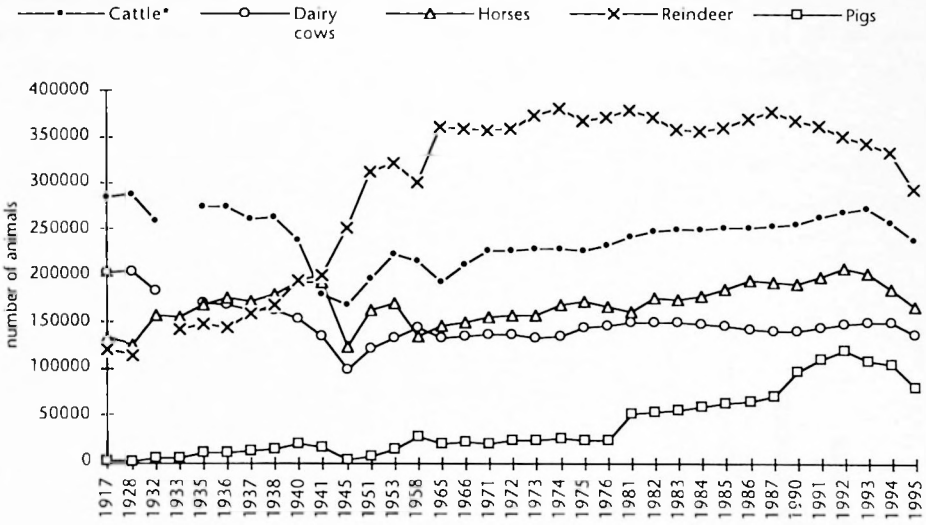


Figure 2.8. Number of domesticated animals in Sakha 1917 to 1995.

Fur harvesting relies on local hunters and rural fur farmers, and is considered an agricultural activity, or at least a subsistence activity. In its heyday, Sakha produced 12 percent of all furs in the USSR. (Slavin, 1972, p. 179) The old system of exporting furs to Western markets is not likely to resume, since demand for fur has dropped drastically in most of the world, except Asia, because of concerns related to the welfare of animals. The best prospects for increasing demand is within the domestic Russian market, which has a utilitarian need for fur. There is a growing demand for fur among the new Russian rich. In the very short term, it is unlikely that the fur industry will expand greatly within Sakha.

2.3.7. Timber Production

Forestry and forestry products represent less than one percent of Sakha's industrial output. It is an industry that has collapsed. In the mid-1980s the Republic was producing 1800 thousand cubic meters, or 6.5 times as much as today (see Figure 2.9.). Southern Yakutia is, naturally, the area where most of the industry is located. Much of the timber (877.5 thousand cubic meters) produced is used for local construction and firewood for smaller villages and homes in cities and large villages not on the central heating plant. Timber exports outside of Russia dropped from almost $1 million in 1993 to less than

$200,000 in 1995. Goskomstat-Sakha, 1994b, p. 25; Goskomstat-Sakha, 1996b, p. 64) There is a strong value-added sector making furniture and building materials for the local market. The chief furniture making factory demonstrated one of the highest profits to gross income ratio. This is probably because local manufacturers can undersell furniture produced outside of Sakha and transported at great cost. Sakha furniture is of high quality, made of solid wood, compared to the foreign veneer substitute. The furniture is patterned on neo-traditional Sakha designs, popular with much of the local population. There is a demand for the furniture in government offices and restaurants, many of which purchased new furniture since the reform started in 1990. The main timber construction firm did well, and this reflects a general growth in small building construction in Sakha.

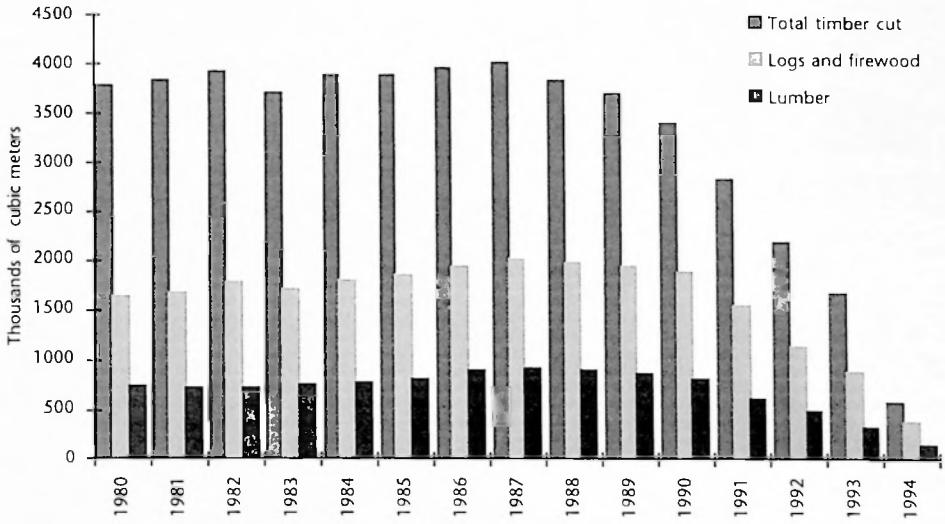


Figure 2.9. Timber and lumber production

2.3.8. Other Resource Production

Several industries have seriously contracted or virtually collapsed since 1991. This may not spell the complete end of these industries, since this process of collapse may allow the industries to restructure and become competitive once more. The dead, in other words, may become resurrected. In general, industries I classify as dead, are shadows of their former selves in terms of production or are clearly stagnating. Formerly important industries that have been destroyed or made irrelevant by the new market conditions include commercial fishing (freshwater fishing in lakes and rivers), mica production and salt production.

Commercial fishing was conducted under collective farms (see Chapter 3.2.) long after most collective farms disappeared in the 1950s and 1960s (see Figure 2.10.). In the 1940s, Sakha produced over 12,000 metric tons of fish. These collective farms did not

survive the agricultural re-structuring. Total commercial fishing equaled less than 1,000 tons in 1994. It should be noted that fishing remains an important subsistence activity.

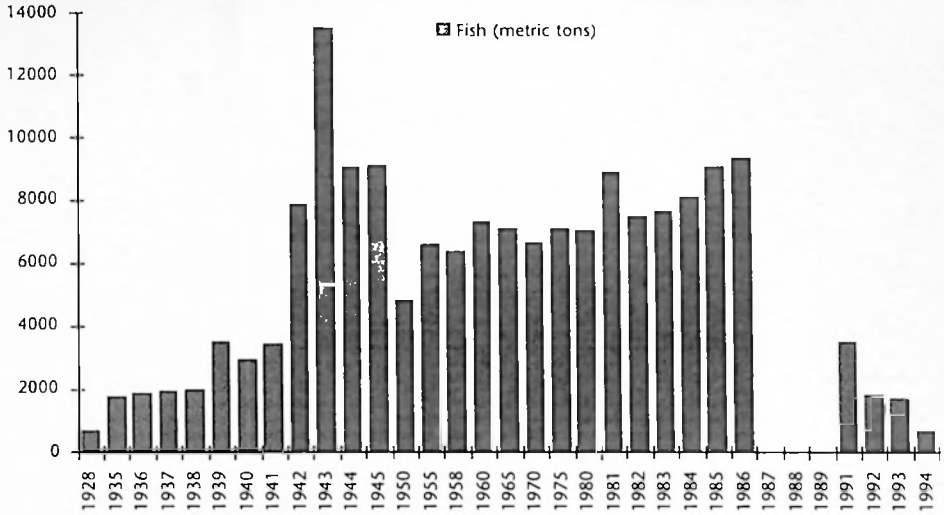


Figure 2.10. Commercial fish production in Sakha (no data 1987–1989).

Mica production for use in the Russian electronics industry is an example of an industry that was a victim of decreased demand in the 1980s. In the 1960s over 10,000 metric tons were produced (see Figure 2.11). In the 1970s about 4,000 metric tons a year were produced. From 1991, no mica was produced. Salt production was also once considered an important industry, especially when salt played a major role in the preservation of food (see Figure 2.12). Now salt mining is a defunct industry.

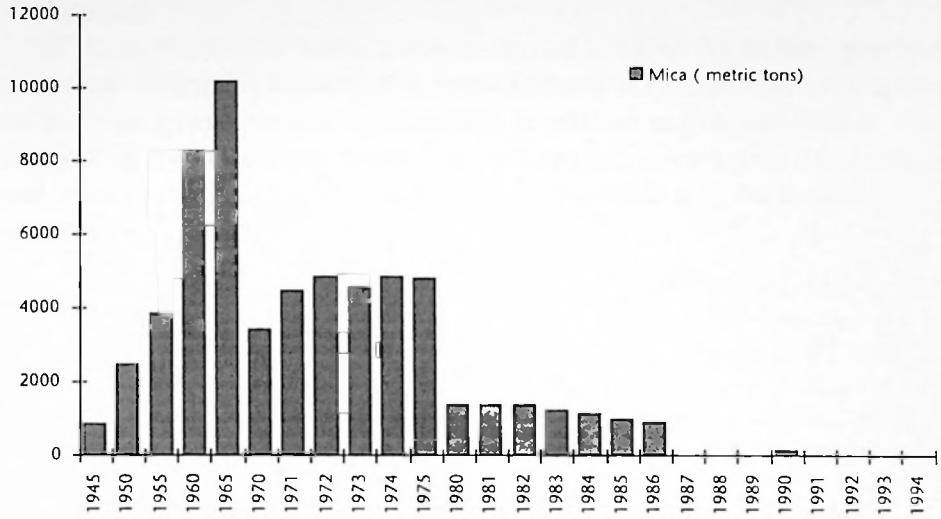


Figure 2.11. Mica production in Sakha.

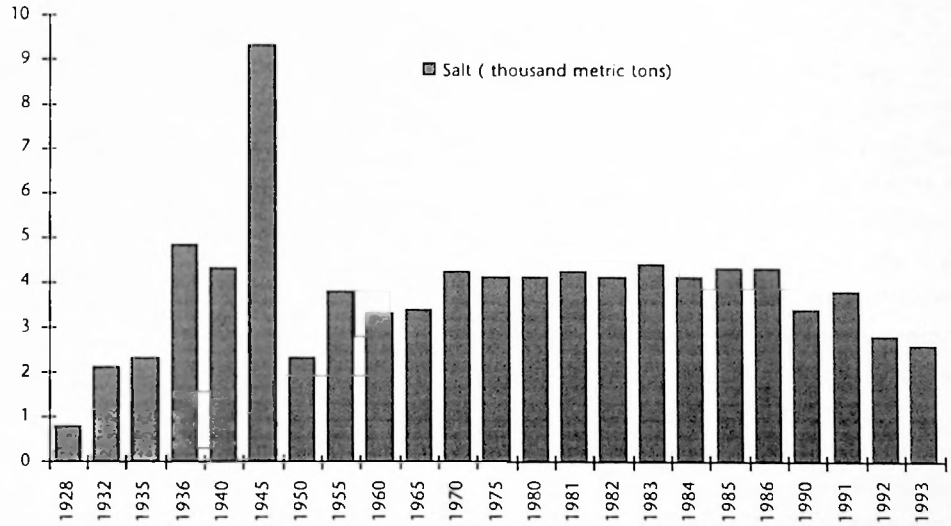


Figure 2.12. Salt production in Sakha.

The yearly production of antimony in 1989, about 45,000 tons of 30 percent concentrate was sold for 362,120,000 rubles (about $27 million). (Poiseev and Alekseev, 1989, p. 2) In 1989, about $15 million of tungsten (254 tons) were produced and $1 million of silver (5.4 tons), mostly as a by-product of gold mining. (Poiseev and Alekseev, 1989, p. 2) Currently, these industries are barely surviving.

2.3.9. Tourism

Before the Republic of Sakha is able to develop a market for tourism, government bureaucrats are stifling the industry. The Sakha Ministry of Foreign Affairs is requiring that tourists purchase a separate visa for about $80, in addition to a regular Russian visa, to visit Sakha. This is a stake in the heart of the fledgling tourism industry. The entire issue is summed up in a travelogue description by a British journalist from the *Independent* who visited Sakha.

> "We are only interested in rich tourists, very rich," explained the region's self-styled Foreign Minister, Vitaly Artamonov. ... "We have no interest in mass tourism," he continued. I did not have the heart to tell him that this was unlikely to be a problem any time soon. But Mr. Artamonov is taking no chances: foreign visitors now need visas. His ministry's bureaucrats are working flat out to prevent hordes of European holiday-makers canceling their week on the Costa del Sol for what—if you include flying time and the ravages of Aeroflot-enhanced jet leg—would be a grim long weekend listening to lugubrious Russian pop music and munching stringy chicken in Yakutsk's best, and basically only, restaurant, The Lena. (Higgins, 1994, 15 October, p. 9)

2.4. Population and Ethnic Makeup of the Republic of Sakha

The Republic of Sakha is sparsely populated for its immense area, 0.33 people per square kilometer (0.85 people per square mile). There are just over a million people in Sakha,[30] or about 0.7 percent of Russia's population. (Goskomstat-Sakha, 1996a, p. 6) Within the last five years, a significant portion of the population (about eight percent), left Sakha. Since 1991, when the population reached a peak of 1,108,600 people, about 85,400 people emigrated. Many of the emigrants were Russians and Ukrainians who returned to the western regions of the former Soviet Union. Fewer people left the southern regions of the Russian Far East than left Sakha; the Primorskii, Khabarovsk and Amur regions, for example.[31] Since the rate of decline of Sakha's population is slowing, the population will probably stabilize at about a million people (see Figure 2.13.).

Most of the population lived in rural areas until the 1960s, when growth in the urban population outpaced that of the rural population (see Figure 2.13.). There are many rural villages, engaged primarily in agriculture and traditional activities, raising horses, cattle and hay, along the Viluiyi River corridor, which is a tributary of the Lena, located between Yakutsk and the diamond producing regions. Within the last five years, the rural population was relatively stable, and it is the urban population that shows a significant decline (see Figure 2.13.). Since 1991, urban areas lost 46,000 people,[32] while the rural population only lost 1,900 people.[33] This probably occurred because the non-Native population living in urban areas opted to leave for places that they considered "home," given the economic instability following the fall of the Soviet Union. Rural Native people were already at home.

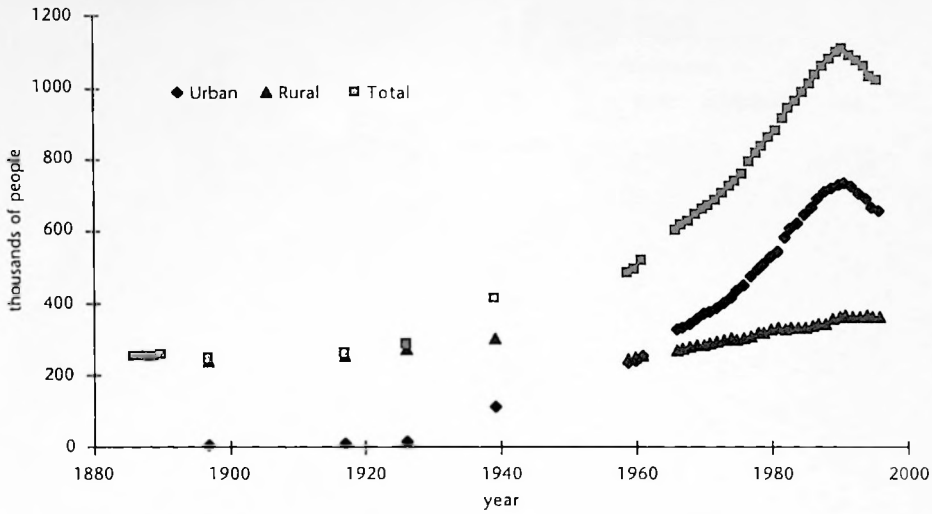
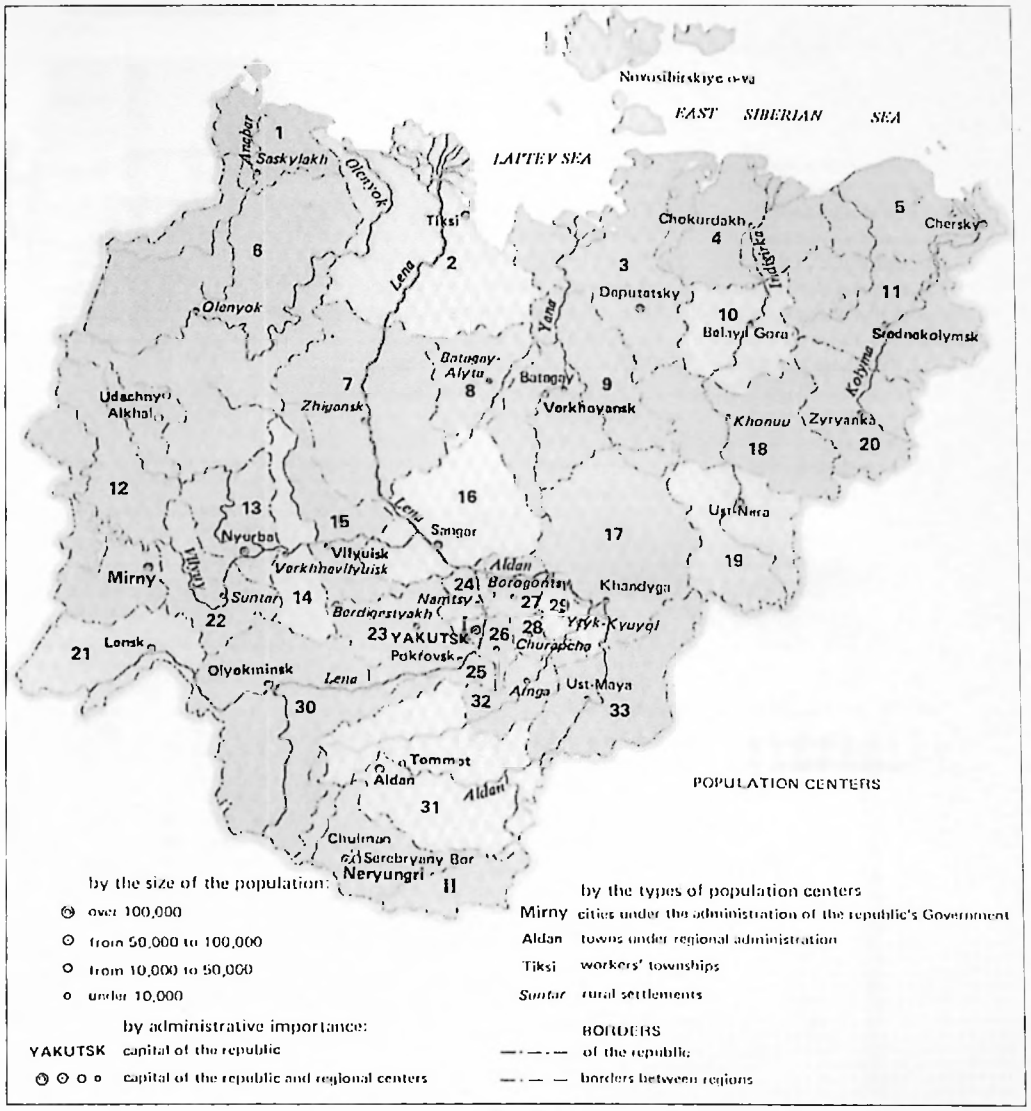


Figure 2.13. Urban, rural and total population of Sakha 1886 to 1996.

The Republic of Sakha is divided into 35 counties. Yakutsk City and Neriungri City are classified as "municipal territories." The other 33 counties are called *ulus* in the Sakha language, and are equivalent to the Russian *raion*. Map 2.5. shows the location of all 33 *uluses* and the two municipalities within the Republic of Sakha. The rural/urban split is very pronounced in the Republic of Sakha as evident in Figure 2.14. which shows the population distribution for all of Sakha's 35 counties. For the most part, the emigration from the Republic of Sakha occurred in urban areas, while many rural areas increased in population between 1991 and 1994. This is illustrated in Figure 2.15. which shows the population change in Sakha's counties between 1991 and 1996.



I	Yakutsk City	1	Anabarsk	12	Mirninsk	23	Gornii
II	Nerlungri City	2	Bulun	13	Nyerbinsk	24	Namsk
		3	Ust-Yansk	14	Verkhneviliuisk	25	Khangalask
		4	Allaikhovsk	15	Viliuisk	26	Megino-Kangalas
		5	Nizhnekolymsk	16	Kobyask	27	Ust-Aldan
		6	Oleneksk	17	Tomponsk	28	Churapchimsk
		7	Zhigansk	18	Momsk	29	Tattin
		8	Eveno-Bytantaisk	19	Oimyakonsk	30	Olekminsk
		9	Verkhoyansk	20	Vernekolymsk	31	Aldan
		10	Abynsk	21	Lensk	32	Amginsk
		11	Srednekolymsk	22	Suntar	33	Ust-Maisk

Map 2.5. Location of 33counties (*uluses*) and two municipalities within Sakha.

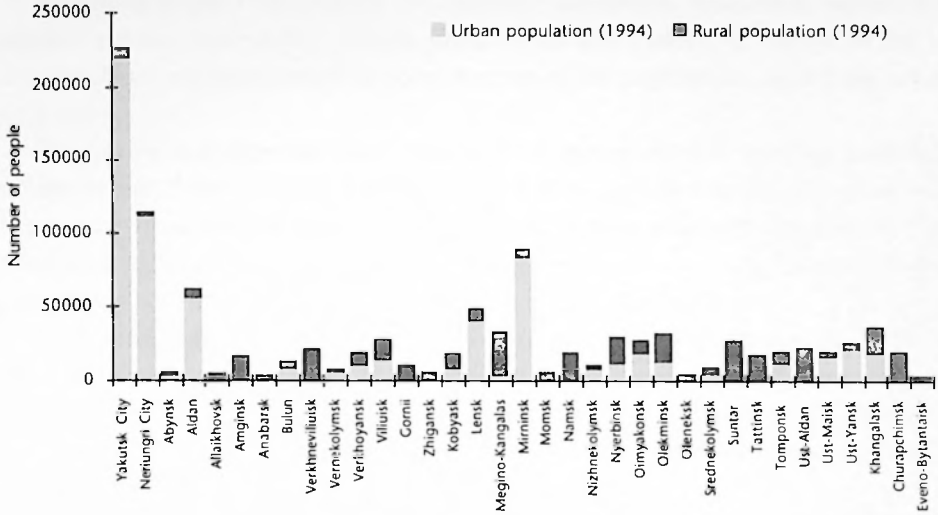


Figure 2.14. Population distribution in Sakha's 35 counties.

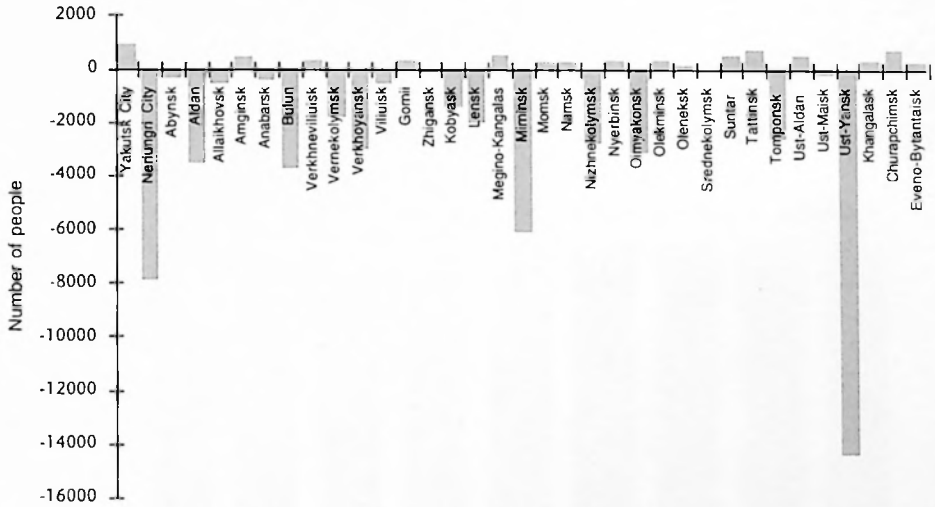


Figure 2.15. Population change in Sakha's counties between 1991 and 1996.

Within the last hundred years, the overall population of Sakha has quadrupled (see Figure 2.13.). At the end of the 19th century, the Republic of Sakha, known then as Yakutia, had a population of about a quarter of a million people. From the 19th century until the 1960s, the bulk of the population[34] was made up of Sakha.[35]

The Sakha live primarily in southern and central Yakutia and are Turkic speaking peoples whose ancestors arrived from Central Asia sometime in the 12th–15th century.[36] (Kozmin, 1928, pp. 5–9)

Beginning in the 17th century, the Russian "old-timers" (*starozhyli*) settled the area as trappers, soldiers (Cossacks), priests, prospectors and traders. At the end of the 19th century, the Russians represented about 6 percent of the population, as did the northern Native groups.

The northern indigenous minorities include several reindeer herding cultures, the Even,[37] the Evenki,[38] the Chukchi and the Yukagir. Traditionally, these groups live in the northern and central part of Sakha and engage primarily in nomadic reindeer herding,[39] supplemented with hunting, fishing and trading. These northern indigenous groups have lived in what is now the Republic of Sakha for at least 1,000 years.

At the end of the 19th century, one percent of the population was classified as "others," mostly Chinese and Korean traders and gold prospectors. For some reason, although Tatars and Jews made up less than one percent of the population, they are often explicitly mentioned in the old books about Yakutia or in the old censuses. (Kolesov and Potapov, 1937)

Modern non-Native Soviet citizens (Russians, Ukrainians and others) arrived by the thousands since the 1920s, and tens of thousands of people came to Sakha in the 1970s and 1980s (see Figure 2.13.). As a result, the ethnic composition changed considerably (see Figure 2.16).

Affiliation with an ethnic group is a more complex issue in reality than the statistical categories suggest in Figure 2.16. Some people associate themselves with two or more of the above groups and during various times have identified themselves as part of a single particular group for political and economic reasons.[40]

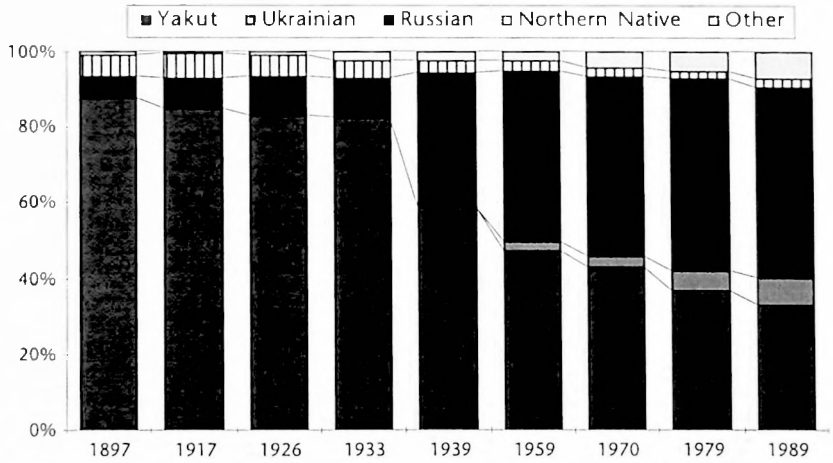
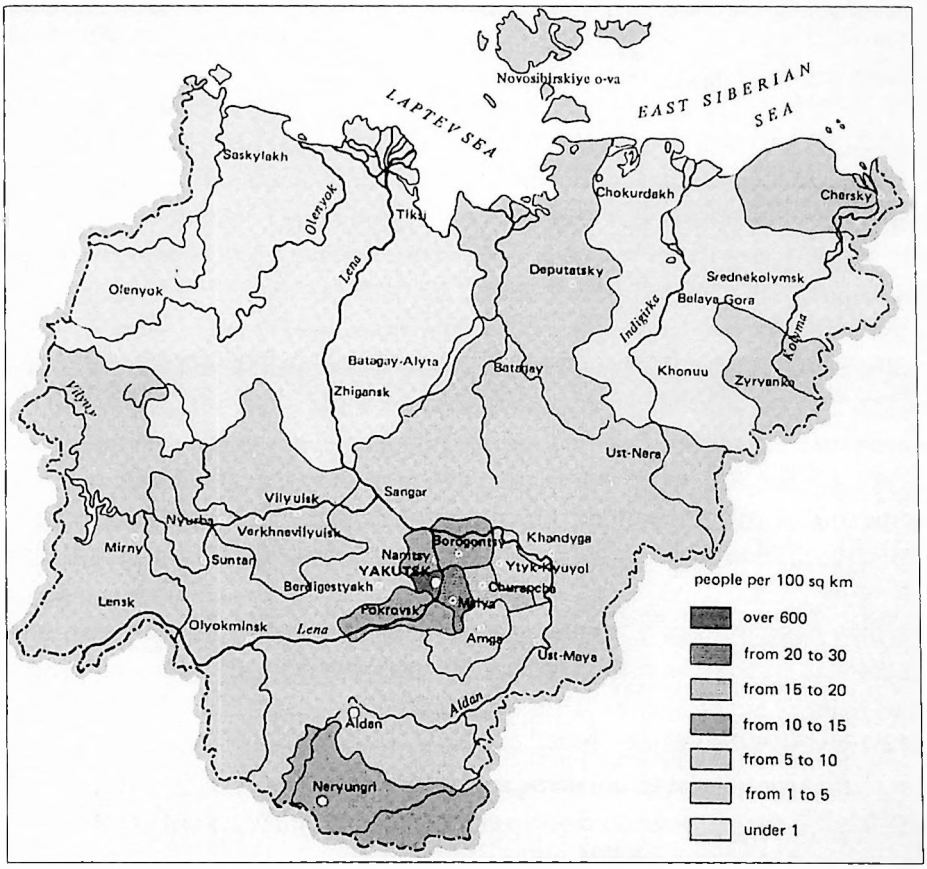


Figure 2.16. Ethnic composition in Sakha from 1897 to 1989.

Today, the population of the Republic of Sakha lives in its industrial natural resource producing centers or in areas where people engage in agriculture and traditional activities. Map 2.6. shows the relative distribution of population in the Republic of Sakha and clearly

shows that the bulk of the population lives in the southern half of the Republic and along its rivers. Most people live in and around the regional capital, Yakutsk, on the Lena River (195,300 people) (Lishenyuk, 1995, p. 26), in Neryungri, the coal mining center (78,000 people) (Lishenyuk, 1995, p. 26), and Aldan, one of the gold mining centers (25,500 people) (Lishenyuk, 1995, p. 26), in the south of the Republic; and in the diamond producing and support villages of southwestern Sakha, which includes the towns of Mirnyy, Udachnyy, Aikhal and Lensk (about 120,000). (Lishenyuk, 1995, p. 26)[41]



Map 2.6. Map of the Republic of Sakha's relative distribution of population

2.5 Political Economy

There are many aspects which separate Sakha from greater Russia. Some of the Sakha nationalists express the desire to be independent. Being part of Russia has many disadvantages during the current economic crisis and poor investment climate. On the other hand, Sakha has been a part of Russia since the 17th century and is geographically surrounded by the Russian Federation. Being part of Russia could be advantageous, if

aspects such as a common market, common currency, federal support and a common multiculturalism remain the key links between Sakha and Russia. Sakha's strategy is, understandably, to reap the benefits of being a part of a larger nation, while asserting its independence on key political and economic issues.

Sakha is one of the most independent entities within the Russian Federation. Russia, and more importantly, the Yeltsin regime, are willing to give the Republic of Sakha, and other former "autonomous" republics, political and economic concessions in exchange for loyalty to the Russian Federation. This was especially true during the long drawn out conflict in the Chechen Republic.

2.5.1. Origins of Sakha's sovereignty

Sakha's unusual status includes "partial sovereignty," and gives the Republic certain advantages over regular members of the Russian Federation (*krais, oblasts, okrugs)* in trade, investment and development. (Argounova, 1995) The new relationship between Russia and Sakha that gives political and economic advantages to former autonomous republics is related to the history of the collapse of Soviet Union. During the coup that immediately preceded the collapse of the Soviet Union, all the full-fledge republics, including the Russian Federation, proclaimed their independence of the Soviet Union in defiance of the coup leaders. In the wake of the declaration made by the larger republics, some of the smaller autonomous republics within the Russian Federation also declared their independence. The Republic of Sakha declared its sovereignty on 27 September 1990. (Argounova, 1995) Sakha took on attributes of statehood, such as a flag, an anthem, laws on citizenship, but most importantly, and central to our discussion, Sakha declared the right to control the resources within its regional borders.

Sakha proclaimed sovereignty, but did not renounce its incorporation within the Russian Federation. Over the next four years Russia and Sakha worked on defining their new political and economic relationship. Like other republics within the Russian Federation, and unlike the other political subdivisions of Russia (*krais, oblasts, okrugs*), Sakha's relationship with the federal government is governed by a packet of special documents. (Argounova, 1995) These documents include three major documents: the Federal Treaty of 1992; the 1993 Constitution of the Russian Federation; and the 1992 Constitution of the Sakha Republic (Yakutia), amended in 1994. These documents define the status of the Republic of Sakha and are the legal basis on which Sakha enjoys a certain level of economic independence. (Argounova, 1995; OECD, 1995, p. 61)

The Federal Treaty, signed by all political units, except the Chechen Republic and the Republic of Tatarstan (Argounova, 1995) ".... distinguishes between 'sovereign republics' and other units (*krais* and *oblasts*), which do not possess sovereignty, even though the Constitution of the Russian Federation declares all members of the Federation equal in their rights (Articles 5, 72.2, 73)." (Argounova, 1995) Ostensibly the document defines the "... delineation of spheres and powers between the federal government of the Russian Federa-

tion and the governments of the sovereign republics within the Russian Federation." (Argounova, 1995) In reality, the language that makes up the sovereignty packet can be interpreted either in favor of a strong federal center or an almost independent Republic of Sakha. For example, the Constitution of the Republic of Sakha states that its laws take precedent over federal laws on the territory of Sakha. (Argounova, 1995) This directly contradicts the Russian Constitution which states that its laws take precedent over any other lower standing laws (i.e. Republic of Sakha laws) within federation territory. (Argounova, 1995) At the same time, Russia, within the context of the treaty system, organized itself into a federation of "recognized" sovereign former autonomous republics. (Argounova, 1995) Within the treaty system, Russia even goes as far as to cut separate deals with the various republics. (Argounova, 1995)

The Republic of Sakha's advantages were gained in a high stakes political battle with Russia between 1992 and 1994. It involved lengthy negotiations over documents that remain inconclusive and a *de facto* battle over fiscal power and control of resource revenues. This fiscal battle is referred to in Sakha as the "budget war." (Argounova, 1995) The budget war pitched the fiscal autonomy of Sakha against the amount of subsidies and credits provided by the Russian government. The Russian government finances yearly purchases of petroleum products, food and other supplies.

Under the old system, the Soviet government took all the resources in exchange for financing all industry and the Republic budget. Accounting by the central government made it appear that the federal government subsidized the Republic of Sakha by undervaluing the economic rents and overvaluing federal inputs. For example, the diamonds exported from Sakha were not accounted for at market prices or in hard (non-Russian) currency. In fact, they did not exist in any accounts, except the secret ledgers of the State Planning Agency and the Communist Party Central Committee. (Tichotsky, 1993, pp. xiv–xv) Yakutia, was, therefore, a northern ward of the Soviet government. In addition, a system of credits for regional northern governments was devised in order to pay for goods at the beginning of the shipping season, which were repaid as the goods were used over the course of the year, or many years.

Every year, a huge shipment of goods was organized for Yakutia in the late spring and summer. The goods were moved from the Baikal Amur branch of the Trans-Siberian railroad to the river ports of Vitim and Lensk for redistribution along the river system, in the south (see Map 2.6). A second major transport route was tied into the Northern Shipping Route along the Arctic Ocean and down the Lena River, from the north (see Map 2.6). This system worked because of the centralized manner of distribution and the artificial price stability for all goods. Prices in the Soviet Union barely changed and interest rates were extremely low. Prices in the North would be the same for five or ten-year planning periods. The demand for the principal resource was often driven by world markets, but little supply or demand decisions were price-dependent for the supply and infrastructure economy of

the Republic of Sakha. After the fall of the Soviet Union, Russia was unable to maintain the supply and credit system at the same level.

Sakha wanted to see the subsidized system of supply continue and claimed that it was owed this assistance as a member of the Russian Federation. At the same time, Sakha also negotiated hard to have the right to capture as much of the economic rent from diamond sales as possible. During the war in the Chechen Republic, the Yeltsin government showed an interest in cultivating the support of the former autonomous republics in order to quell criticism of an unpopular military action. The Russian legislature was neither supportive of the Yeltsin government nor the manner in which Yeltsin carried out the war in the Chechen Republic. Some legislators expressed the thought that Yeltsin's policy was too hard with the Chechen Republic. Other legislators, mostly nationalists and communists, felt Yeltsin should deal with greater ferocity in the Chechen Republic. During this time, many conservative members opposed the concessions being made to regions like Sakha and wanted to continue a highly centralized relationship between the region and Moscow. People who favored nationalist policies in other areas of Russia accused the Republic of Sakha of stealing infrastructure built during the Soviet period. Within Sakha, the same Soviet infrastructure was viewed by many as a small part of just compensation from a former colonist. The constitutional and treaty documents have proved to be of little help in resolving conflicts, since the documents contradict each other on major points involving economic and political freedoms.

The Republic of Sakha followed a strategy that pushed for a maximum advantage, without antagonizing the various groups in Russia. This did not mean the process was smooth. Threats and bluffs came from both sides. During the budget war negotiations between Russia and Sakha, the Russian government held back subsidies and credits, while the Sakha government retaliated by redirecting diamond revenues into offshore banks, out of Russia's reach, and withholding tax revenues.

The tedious process of tit for tat over constitutional documentation between Russia and Sakha was paralleled by specific decisions about diamond revenue flow, taxation rates, federal credit programs and budgetary relations between Yakutsk and Moscow that were only vaguely documented. Many of the major decisions were made behind closed doors, shrouded in secrecy, and relied on heavy politicking, such as a close personal relationship between President Yeltsin and President Nikolaev of Sakha. Through a combination of careful political negotiations, behind-the-scenes agreements, and occasional threats, the Republic of Sakha won for itself a surprisingly greater independence over the control of taxation and revenue flow from resource development, compared to almost any other political unit within the Russian Federation. (OECD, 1995, p. 61) Much of the Republic's political and economic independence remains untested, so that the limits of power between Republic and Federation are still developing.

2.5.2. SAKHA AND SOVEREIGNTY

The political leadership of the Republic of Sakha used its unique economic and political situation to create a buffer between itself and the general Russian economy. This buffer evolved through the resolution of issues such as a revenue sharing scheme of economic rents from diamond sales with the Russian Federation and relatively independent fiscal autonomy within the Republic of Sakha. At the same time, many of the ties Sakha maintains with the federal government are reminiscent of old Soviet-style ties. Sakha continues to receive preferential federal credits as a northern territory and federally sponsored economic programs that promote infrastructure development. Soviet-style interaction with Moscow also assists in insulating Sakha from some of the changes experienced by the rest of the country.

Presently, Sakha's macroeconomic policy focuses on securing as many federal transfers as possible, in light of the Russian budget crisis, and on capturing the maximum amount of taxes and economic rents. In March 1994, the Russian government promised the Sakha government funding for regional development that will focus on Sakha's social and economic development until the year 2005. (Shtyrov, 1995) In addition, the Sakha government continues to lobby the Russian Federation and receive large amounts of low interest credit as a northern territory, in order to buy essential supplies, including petroleum products and goods for rural regions.

The present Russian supply system is significantly reduced, relative to its former scale under the Soviet Union. The smaller scale of centralized supplies and the political nature of credits makes each subsequent yearly endeavor to deliver supplies a crisis operation. In the summer of 1996, with two to four weeks of guaranteed open water, adequate supplies of petroleum products were not delivered. The winter of 1996 may see the advent of costly emergency airlifts of fuel. The current chaos highlights the problem that supply is no longer centrally planned in Moscow, but also is not motivated by private initiative.

Much effort was made to secure as many exceptions as possible for Sakha as a constituent member of the Russian Federation. These advantages are slowly being incorporated into the constitutional documentation between Sakha and Russia. For example, in 1996, a new set of documents was prepared by the Sakha Parliament that outlines in greater detail specific issues of financial and resource rights between Russia and the Republic of Sakha.[42] In short, the new Sakha documents reinforce extremely broad rights over resources and fiscal responsibilities for the Republic. Russia had not approved these documents as of February 1996.

Since 1994, most of the functions formerly held by the Soviet and Russian government managing in the economy and government of Sakha were taken over by the Sakha government. The Republic of Sakha secured a significant level of fiscal authority. Along with other previously "autonomous republics" (Tatarstan, Bashkortostan and Kareliya), the Republic of Sakha secured the right to keep most of the tax revenues collected within its borders. (OEDC, 1995, p. 61) For example, ordinarily the value added tax (VAT) receipts are

split up to give the federal government 75 percent and the region 25 percent. (OEDC, 1995, p. 61) The Republics of Sakha, Tatarstan, Bashkortostan and Kareliya circumvented this process and won the right to keep all the tax revenue collected within the Republic. (OEDC, 1995, p. 61) For Sakha, this includes profits and resource taxes from the Diamond Russia Sakha Company, which is registered in the Republic of Sakha.

The Sakha government also avoided or modified many of the structural changes initiated by Moscow's market-based economic reforms. In some cases, Russian-wide policies were applied in such a way as to subvert the intended result. In other cases, the policies were simply ignored. For example, many of Russia's attempts at "shock therapy" or rapid economic reforms, which arguably were not employed effectively within Russia (OEDC, 1995, p. 11), were never implemented by the Republic of Sakha. The Sakha government selectively adapted many of Russia's federal policies. One example is the slow approach Sakha took to privatization (see Chapter 5).

Major changes that related to Russia's overall monetary policy and inflation were beyond Sakha's control, but Sakha compensated for rapid inflation by keeping its budgetary income in foreign currency for as long as possible and took advantage of Russian government low interest loans made available for northern territories. The Sakha government, like its industries, continues to drag its feet in repaying centralized Russian Federation debt. By stalling on repayment, Sakha makes a huge profit on the difference between the original loan premium and the eventual premium whose value is worn away by inflation.

Also the federal monies may be used for lucrative short term deals in completely unrelated trade activity after the money is released to the Republic of Sakha and before the final authorized purchase is made. For a recipient of a federal credit, money taken at the lower federal interest rate can be lent out again (usually just part of the money to avoid suspicion) at a higher interest rate, or to buy a consignment of consumer goods, food or liquor, that can give a return of over 200 percent within six weeks. I was told by several business people that obtaining federal credits for goods guaranteed a profit if the money is allowed to "go round" *(krutit dengi)*, before it is used for its assigned purpose. Banks in Russia are notorious for having money go round during interbank transfers. Interbank transfers often take more than a month or are lost for short periods of time, during which time the money is lent out or used by the bank to earn more money. One of the costs of doing business is said to be a bribe to the bureaucrat in charge of the federal credits and, occasionally, the banker.

Sakha has become extremely effective at dealing with what Lewis calls the "easiest problem," capturing economic rent. (Lewis, 1989, p. 1559) In the Soviet Union, the opportunity for a region to directly capture economic rent and control regional revenue was not possible. Today, most of the Republic of Sakha's regional income and the region's budget is derived directly from revenues generated from economic rents from mining rough diamonds.

In Sakha, the federal-state (provincial) relations do not follow the American-styled tradition that evolved in two hundred and twenty years of constant and elaborate definition

and re-definition of complex relationships. Rather, the current "devolution" of power in Russia is reminiscent of decentralization into the *Sovnarkhoz* (a Russian acronym that stands for a Regional Council of the Economy) units that occurred after Stalin's death. (Gregory and Stuart, 1986, p. 133) The *Sovnarkhoz* was promoted by Krushchev in 1957 as an attempt to revive the original Bolshevik regional economic administration and move economic decision making from Moscow to the regions. (Gregory and Stuart, 1986, p. 133) Instead of the expected subsequent devolution of power to municipal and local entities and to the firms and enterprises, the regional administration tightly controlled all the activity and filled in the vacuum in the command structure Moscow left. Brezhnev's job of reinstating the command structure was quite easy and consisted of centralizing the *Sovnarkhoz* system. (Gregory and Stuart, 1986, p. 133)

Sakha today is a hybrid between a *Sovnarkhoz*, and an American state in its relationship with the federal government. Sovereignty of American states and states rights are usually associated with populist rights against the elitism of the federal government. Sakha's sovereignty, unlike that of American states, is not a populist sovereignty. Sakha's sovereignty can be better compared to an exclusive territory granted by Russia's President Yeltsin to a loyal ally, Sakha's President Nikolaev. Nikolaev was elected President of Sakha in 1991 in a Republic-wide election. Within Sakha, President Nikolaev and his government have a great deal of political and economic power. The current presidency is extremely aggressive in consolidating its power-base. (Tatarinov, 1995, p. 3) For example, in 1995, the President attempted to extend his term in office to the year 2001, without holding a presidential election, (Sasaki, 1996, 23 October) and instead using a referendum. (Tatarinov, 1995) In February 1996, I talked to several Sakha citizens who alleged that it was a specific clause within Russian legislation that governs extensions of republic presidents' terms which convinced the Sakha President to rescind the referendum. This clause states that for such a referendum a straight majority of all registered voters is required, not a straight majority of voters participating in the referendum. Therefore, assuming a 70 per cent turnout of eligible voters, the President would need a minimum of 72 per cent of votes cast to pass the referendum. In the 1991 election, Nikolaev had received 76.7 per cent of votes cast, or 57 per cent of the votes of all registered voters. In October 1996, it was alleged by one of Moscow's daily newspapers *(Sovetskaya Rossiya)* that President Nikolaev "had to back down in the face of charges that he was violating the Russian Constitution." (Sasaki, 1996, 23 October)

In October 1996, *Sovetskaya Rossiya* also alleged that the political research center attached to President Nikolaev's office drafted a secret plan to substitute the existing Sakha Constitution with one that did not reflect "the desire of the former Communist Party nomenclature in the [Sakha] Parliament to weaken the President and harm his personal authority." (Sasaki, 1996, 23 October) The political research center proposes to prove the existing Constitution is without legal standing and

proposes that " the President disband the Republic's legislature and convoke a Constitutional Assembly to adopt the new constitution." (Sasaki, 1996, 23 October)

2.6. Business climate

Foreign companies are not very eager to invest their money either through joint ventures or directly into Sakha. One reason is that Sakha does not want to give control of a project or direct ownership of a resource to a foreign company and cannot because of Russian law. Most foreign firms would need this degree of control before investing considerable sums of money over a long period of time. In addition, the level of risk incurred by a foreign investor would require an anticipated higher return on investment. An analysis of Sakha's investment proposals, by Sakha's major investment firm, showed that only one foreign investment proposed in Sakha would earn more than 20 percent return on investment as presently structured. (Ivanov, 1995)

Sakha has never had a loan, managed a large foreign investment, or dealt with the bond market. Sakha's opportunities from large revenue flows from diamond sales are largely unrealized. Sakha officials claim to be negotiating large investment packages from the Swiss. This was a result of the President of Sakha's trip to Switzerland. The same claims were made three years ago about Austrian investments, after an exchange of business and government leaders between Austria and Sakha. Neither of these investments has yet materialized. It is technically possible at this point for the Sakha government to directly borrow money on the open market. The Sakha government is only recently expressing interest in borrowing money and guaranteeing investments.

Borrowing money on the open market is difficult for Sakha because of the distrust of Russia's political stability. Although Sakha could put up collateral in the form of diamond earnings (accounts receivable) at De Beers (the western company that sells diamonds for Sakha), it is reluctant to do so. The Russian government borrowed $1 billion from De Beers in 1990 with a supply of Sakha diamonds held as collateral by De Beers. (Ogilvie-Thompson, 1995, p. 5) This loan was repaid by November 1995. (Ogilvie-Thompson, 1995, p. 5)

The reason the Sakha government is reluctant to borrow money is not related to an aversion to creating debt, but rather to a misunderstanding of the debt structure. For example, Alexander Kim, president of the legal firm that will broker the Sakha-Korea gas pipeline deal, should it ever come to pass, explains that diamonds can not be put up as collateral because:

> ... collateral of diamonds can be considered hidden as a sale of diamonds outside the quota [see Chapter 6]. For example, the Republic gets a license to export diamonds for deposit abroad as collateral for a loan. Then it does not return the loan. You get a kind of sale of diamonds. (Ivanov, 1995)

Of course, this misses the point of creating a line of credit. Defaulting on a loan should be avoided by the government at all costs, since it would only be able to do this once. The widespread fear among government officials in Sakha is that collateral will

disappear. This lack of understanding about the nature of collateral gave rise to a common Russian proposal to use a mineral or oil or gas deposit as collateral. Who would want a deposit of minerals in the middle of Sakha as collateral against millions of dollars in cash? The Sakha have discovered that this proposal is unwelcome by foreign investors.

In other words, Sakha's distrust of the foreign debt market is answered by the distrust of Sakha by foreign investors. Alexander Kim explains the response he received from representatives of western investment banks.

> First of all, the law prohibits foreign banks from owning Russian sub-surface rights. Licenses give rights for exploration, development and use of mineral resources ... You still have to pay for these rights. Furthermore, the [foreign] banks do not need our resources. They are financial-credit institution. They will not want Yakutia's resources. (Ivanov, 1995)

Cut diamonds are technically usable for collateral, but they are not sufficiently liquid for most investors and the diamond market is insufficiently stable for investors to loan large sums of money backed by diamonds. The Sakha government was told that it would be given 80 percent of the value of gold it put up for collateral in Swiss banks (Credit Suisse and a branch of Merrill Lynch) because of the price fluctuations of gold. (Ivanov, 1995) The Sakha government announced this was not "profitable." (Ivanov, 1995) More likely, there is probably not enough gold available for a significant loan. The gross value of gold production in Russia is about $300 million a year, of which Sakha is entitled to 40 percent.

Re-directing Sakha's hard currency earnings is rather unlikely, because much of the money is already committed for the government budget. Possible surplus funds under control of the President of Sakha, like the Fund for Future Generations (see Chapter 6.2.3.), may have as much as $1 billion. These funds are also unlikely to be mobilized.

Another reason no real investment has come into Sakha is that the government and the firms want to have their cake and eat it too. That is to say, they want debt and equity investment, but they also want complete control of the project, set the terms of repayment, receive most of the profits and not bear any responsibility or risk should the project fail. The remnants of Soviet psychology suggest that land should rule over capital. What Sakha needs to learn, and what Marx knew well, is that the owner of land or the resources is often the weaker and poorer cousin of the owner of capital.

The leadership in Sakha is experiencing difficulties focusing on several important priorities. To become successful and to promote long-term predictable growth, I would argue that Sakha needs to:

- establish confidence in the Republic's ability to repay debt;
- make information available on industries, the region and natural resource wealth;
- make fiscal and government information available;

- use the regional budget to invest in low risk investments and enhance long term wealth;
- avoid unproved market or industry development that does not have a reasonable chance to create a revenue stream;
- create opportunities for real import substitution and avoid "rip off" or unrealistic schemes that only operate on subsidies or transfers; and
- use reserves and guarantees to enhance trust and reduce risk.

The Sakha leadership is small. It consists of the President of the Republic and his closest advisors. The revenues from diamond sales that they control are relatively large. The general tendency of the leadership is to be elitist, to be greatly concerned with appearance and demonstrate a general lack of interest in mundane and practical steps in improving the investment climate. The Sakha leadership, used to easy diamond revenues, plans grandiose projects that are unlikely to be feasible under market conditions. At the same time, the government suppresses financial information and excludes the public from the decision making process.

Sakha has an opportunity to turn its economy around and improve the general welfare of its population. The greatest drawback for Sakha is that it has no practical guiding principles to follow, particularly in the use of its natural resources. "Development" and "investment" are common terms used in Sakha by its leadership. (Nikolaev, 1994) But why develop or invest in Sakha?

Mikhail Nikolaev, the President of the Republic, is unquestionably the most powerful person in the Republic. No significant investment or economic endeavor can move forward without his overt consent. Most viable opponents to Nikolaev's presidency have been recruited to work for the executive branch of government.[43] Ruslan Shipkov, President of the Sakha Oil and Gas Company, was tapped as a deputy prime minister. Alexey Tomtosov, former mayor of Yakutsk, was also named a deputy prime minister. The main exceptions are the two leaders of the Russian Communist Party in Sakha, which now form a pro-federalist right-wing opposition.

President Nikolaev's stated policy for the Republic of Sakha is concerned primarily with the future of the North, and with Sakha's resources and the commitment of the regional government to raise the quality of life for the people of Sakha. (Nikolaev, 1994) How the President's policy is to be implemented is unclear. (Nikolaev, 1994) The regional government is extremely secretive about what it actually does with the tremendous revenues from resource export and most citizens of Sakha seem to have little awareness that they are among the wealthiest residents of Russia. This issue is a central theme in Chapter 6. It is also unclear how the President's existing policies toward industry can be made consistent with a policy to attract the interest and trust of foreign investors. (Goskomstat-Sakha, 1995a; Goskomstat-Sakha, 1996a) The industries that the Sakha government controls,

most importantly diamond mining, gold mining, coal mining and oil and gas development, currently focus on maximizing gross income, rather than profits. (Goskomstat-Sakha, 1995a; Goskomstat-Sakha, 1996a) This is discussed in detail in Chapter 5. Western investors are unwilling to engage in any activity that does not demonstrate an expressed profit. (Fischer, 1995, personal communication)

Another issue that concerns investors is crime within Russia. When the Russians refer to the Mafia and crime, in addition to dealing with actual organized crime, they also include the system of bureaucrats who effectively control all sorts of licenses, permissions, collateral, loans, etc. (Aslund, 1994, p. 69) Cultivating personal contacts to diminish these barriers to business requires skill and patience beyond most foreign investors' capabilities. Time is needed to distinguish the various players in Russia and to form strong links with those actually interested in seeing the project succeed for financial or personal reasons, and those players who are trying to siphon money for themselves and are unconcerned with the outcome of the project. A foreign investor must spend considerable energy identifying allies and learning to work with the bureaucrats who control the choke-holds of the economy.

2.6.1. Changes in International Geopolitics

After the fall of the USSR, changes in international geopolitics created a new opportunity for the Republic of Sakha. Long isolated from the world economy under the Soviet system, Sakha is well placed geographically to tie into Pacific markets. Being a part of the Russian Far East means that Sakha has potential access to the markets of the Pacific Rim Countries[44] that were previously denied the region under the Soviet government (see Map 2.1.).

The processes of change that began under Gorbachev are particularly important to the Russian petroleum and mining industry. Petroleum and mineral production is at the heart of the Russian economy, and reversing the current decline in petroleum and mineral production is critical to reversing Russia's overall economic decline. For those regions of Russia with mineral resources, the future path of petroleum and mining development is particularly important, because of its potential economic, political, social and environmental consequences.

In the 1990s, Sakha and the Russian Far East, a long-time isolated backwater of the Soviet Union, began to change their role as a parochial resource storehouse for Moscow's central planners to an important outlet for the Russian international market. Russia is a country that has lost its southern territories and most of its western outlets to the sea. The eastern seaboard of Russia is becoming a new gateway to the ascending geo-political region of the Pacific Rim economies.

From the perspective of the rest of the world, Russian non-renewable resource development has important implications for world energy and mineral supply and prices; opportunities for foreign investment and trade in Russia; and ultimately, the future of

Russia and its place in the community of nations. For Japan, China, Korea and the western United States, the Russian Far East is a potential source of natural resources. Despite many problems, foreign investment, if it is to succeed in the Commonwealth of Independent States, has the best chance of success in the Russian Far East.

A serious barrier for Japanese investment is the prism of Russian nationalist feelings and anti-Asian sentiment. In the Russian Far East, Japanese investment is sometimes viewed with suspicion and this suspicion can paralyze good business plans. The political question of the Kurile Islands is an issue that "... ruled out improving [Russian] ties with Tokyo and using Japanese finance and expertise to revitalize its [Russia's] depressed Far East." (Beeston, 1995, 10 August)

Historically, Japanese, Chinese, Korean and U.S. policy toward the Russian Far East has carried a defense priority. Even before the Cold War, the Russian Far East was a landscape for Japanese and Russian military conflict (1905, 1921 and 1945). The Russian Far East is also one of the few places in Russia that American troops ever occupied (1921). Sakha, being the most removed from foreign borders, was least affected by these defense issues.

At the present time, the area is one of relative peace and the Russian Far East could focus its efforts on developing its economy to satisfy natural resource demand in Japan, China and the western United States. The Russian Far East is not experiencing a commercial boom on the scale most Russians anticipated to replace the vacuum left by the defense driven economy, but at least for the moment, opportunities exist.

2.7. Conclusion

The preceding description of the geography, resources, population and political factors is the background against which Sakha has experienced intense economic and structural change since the fall of the Soviet Union in 1991.

The current conventional wisdom for economic development warns that natural resources do not automatically translate into wealth for a regional economy, and that good economic policy may be more valuable than resources. (Sachs and Warner, 1995b) For all its resource wealth advantages, Sakha is still part of the Russian economy and is associated with the overall poor investment climate that surrounds Russia. (Tussing, 1995, personal communication) Economic reforms were heavily influenced by political uncertainty prior to President Yeltsin's June 1996 elections. Communists and nationalists had significant influence on the outcome of the election. This political instability translates into the kind of investment and legal climate that frightens off foreign investors and adds to the general perception that Russia has a bungling economy. (OECD, 1995, p. 28)

Russia's investment climate is strongly associated with regulatory instability, coupled with a complicated bureaucracy, bribery, and crime. (Aslune, 1994, p. 69) The legal framework, for example, is well-known for being arbitrary. (OECD, 1995, p. 28) There are various legal and logistical obstacles to moving capital, coupled with a weak, but growing,

banking infrastructure. (Tussing, 1995, personal communication) Russia is considered a great distance from money centers. This is compounded for an area like the Republic of Sakha, which is considered even more remote than western Russia.

Westerners have great difficulty understanding Russian local conditions, including project organization and management. (Tussing, 1995, personal communication) Long lead times are required for almost all investment projects, and return on investment is protracted, thereby compounding the associated risk.

Russia has a poor culture of communication (e.g., Russian management often will not bother keeping in touch with the western partner) which is exacerbated by poor technology (e.g. the phone lines are so poor it is sometimes impossible to send a fax across town). Basic economic, business and industry information is extremely difficult to obtain in Russia. (OECD, 1995, p. 2) In addition, there is a language barrier,[45] coupled with different approaches to business. For example, a feasibility study[46] in Russia is a document the government requires for resource development projects and must include specific information and commitments. Profitability of a given project is not necessarily the priority in a given Russian feasibility study.

The general failure to privatize and the lack of success in creating a market economy, are among the biggest barriers for foreign investment, particularly in resource development. If markets fail to develop in the Russian Far East then non-market driven priorities may deteriorate an already fragile investment climate.

CHAPTER 3

PATTERNS OF RESOURCE PRODUCTION IN THE REPUBLIC OF SAKHA

This chapter outlines the process of staples development within Sakha. In the 19th century and at the beginning of the 20th century, Sakha principally produced fur, for delivery to Russia, Europe and China. After the Russian Revolution, gold became Sakha's chief commodity, and was shipped out to maintain the Soviet Union's treasury and balance of payments. Since the 1950s, diamonds, found their way to the global market, fueled development and eventually brought for Sakha the greatest share of revenues of any commodity. I shall argue that an approach that incorporates the primary exporting economy framework for the economic history of Sakha, and other similar northern regions within Russia, is superior to the existing eclectic and contradictory account of development based principally on the influence of the Soviet policy of autarky (self-sufficiency). (Gregory and Stuart, 1986, p. 144) In addition, a staples based approach presents a single consistent historical framework (Findlay and Lundahl, 1974, p. 219) for Sakha's development for at least 100 years. This historical framework is also flexible enough to provide a unified explanation across five different political-economic systems.[1]

Prior to 1992, the Republic of Sakha was officially called the Yakut Autonomous Soviet Socialist Republic. It was also commonly called by its pre-revolutionary name, Yakutia.[2] Yakutia is derived from the word Yakut, the name that the Russian colonists erroneously called the local indigenous people. The local indigenous people call themselves "Sakha." A local legend claims that the mistake arose when Russian traders, traveling down the Arctic rivers into the area soon to be known as "Yakutia," asked the Sakha's northern indigenous neighbors, the Evenki, what the people living in the south were called. The Evenki asked, "yako?" which roughly translates as, "Do you mean the strangers?"[3]

As the name to describe the Republic of Sakha underwent several changes in the last 100 years, the chief economic activities within the Republic of Sakha also changed. A common thread, however, since the 17th century, is that the Republic of Sakha's economic history continues to follow a principal pattern of development. The economic history of the Republic of Sakha is a history of resource exploitation.

3.1. YAKUTIA'S ECONOMY AND THE RUSSIAN EMPIRE

The local Sakha traditional economy, before the arrival of the Russian colonists, involved a semi-settled life-style based on free-ranging horses harvested for food[4] (Seroshevskiy, 1993, p. 250–251), a tradition carried out today. The Sakha horse is a special breed capable of digging through snow to graze on the grass underneath. Seroshevskiy, the Polish ethnographer specializing on the Sakha in the 19th century, believed (based on historical records and oral history), that after the 1880s the Yakut moved from holding mostly horses to also raising cattle and milk cows (Seroshevskiy, 1993, p. 250–251). The dominance of cattle breeding in Sakha culture is a newer "traditional" activity[5]

(Seroshevskiy, 1993, pp. 250–251). The Sakha developed a special breed of northern cattle that was adapted to the cold climate. These cattle look very much like Scottish highland cattle.

Olaf Swenson, an American trader who traveled throughout the Russian Northeast in the early 1920s, described the Sakha cattle as a "... cross between an American buffalo and a cow." (Swenson, 1951, p. 198) Swenson noted that "the low temperatures (it is often as cold as sixty degrees below zero, Fahrenheit) did not seem to bother them a bit and all the cattle I saw there were in fine condition." (Swenson, 1951, p. 198) The Sakha cattle were known for the very rich milk they gave.[6] (Yadrakinskiy, 1994, personal communication)

In the 1890s, horses numbered about 132,000 and cattle about 243, 000. Seroshevskiy notes that there were "... about one head of cattle per person and one horse for every two people [in Yakutia]. (Seroshevskiy, 1993, p. 250) Hay making was an important summer activity, since it was necessary to stock up on additional animal feed for the winter. (Seroshevskiy, 1993, pp. 261–276) Grain growing to make bread became important to the settled Sakha in the south. (Basharin, 1989, p.167–169; Seroshevskiy, 1993, pp. 250–251) Growing grain was introduced by the Russians to the Sakha at the end of the 17th century. (Basharin, 1989, p. 168) Potatoes were introduced by the Russians in the late 18th century and early 19th century and became an important crop, especially for the Russian settlers. (Basharin, 1989, p. 239) Finally, fresh water fishing, hunting and trapping were an integral part of Sakha life. (Seroshevskiy, 1993, pp. 284–296) To the east and north the Evenki, Even, Yukagir, Chukchi and reindeer herding Sakha lived a nomadic life-style herding reindeer, fishing, hunting and trapping.

A brief review of history reveals that under Ivan the Terrible (1580s), the Russians began an eastward expansion along the rivers of Siberia in search of furs, the "soft gold" that brought wealth for the merchants and hunters. (Armstrong, 1965) In 1632, Russians established a fort (*ostrog*) on the Lena River, which became Yakutsk, the present day capital of the Republic of Sakha. In 1635, another fort, the Olekhma Fort, was established on the Olekhma River.[7] The Russian colonists lived in a series of forts or settlements, usually along rivers, in a territory occupied mostly by the Sakha. The actual number of Russian residents was small relative to the great effect it had on the local economy.

In 1633, the Yakutsk fort housed about 200 people; in 1766, about 1000; in 1836 about 3,000. The settlement system involved setting up forts manned by Cossack troops, out of which the fur traders/trappers (*promyshleniki*) operated. The fur traders/trappers were the back-bone of the fur trade. (Armstrong, 1965, p. 59–64) The fur industry attracted merchants, who provided goods for the colonists and local people; priests, who brought the Orthodox religion; and peasants, who planted barley, rye, oats and potatoes. (Armstrong, 1965, p. 59–100)

In a parallel effort to the fur traders/hunters, the Russian government administrators, based within the forts, collected taxes, known as *yasak*, in the form of sable, squirrel

Arctic fox and ermine skins. In 1641, 7,800 sable skins were collected as tribute and in 1672, more than 10,000 sable skins were collected.(Kolesov and Potapov, 1937, p. 57) In 1675, 11,056 indigenous people paid the Russian government 16,791 sable skins and over 6,500 red and cross fox skins in taxes.[8] (Kolesov and Potapov, 1937, p. 57) Interaction between the Russians, the Sakha and other indigenous people was often brutal, especially when Sakha chiefs, sometimes joined by the Evenki, would rebel against paying tribute to the local Russian military leaders. (Kolesov and Potapov, 1937, p. 60) Pyoter Golovin, for example, one of the first Cossack military leaders of the Yakutsk Fort, started the tradition of raising taxes and then raiding, raping and burning villages that refused to pay. (Kolesov and Potapov, 1937, p. 60)

The interaction between rival groups of Cossacks, was sometimes no better. In 1639, the Yenisei Cossacks wiped out a unit of Tomsk Cossacks, after each group of Cossacks backed rival groups of warring Sakha chieftains. (Kolesov and Potapov, 1937, p. 56) In 1642, the first of six major "Yakut revolts," led by a Sakha chief named Mymak, was put down savagely by Golovin. (Kolesov and Potapov, 1937, p. 63) Golovin also had a reputation for making life hard for his own people. In 1645, a group of merchants and trappers wrote a letter to the Tsar complaining about numerous acts of torture, including burning, beating, blinding victims, hanging people with hooks from the ribs, and other atrocities that were committed by Golovin on local Russians. (Kolesov and Potapov, 1937, p. 60) The Sakha would also occasionally revolt against their own local chiefs. (Kolesov and Potapov, 1937, p. 63) In some areas, the Russians recorded declines of the local Sakha population from 50 to 70 per cent as a result of starvation, fighting with the Russians and in-fighting between rival groups of Sakha. (Kolesov and Potapov, 1937, p. 60)

Trading in slaves also became wide-spread. For example, an Evenk woman could be purchased for seven sable skins. (Kolesov and Potapov, 1937, p. 59) Native people who were baptized were, "... equal to Russians and even joined Cossack groups or entered the government service." (Michael and Taylor, 1975, p. 112) In the 19th century the Russians and the Sakha lived in relative peace since, "apart from the payment of fur tribute (and admittedly, there were abuses in the collection of that payment), the Russians were quite content to permit the Natives to live much as they liked." (Armstrong, 1965, p. 114)

Yakutia's extremely cold winter temperatures give its fur-bearing animals some of the thickest and fullest pelts in the world. The Yakutian sable, squirrels, ermine and Arctic fox were highly valued by traders from China, and also were sold at the St. Petersburg fur auction for European clients. The fur trade for Yakutia remained the chief monetary activity through the 1920s. Table 3.1 shows the distribution of items brought and items sold at the Yakutsk city fair in 1888. Figure 3.1. shows the volume of furs sold before the Russian Revolution.

Furs accounted for 30 per cent of all sales at the Yakutsk City market in 1888. In addition to furs, other local resources bringing in considerable revenue were mammoth ivory and musk glands of musk deer (*kabarga*).

At the beginning of the 20th century most fur sales were increasing in Yakutia (see Figure 3.1), but the sale of sable collapsed by 1901 due to over-harvesting. (Mityushkin, 1960, p. 49) Yakutia remained a major Russian fur producer until the end of the Soviet Union, but the industry became eclipsed by the magnitude of people, infrastructure and revenues related to the rise of gold mining of the mid-1920s.

	Brought to trade (rubles)	Brought to trade (percent of total)	Sold (rubles)	Sold (percent of total)
Woolen, paper, silk, cotton and leather goods	R 420,678	24%	R 181,300	17%
Colonial goods and wine	R 319,817	18%	R 137,700	13%
Chinese goods	R 296,000	17%	R 146,000	14%
Porcelain and Chinese china	R 7,112	0%	R 3,700	0%
Metals and metalware	R 40,743	2%	R 16,300	2%
Flour and grain	R 136,132	8%	R 74,000	7%
Fur	R 322,070	19%	R 322,070	30%
Mammoth ivory	R 55,500	3%	R 55,500	5%
Horses and cattle	R 124,600	7%	R 124,600	12%
Glands of musk deer	R 15,000	1%	R 15,000	1%
TOTAL	R 1,737,652	100%	R 1,076,170	100%

SOURCE: Mityushkin, 1960, p. 49.

Table 3.1 Distribution of items bought and items sold at the trade fair in Yakutsk 1888.

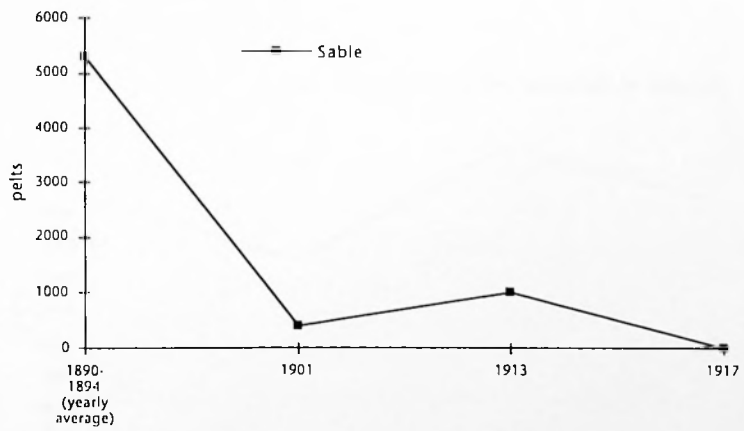


Figure 3.1a. Volume of sable sold at the trade fair in Yakutsk.

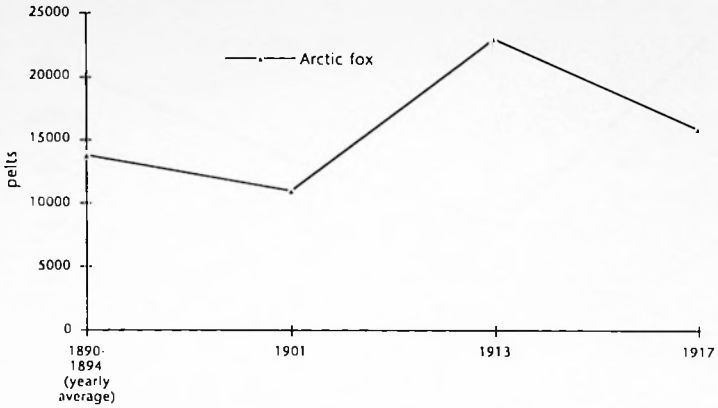


Figure 3.1b. Volume of Arctic fox sold at the trade fair in Yakutsk.

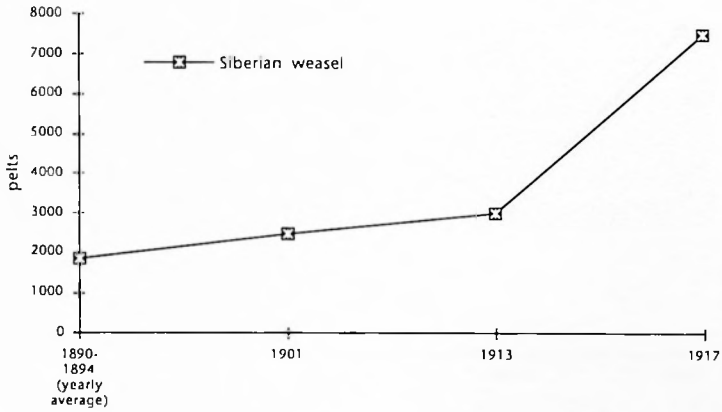


Figure 3.1c. Volume of Siberian weasel sold at the trade fair in Yakutsk.

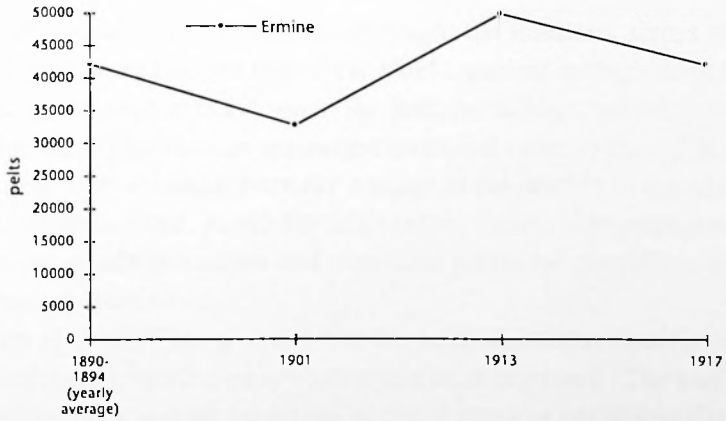


Figure 3.1d. Volume of Ermine sold at the trade fair in Yakutsk.

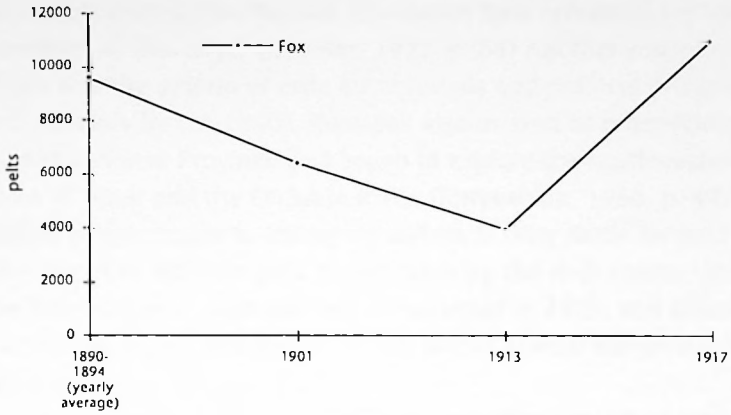


Figure 3.1e. Volume of fox sold at the trade fair in Yakutsk.

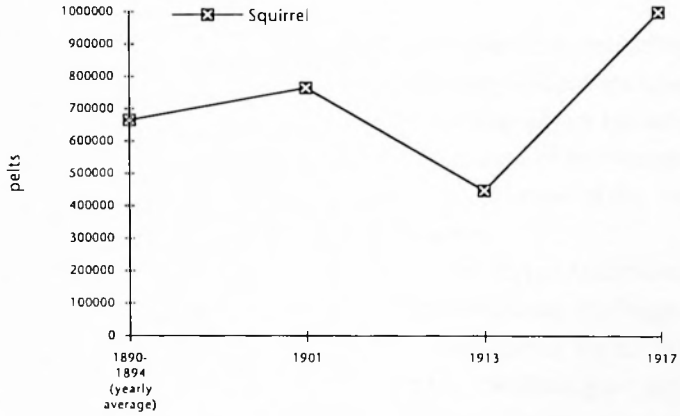


Figure 3.1f. Volume of squirrel sold at the trade fair in Yakutsk.

The eastern expansion to acquire furs brought the Russians across the Bering Sea as far as Alaska. Yakutsk soon became one of the chief logistical springboards for the Russian colonization and exploration of the Russian Far East, including Chukotka, Amur, Okhotsk, Kamchatka and Alaska. The Russian expansion eastward came to an end in 1867 with the sale of Alaska to the United States, partially a result of the decline of the Alaska sea mammal fur industry. (Rogers, 1962, p. 90) For this reason, Russia also decreased the significance of Yakutsk as an administrative and economic center for controlling the eastern section of the Russian Empire.

At the turn of the 19th century, the Russian administrators, traders, trappers, potato farmers and missionaries, continued to control the local economy.[9] The local indigenous people outnumbered the Russians by fifteen to one.[10] Some of the descendants of the Russian "old-timers" (*starozhyli*) who settled the area as trappers, soldiers (Cossacks), priests,

prospectors and traders prior to the Russian Revolution have remained separate from local groups and newcomers to this day." (Gogolev, 1972, p. 64) Another source of Russian migrants in Yakutia was the system of exile for criminals and political prisoners.[12] As early as the 1840s and certainly by the 1890s, Russians also arrived as prospectors from the Lena gold fields in the Irkutsk Province and began to explore the southwestern corner of Yakutia in the area of Vitim and the Olekmin River. (Mityushkin, 1960, p. 49) A lively trade started as the Sakha people began to transport and trade their cattle for gold dust, gold nuggets and other supplies with the gold miners working the river sands. (Mityushkin, 1960, p. 49) The Trans-Siberian Railroad was constructed in 1905, and although it did not reach Yakutia, it brought goods and people by rail within several hundred miles of the Yakut border. (Michael and Taylor, 1975, p. 318)

The Russian Revolution was a political and economic watershed that quickly changed the way of life for the western areas of Russia. In the east, it took the Soviet government a very long time to exert even a nominal control of Yakutia after the Russian Civil War. (Stephan, 1995, p. 161)

Resistance to Moscow's new order in the Russian Far East, including Yakutia, was particularly evident between 1917 and the mid-1920s. Independent-minded Yakut (Sakha) nationalist and various Russian groups held parts of Yakutia, which became a battle ground for various political movements in some of the last skirmishes of the Russian Civil War. (Stephan, 1995, p. 161) The imprisonment and execution of some of the Yakutian nationalists leaders helped break the spine of organized resistance.

Even after 1922, when Yakutia was proclaimed the Yakut Autonomous Soviet Socialists Republic, the new Soviet government had little influence over the huge territory and widely dispersed population. The Soviet government only gained the ability to "Sovietize" Yakutia toward the end of the 1920s. By then, the Soviet Yakutian government had two main policy goals handed to it from Moscow: to implement Stalin's nation-wide policy of collectivization on the Sakha cattle herders, Russian farmers and the northern reindeer herders, and to appropriate a full-blown gold-rush along the Aldan River and transform it into a "Soviet industry."

3.2. Transformation of Traditional Life: Collectivization of Agriculture

In the 1920s and 1930s, the Soviet government's concept was that the activities of indigenous people should be organized by the state around agricultural enterprises called a collective farm (*kolkhoz* or *kollektivnoye khozyaistvo*). The idea was that this would help provide the Soviet Union with ever increasing productive forces for its economy. As Otto Schmidt, the architect of Russian northern development, describes:

> In the USA, after the white population killed most of the Indians, the remaining Indians were put in reservations, where they were kept as museum artifacts ... We need to help our Comrades, these equal citizens of the Soviet

> family of peoples, to stand on their feet, not by patronizing them, not by fattening them up, as if one could fatten up a museum exhibit. Rather we must develop their [the indigenous peoples'] economy and teach new, currently not implemented economic systems in the North. By organizing collective farms ... we must achieve a decisive success in the economic and cultural development of the local [indigenous] people. (Schmidt, 1937, p. 9)

The reality of collectivization and "civilizing" the Native people of the USSR was something altogether different. An eyewitness account by Littlepage, an American mining engineer in Russia in the 1920s and 1930s, gives a different feel to the way the Russians enacted "cultural development" of the indigenous people.

> It so happened that I saw a great deal of the process which the Russians describe as "de-nomadization." In plain English, this means the complete destruction of the old tribal organization of these peoples, and their conversion by persuasion if possible, or by force if necessary, into settled farmers under state control or wage earners in state-owned factories and mines. (Littlepage, 1938, p. 54)

The Yakutian government authorities charged with implement Stalin's policy of collectivizing and Sovietizing the lifestyle of the Sakha cattle and horse owners and the northern indigenous nomadic reindeer herders,[13] were faced with an impossible task, at tremendous distance from Moscow. The indigenous people involved in agriculture numbered over a quarter of a million people, thinly dispersed over an area five and a half times the size of France and largely devoid of year-round transport. In addition, the Yakut *kulaks* (land owners),[14] and Yakut traders did not give up the existing order easily and remained extremely powerful into the late 1920s and 1930s. (Kirby, 1980, pp. 33–42)

The policy of collectivization was rapidly implemented through most of Russia and was considered completed by the mid-1930s. (Gregory and Stuart, 1986, p. 111) There were, of course, many regional differences (Gregory and Stuart, 1986, pp. 91–92), and Yakutia was clearly one of the regions that brought the success average of Stalin's policy of collectivization down. The combination of internal resistance to Sovietization and logistical problems in Yakutia explains the extremely slow pace collectivization took, relative to the rest of Russia. A 1930 memorandum to the Yakutian Regional State Farm Committee of the All-Union Communist Party (Bolshevik) on *Preliminary Results of Building Collectivization* in Yakutia, stated:

> The percentage of collectivization for the past five years [1925–1929] throughout Yakutia ASSR is only 3.5 per cent. Such a miserly percent of collectivization for five years shows clearly that there was weak organizational and production support. Many collective farms exist merely on paper. The means of production are not placed in public control. (Nikolaeva, 1978, p. 26)

Figure 3.2. shows the "rate of collectivization" for Yakutia compared to Russia, as reported in an official account written in the late 1930s in Moscow. "The rate of collectiv-

ization" is the percentage of households collectivized as compared to all households. As Figure 3.3. shows, collectivization in Yakutia was completed only in the late 1930s. The Soviet government also compared the rate at which households were collectivized relative to the area of land that was collectivized. The percentage of actual acres of agricultural land was collectivized at a faster rate than the number of households collectivized, which meant that the Soviet officials must have collectivized the larger landowners first.

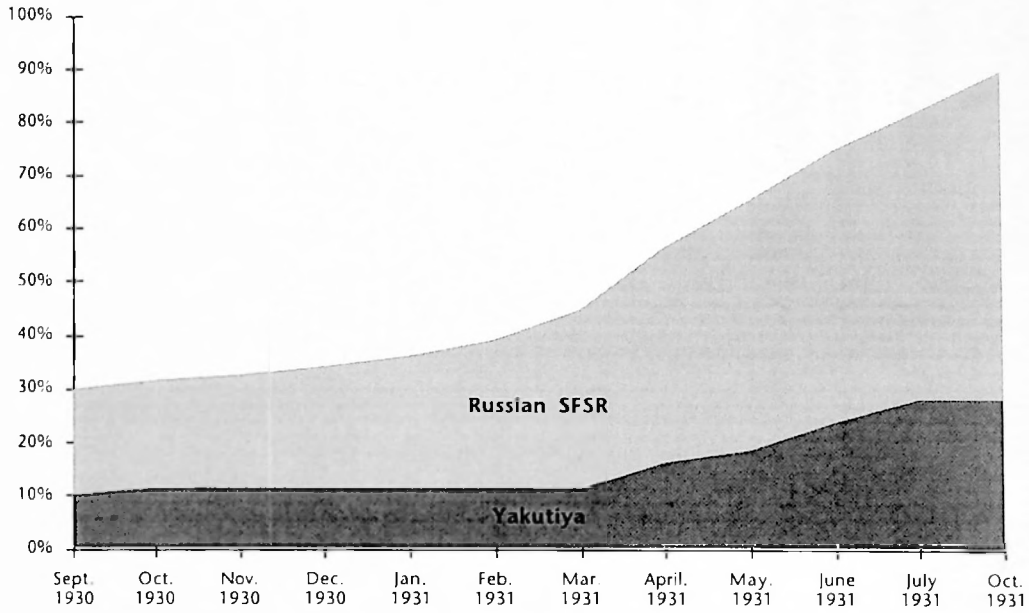


Figure 3.2. Rate of collectivization in Yakutia and Russia

The comparative rates of collectivization between land area and households is shown in Figure 3.3. It is still unclear exactly how collectivization was carried out on the ground, since the published official accounts of collectivization are primarily those written before *perestroika* and contain a strong pro-Soviet ideological filter. (Gogolev, 1972) It seems that Yakutia was not hit as hard in the 1920s and early 1930s by the brutality of collectivization that western Russia and the Ukraine experienced. (Gregory and Stuart, 1986, p. 111) This is primarily because the machine of collectivization was not able to reach Yakutia effectively. By 1940, the situation changed. The Soviet government reported that there were 900 collective farms in Yakutia, proof that the existing agricultural and traditional sector in Yakutia was finally overwhelmed by the Stalinist policy of collectivization (TsSU RSFSR, 1976, p. 35)

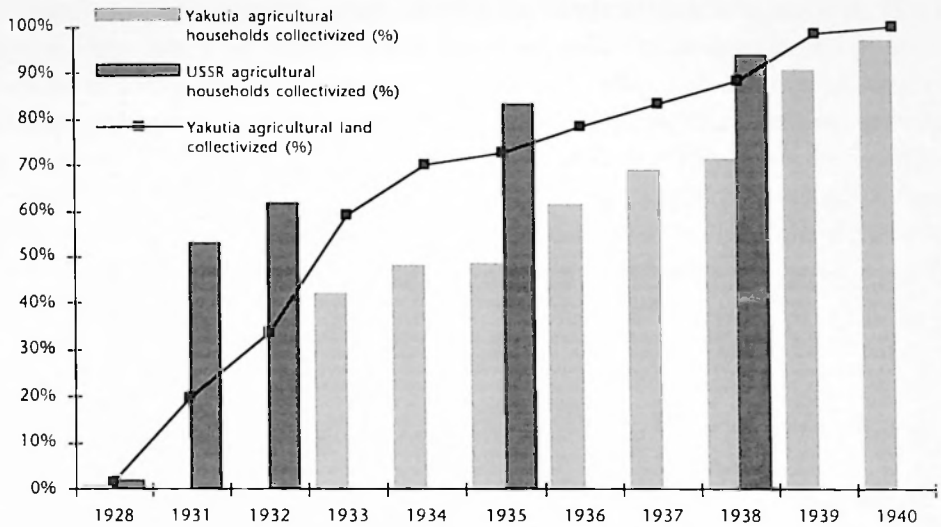


Figure 3.3. Percentage of household collectivized compared to percentage of land collectivized.

It is now generally recognized that collectivization left in its wake economic ruin for the Soviet agricultural sector. (Gregory and Stuart, 1986, p. 117) Yakutia did not suffer on the same scale the starvation and repression from collectivization that the western part of the Soviet Union did, but Yakutia experienced a decline in agricultural outputs, particularly in livestock. In general, collectivization and the Soviet system decreased the number of cattle, dairy cows and horses in the 1930s. The only exception to decreasing numbers of animals seems to be the number of reindeer in Yakutia. This may be explained by the fact that the reindeer herds were left in the care of the reindeer herders, since the Soviet government did not have the resources to reach the more remote areas during the biggest push for collectivization.

The failure of collectivization, the Second World War and the death of Stalin all contributed to the reorganization of most of the 900 plus collective farms as state farms.

Khrushchev's efforts, after the death of Stalin, were an attempt to liberalize the agricultural sector through a more decentralized system of regional economic councils.[15] This reformist movement lasted while Khrushchev was in power, but Brezhnev's takeover of the Soviet government centralized almost all agricultural activity through the Ministry of Agriculture. (Gregory and Stuart, 1986, pp. 137–138) In 1965, the number of agricultural units in Yakutia were consolidated into only 28 centralized state farms. This situation continued until the 1980s. In the 1980s, responsibility for the agricultural sector was again restructured. The number of state farms was increased by 1986 to 121 state farms. Throughout these restructuring initiatives, constant pressure was applied to "transform the life of the nomadic population to a settled lifestyle." (Aganbegyan, 1978, p. 371) After 1980, agriculture expanded and was also run by agricultural enterprises outside of the Ministry of Agriculture. Large industrial firms, construction organizations, and government ministries

set up agricultural enterprises to supply directly the needs of their own workers. This was related to a policy that most enterprises or industries were encouraged to be self-sufficient, if they could. In Sakha, between 1980 and 1985 these kinds of non-Ministry of Agriculture agricultural units ballooned from nine to about 200 (see Figure 3.4.). The most striking feature of structural change in the agricultural industry is the contraction of the 900 plus collective farms to less than a hundred units throughout the 1960s and 1970s, followed by the 1980s with a four to five-fold increase in the number of units. Throughout this whole process fishing collectives retained their organizational structure as collectives until the 1990s.

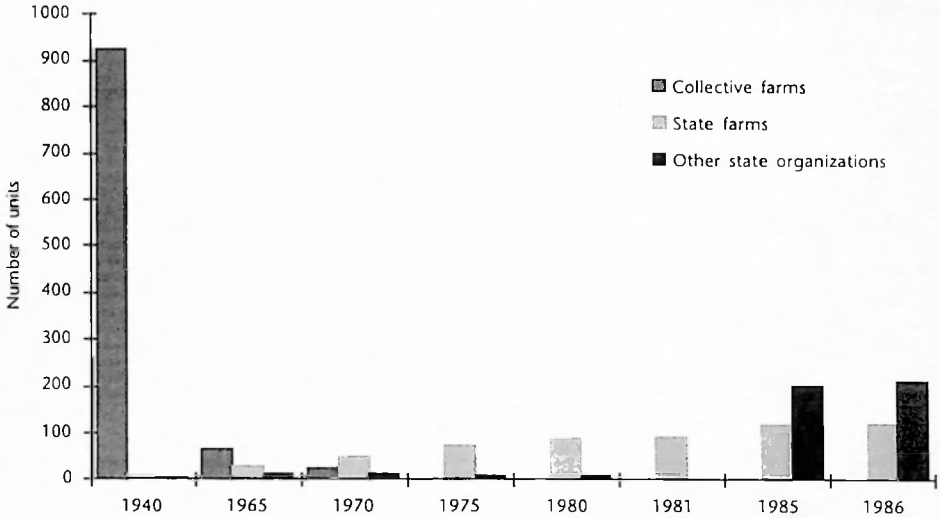


Figure 3.4. Number of agricultural units by types from 1940 to 1986.

Collectivization and the subsequent creation of the state farm system changed the face of rural Sakha and significantly altered the lives of the indigenous people. Collectivization took ownership away from the population and transferred it to the state. Reform in agriculture revolves around this basic issue. Agricultural policy was important to the rural economy, but it had little affect on the overall changes and growth of Yakutia's economy. The engine of change that brought people and economic development to Yakutia was gold.

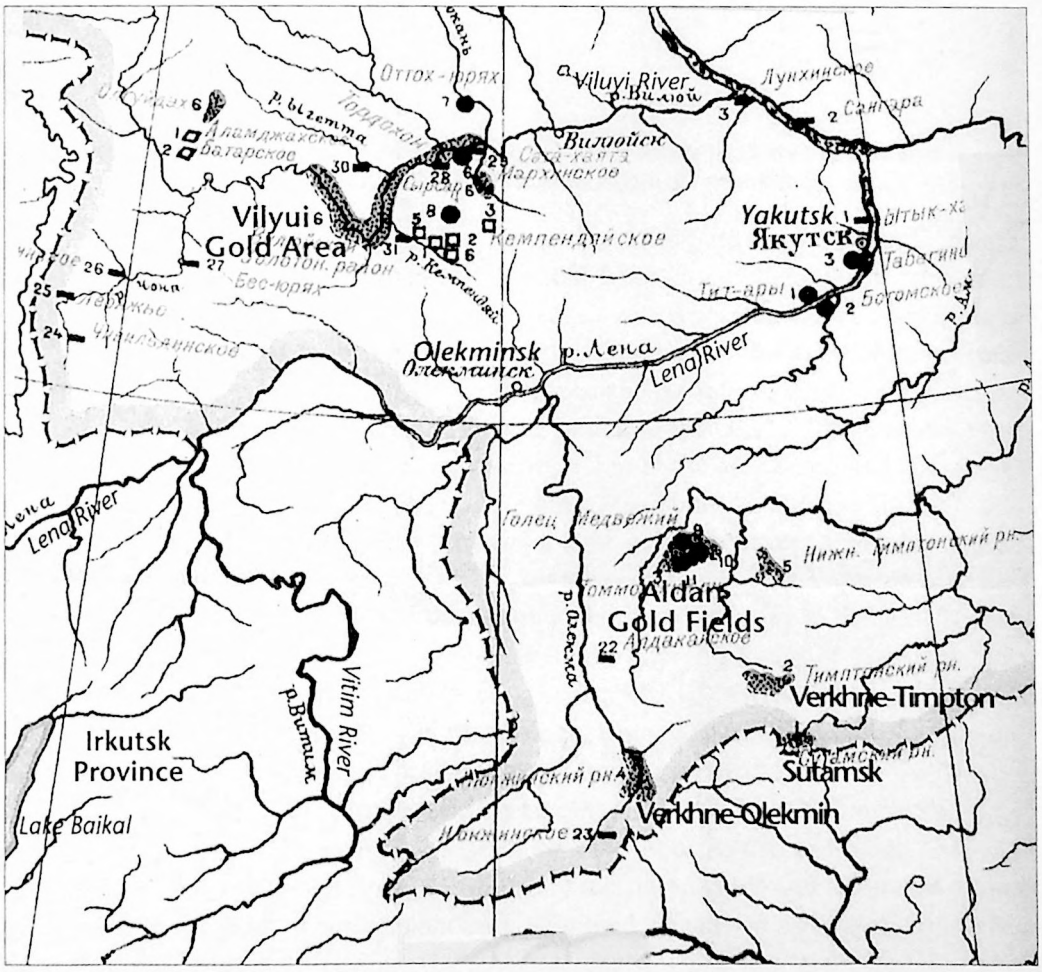
3.3. The Gold Economy

3.3.1 "... the only unorganized gold rush of Soviet times."

In 1923, the Yakutia government sent out a geological expedition lead by V.P. Bertinym. Bertinym and his crew discovered, "a Yakut hunter named M. Tarabukina and a group of Evenki mining for gold near the Nezametnyy spring." (Mityushkin, 1960, p. 105)

Nezametnyye (meaning "unnoticeable" in Russian) turned out to be a major placer gold site which brought thousands of independent gold prospectors (*starateli*). In the spring

of 1924, there were about 1,000 prospectors working the placer mining areas of the Aldan. By the summer of 1924 there were 3,000 prospectors, and in 1925 there were 13,000 people in the mining areas working as prospectors or in a support capacity. (Mityushkin, 1960, p. 105) At about the same time that Stalin unrolled his plans for Socialist industrialization at the Fourteenth (Soviet) Party Conference, the Aldan River area in southern Yakutia became the site of an all-out gold rush. (Mityushkin, 1960, p. 105; Kolesov and Potapov, 1937, pp. 126–127; Vasyutin, 1958, pp. 30–32) (see Map 3.1.) The Aldan gold rush brought thousands of prospectors and, as Michael Kaser notes, "it was the only unorganized ... [gold rush] of Soviet times." (Kaser, 1983, p. 569) Within four years, the Aldan gold rush produced almost twice as much gold as Yakutia had produced between 1840 and 1920 (see Figure 3.5.).



Map 3.1. Lena gold fields and the Aldan gold fields circa 1920s.

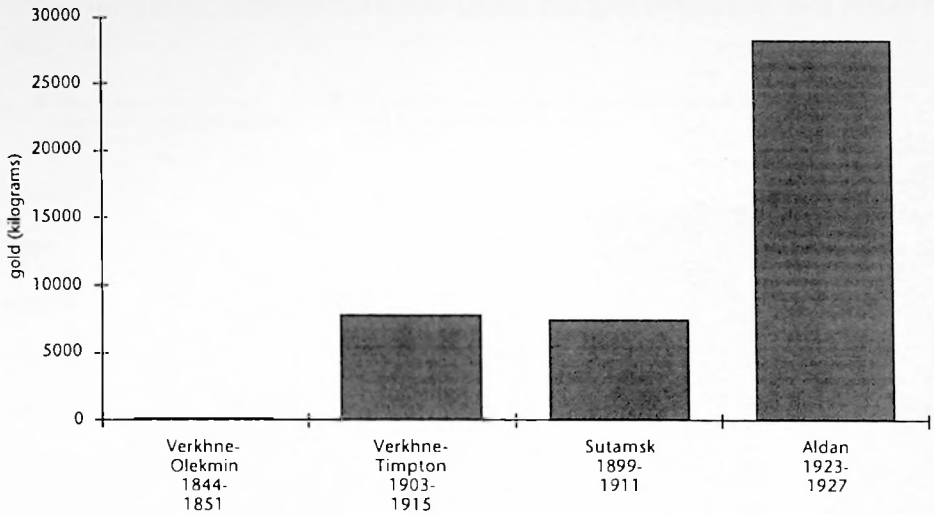


Figure 3.5. Comparison of gold production in Yakutia before the Russian Revolution and gold production for the first years of the Aldan goldrush.

The new Soviet Yakutia government set up the Yakut Gold Trust company, later renamed the Aldan Gold Trust, and then Union Gold Trust. In 1925, "according to a decree of the Soviet of Labor and Defense[16] ... [Aldangold] ... was reorganized as a trust of union [federal] significance ..." (Mityushkin, 1960, p. 105) The fact that the company now had "Union" significance, "... meant that all the cost incurred by Yakutia ASSR on organizing the gold industry, was compensated by the Government of the USSR," (Mityushkin, 1960, p. 105) and it also meant that the company's ownership of the gold fields was transferred to the USSR's Supreme Soviet of the People's Economy. Meanwhile in Moscow in 1927, the Soviets founded Union Gold Company, a national state gold stock company, which consolidated all government gold mining enterprises, regardless of previous ownership. The new national Union Gold Company owned the Union Gold Trust Company in Yakutia. The national Union Gold Company was itself owned by the Supreme Soviet of the People's Economy, People's Committee for Finance and the State Bank. (Serebrovskiy, 1936, p. 122)

In 1927, the Aldan subsidiary of the national Union Gold Company, called Union Gold Trust, reported 12.93 tons of gold production from 1925 to 1927, which the Trust acquired directly from its own prospectors, or bought from independent prospectors. (Obruchev, 1930, p. 17) (see Figure 3.6.) Other sources reported that the Aldan area produced, from 1923 to 1927, 23.47 tons of "officially registered gold" and another 4.64 tons of gold "going to the side," a euphemism for gold mined illegally or smuggled. (Obruchev, 1930, p. 17) (see Figure 3.7.) Overall, the Soviet geologist, Obruchev, estimated that almost 30 tons of gold were mined in Yakutia from 1923 to 1927, although he conceded that the large number of prospectors mining outside the government's control meant the figure could be considerably higher. (Obruchev, 1930, p. 17). After 1927, the gold production

statistics became a state secret for the Soviet Union and gold production data remained a secret until 1991.

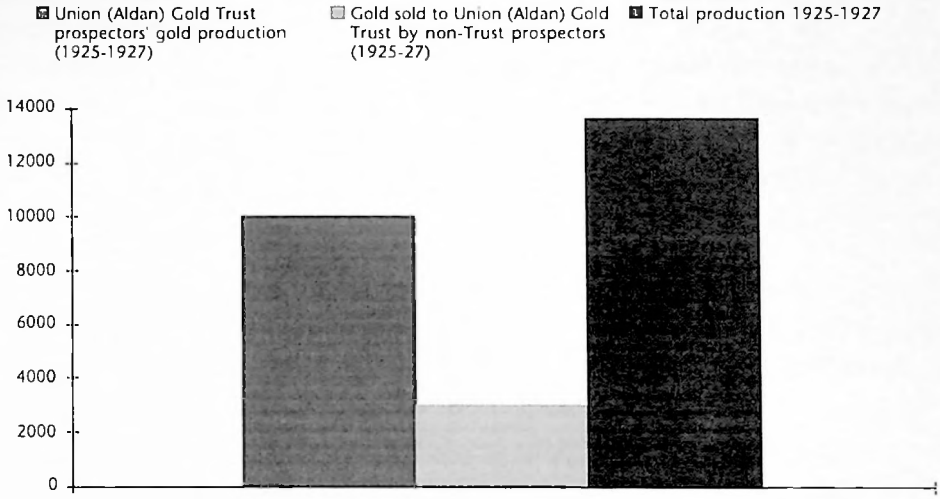


Figure 3.6. Gold production of the Union (Aldan) Gold Trust and gold sold to the Aldan Gold Trust by non-Trust prospectors compared to total gold production in the Aldan area.

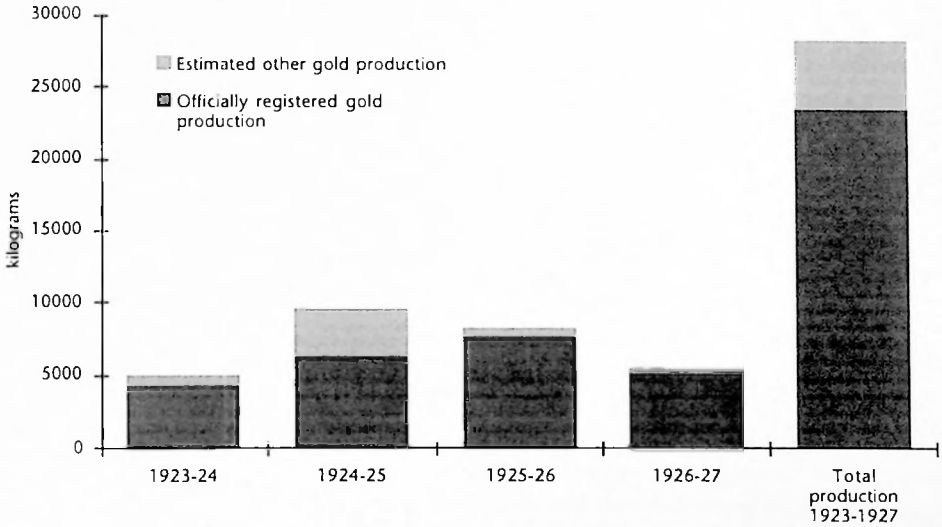


Figure 3.7. Gold production in the Aldan area 1923 to 1927.

3.3.1.1. Moscow

In the late 1920s and 1930s, the new Soviet government was struggling to purchase badly needed goods and equipment from the West. (Gregory and Stuart, 1986, p. 115) To

improve the balance of trade the Soviet government increased the export of gold and precious metals, reporting some of the official gold export (Lawton, 1934, p. 16), and exporting some gold unofficially. (Davies, 1996, p. 118) Much of the Russian gold came from gold stockpile, rather than gold production. (Davies, 1996, p. 119)

To compound matters, although the Soviets were increasing the volume of their traditional exports (oil, fur and timber) the drop in market prices for these items created less revenue for the Soviet treasury. (Davies, 1996, p. 118) For example, in 1931, "oil, fur and timber—all increased slightly in quantity, in spite of shortages at home ... But world prices continued to fall, and the receipts from timber declined from 34 to 30 million rubles. Oil and fur exports suffered a similar fate." (Davies, 1996, p. 118)

Gold production became a priority, a way to save the Soviet government from serious fiscal trouble, stemming primarily from the Soviet policy of collectivizing agriculture. Professor Davies, of Birmingham, describes the situation based on information from recently delassified Soviet state archives of the 1930s:

> In 1932 high priority continued to be afforded to the gold industry, which was beginning to provide a major means of financing exports. Gold production was planned at 69 tons in 1932, increasing [to] as much as 129 tons in 1933. To achieve this ambitious plan, capital equipment and labour were required, and food, shelter and elementary facilities had to be made available in remote areas in which almost nothing was produced. Sovnarkom [main Soviet economic committee] accordingly allocated 295 million rubles to investment in the gold industry ... (Davies, 1996, p. 163)

Stalin put Alexander Serebrovskiy, a petroleum engineer, in charge of the USSR's gold mining and ordered him to create a "Soviet" gold industry. (Serbrovskiy , 1936) In 1936, Serbrovskiy described a very definite reason why the Soviet Union placed a priority on the gold industry:

> The general flowering of our Soviet Union, including the increase in goods, the unfolding of trade, lowering of prices, and the growth in consumer demand all give us the ability to widely expand the gold mining industry, and to strengthen the Soviet currency, our Soviet ruble.
>
> We know how "hard" our currency is now and how our Soviet ruble increased in strength by 1935. In the strengthening of the Soviet ruble, in the victory of socialism in our country, the gold industry played a major role. Thanks to the gold industry, our government and our leaders relied on, and will continue to rely on, the growing currency resources in the form of precious metals. These precious metals are necessary for our country in settling accounts with foreign countries and for our country to purchase the latest equipment to further industrialize our country.
>
> Thanks to the gold industry and its success, our government is the best and most careful purchaser in the world. Thanks to the success of the gold industry in the country of the Soviets, naturally, a whole series of

> resources were freed and will be freed for betterment of the life of our flowering country. (Serebrovskiy, 1936, p. 421)

Serbrovskiy's attitude had been considerably more pessimistic in the late 1920s after visiting the mines and dealing with the Moscow bureaucracy. There were two chief obstacles in the way of taking over the existing gold mining industry and turning it to serve the Soviet state. First, the mining companies working in the field were largely oblivious of Moscow and its directives. The companies and trusts did not listen to Union Gold. More precisely, companies like Far East Gold Company, were basically independent and considered that Moscow should also "exist completely independent [of the regional mining companies]." (Serebrovskiy, 1936, p. 123)

Meanwhile, the Moscow bureaucrats in charge of the national Union Gold Company did not have any specific directive, except to supply the gold mines in the hinterlands and navigate between its stock holders, the Supreme Soviet of the People's Economy, on the one side, and the Committee of Finance and the State Bank, on the other. (Serebrovskiy, 1936, p. 124) The Supreme Soviet of the People's Economy did not always coordinate its activities with the Committee of Finance and the State Bank. The Supreme Soviet of the People's Economy lost its pre-eminence as chief controller of all Soviet industry and broke apart, in 1932, into three Ministries (the Heavy Industry Ministry, Light Industry Ministry and Woodworking Ministry). (Gregory and Stuart, 1986, p. 103)

While the rest of the Soviet Union was going through hard times, even in the bleakest hours of the 1930s, "in spite of the decline in supplies the allocation to exports doubled and the allocation to the commercial fund was fully maintained; and the military, the Far North, the gold and platinum industry and the foreign specialists were all afforded some protection." (Davies, 1996, p. 181) In the late 1920s, the gold mining industry received an open check book, which it enjoyed through the 1930s. After all, Comrade Stalin personally dealt with the gold industry in the 1920s and early 1930s and later transferred the responsibility of the industry to his most trusted minister, Ordzhonikidze, minister of Heavy Industry. Ordzhonikidze also paid the gold industry special attention. (Serebrovskiy, 1936, pp. 226, 315)

In the late 1920s, the bureaucrats of the new Soviet state were almost mindlessly throwing supplies and resources at the gold industry. No planning or budgeting was carried out. The government's highest priority was an increase in gold production.

Serebrovskiy describes the general atmosphere of the Moscow office of the gold ministry at the time of his takeover in 1927–28:

> At that time for Moscow, the main job was to supply the gold mines, and that was it. In Moscow orders would arrive, not checked by anyone, about supplies needed, where they were to be delivered, and the amount of materials and machinery needed. Why did the Far East Gold Company need these amounts of material? No one could answer. Why did Aldan Gold Company, recently formed, need so much produce and goods? Nobody could

> respond. If they [the gold companies] demanded, that meant it was sent, and that also meant it was necessary to procure and arrange delivery of these supplies. There was no other work, there was no leadership or oversight, and, needless to say, there was no planning. (Serebrovskiy, 1936, p. 124)

The supply system was extremely chaotic. For example, the more aggressive the local gold mining enterprise was in Moscow with its requests, the more goods and supplies it received. More "timid" enterprises were neglected. (Serebrovskiy, 1936, p. 124)

3.3.1.2. The Aldan

Serebrovskiy set off to the mining areas to "destroy the anarchism and inertia within the industry and create productive collectives, enterprises and working trusts ..." (Serebrovskiy, 1936, p. 163) For the chief of the Department of Gold Mining to get to the Aldan gold fields took several weeks. At the time, the trip from the Big Nera station on the Trans-Siberian Railroad, south of Yakutia, to the gold mines took about 20 days on horseback or foot in the winter and about a week by boat in the summer. (Serebrovskiy, 1936, p. 212) Later in the mid-1930s the journey was cut down to an 18 hour car drive from the railroad station after a decent automobile road was built. (Serebrovskiy, 1936, p. 213)

After Serebrovskiy, took his first trip to the Aldan in 1928 to review the organization of gold mining in Siberia, he went directly to Stalin to quit his job as head of the gold industry. Serebrovskiy summed up what he thought was a "... tangled and unknown industry, with people who do not recognize any order or any discipline, and who are anarchical, and individualistic ... It seemed like this was not industry but a home-made attempt with primitive knowledge, low technology and ignorant workers. (Sterzhkov, 1931, p. 126)

In the Aldan, the majority of the gold was mined by individual prospectors with a pick, shovel and sluice box. (Sterzhkov, 1931, p. 96) The central Soviet government was eager to get the thousands of individual prospectors under their control, but this took some time to achieve and the Soviet government did not fully exercise authority over the industry until well into the 1930s.

Stalin convinced Serebrovskiy not to give up on the gold industry, and freed up more money for its organization. Part of the national Union Gold Company's drive was to introduce the latest technology and methods for mineral exploration and mining. (Serebrovskiy, 1936, p. 173) This was an uphill battle against the prospector who preferred the old and trusted method of washing gold by hand. Serebrovskiy was set on bringing in technology. "We mobilize ... the powers of youth, because the youth and the [Communist] party members at the mines always fight for science, technology and mechanization." (Serebrovskiy, 1936, p. 173) Serebrovskiy brought machinery to the Aldan. For example, at the end of the 1920s, the Union Gold Trust brought in two old "New Zealand-type" dredges from the Lena gold fields. (Kolesov and Potapov, 1937) Steam-driven excavating equipment was also eventually acquired. (Serebrovskiy, 1936, p. 96) The National Union Gold Company hoped the use of technology would increase productivity and production.

For ideological reasons, later Soviet descriptions of the 1920s Aldan gold mining operation neglect to describe the more colorful details of how development was carried out. Instead, the initial Soviet development of Aldan was reinterpreted as another economic effort carried out exclusively under the banner of socialism and represented gold mining in the Soviet Union as markedly different from the gold rushes of Klondike and Nome (Alaska).[17] (e.g., Mityushkin, 1960, p. 104–108) Circa 1929, a young communist journalist from Leningrad named Sterzhkov, wrote a first hand account about the "Russian Klondike," which clearly showed that it took a long time for the communists to get control of a chaotic situation at the Aldan gold fields. (Sterzhkov, 1931) The "real" Aldan gold rush, in contrast to the later official reports, show that the gold rush under Soviet communism rivaled the wildness of Nome. (Sterzhkov, 1931, p. 30)

Union Gold Trust controlled most of the labor pool through a system of their own prospectors who were wage workers. There were also independent prospectors not connected to the Union Gold Trust. (Segal, 1936, p. 198) Technically, the independent prospectors and wage workers were required to deliver all the gold they mined to the financial inspectors of Union Gold Trust. Gold mined by the prospectors was bought by the Union Gold Trust at set prices, while Union Gold Trust wage workers were paid a salary and expenses in exchange for all the gold they found.

In practice, most prospectors did not deliver their gold to Union Gold Trust and most of the wage workers pocketed a part of the gold mined on Union Gold Trust sites, or illegally mined gold in their off hours. (Sterzhkov, 1931, p. 117) Union Gold Trust, together with the GPU (*Glavnoye Politicheskoye Upravleniye*), one of the KGB's 1920s incarnations, could neither stop the prospectors and workers from taking the gold nor get them to hand over the gold to the company inspectors. In Sterzhkov's own words:

> In the quest for the 'long ruble,' or 'to get rich quick,' the prospector and the worker go out on the gold fields and steal gold. In the gold fields, a tradition arose where stealing gold is not considered a crime. The prospectors never say 'steal gold.' They say 'pocket' (*shirovat*). For the prospector, taking money or gold from a bank is stealing, but taking gold, the wealth of the government, during mining is not theft, but merely 'pocketing.' (Sterzhkov, 1931, p. 117)

The government came up with all kinds of wage and tax incentives (1926–1927) to convince prospectors to deliver gold nuggets and hand over discovered placer gold mines to the government. (Serebrovskiy, 1936, p. 63) In part, the laws worked and production of gold increased within the USSR. The laws gave the local companies a relatively wide menu of incentives, including capitalist-styled monetary incentives, to motivate prospectors to give up the gold to the government. Legislation was put in place, known as the "golden laws," which gave substantial perks to prospectors and specialists. (Serebrovskiy, 1936, p. 122)

In the Aldan, the majority of wage workers and prospectors were Russian, but, interestingly, there were many migrant laborers from China and Korea.[18] Mining, drinking,

card playing, fighting and an occasional murder were certainly the order of the day. (Sterzhkov, 1931, p. 30)

> Everyone plays cards, everyday. They say everyone drinks. In any case, the vast, huge, ever-present majority drinks. (Sterzhkov, 1931, p. 107)

While alcohol was prohibited in 1927 from the rest of Yakutia, Aldan's gold mines were exempt from this law. (Sterzhkov, 1931, p. 30) In fact, Union Gold Company, as a communist trust company, legislated itself monopoly rights selling grain alcohol. (Sterzhkov, 1931, p. 107) In 1928, the Union Gold Trust sold 48,000 liters of grain alcohol. (Sterzhkov, 1931, p. 107)

In the same year, Sterzhkov estimated that 20 per cent of the prospectors' wages were spent on liquor. (Sterzhkov, 1931, p. 107) The Russian miners were the chief market for alcohol, as the Chinese and Koreans were known for their relative temperance, "... [o]n Sundays, the Chinese play cards, the Koreans read Korean or Russian books, sing and mend their clothes, and the Russian prospectors drink to a stupor (*napivatsya do zelenogo zmeya*[19])." (Sterzhkov, 1931, p. 52)

The situation with drinking was considered serious by the trade unions and communist party members who protested that Union Gold Trust sold alcohol. The leadership of Union Gold Trust replied pragmatically, "[t]he prospectors will drink anyway, but they will drink the more expensive contraband liquor." (Sterzhkov, 1931, p. 107)

The widespread pocketing of gold by wage workers and independent prospectors hurt Union Gold Trust's efforts to fulfill the badly lagging gold quota that was promised to Moscow. Market forces helped the management of Union Gold Trust to solve their problem. First, Union Gold Trust began to sell goods at their stores, the largest and best supply points in the area, exclusively for gold dust and gold nuggets. (Littlepage, 1938) Second, Union Gold sold their monopoly grain alcohol exclusively for gold nuggets. (Sterzhkov, 1931) These two methods fulfilled the state company's gold quota within a short time. (see Figure 3.6., p. 58) The methods of the Union Gold managers were radically different from the government grain collectors of western Soviet Union, who, during precisely the same period, resorted to killing and intimidating millions of peasant farmers. Figure 3.6. shows the volume of gold bought by the Union Gold Trust in the Aldan from non-Trust prospectors and the total production of gold.

The Soviet State Bank also used non-coercive methods and simply bought gold "no questions asked:"

> One time two workers came to the State Bank in Nezametnyy. One of them took out a rag from the waist-band of his pants, opened it and handed the bank cashier a 3½ kilogram nugget. The cashier weighed it, and without saying a word, paid out 4,500 rubles [14 times the average Union Gold wage worker's monthly salary]. For an entire week, the two workers were drunk and forced every passer-by in the street to drink with them. (Sterzhkov, 1931, p. 30)

While Moscow blindly shipped supplies to the gold mining operations, there was no guarantee that the goods would ever get to the mines. In the early days, the Union Gold Trust's management demonstrated a legendary incompetence in their attempt to redirect the gold rush from a conglomeration of private entrepreneurship into a unified socialist industry.

For example, in the winter of 1927, hungry prospectors in the gold fields were sent, mistakenly by Union Gold Trust's sledge operation several tons of boat nails instead of the greatly needed supply of flour and butter. (Sterzhkov, 1931, p. 96) Union Gold Trust also set up a camel (the desert beast) caravan, using 500 camels that they bought, "for a very low price," to deliver goods in the winter. (Sterzhkov, 1931, p. 99) One of the caravan drivers explained the efficiency of the camels:

> You understand, that a camel is, on its own, an unwieldy beast, and here we use it with a sledge. The camel gets itself stuck between two trees [with a sledge], and cannot go forward or backward. The camel stands and brays. You can not turn it around. We suffered before we got here [Nezametnyy gold fields]. After a while, we just chopped trees down [with an ax] to make a road. The [trip included] frost, taiga, lack of hay, and the hungry and angry camels. (Sterzhkov, 1931, p. 99)

Stalin's development plan for the Russian Far East and the gold mining industry in the 1920s and 1930s was an attempt to copy the California Gold Rush of 1849. Littlepage, an American mining engineer from Alaska who was hired by the Soviet government to organize the Soviet gold industry in the 1920s and 1930s, gave an explanation of the intended development process of gold regions:

> ... Stalin's imagination was fired by reading about the California Gold Rush of 1849. He was fascinated to observe how rapidly the western regions of the United States had been filled up after gold was discovered in California, and saw that the process had been accomplished by the incentive of getting rich quick.
>
> We can imagine Stalin's predicament as a Communist. The desire to get rich in a hurry is decidedly individualist and capitalist; it hardly seemed proper for a socialist government to encourage it ...
>
> On the other hand, here was a huge region, sparsely settled and therefore all the more vulnerable to attack, which might be filled up with abnormal rapidity, as the western regions of the United States had been after 1849, if only a gold rush were started. And Stalin knew that there was plenty of gold lying about in the Soviet Far East, almost completely neglected by its theoretical owner, the Soviet Government. (Littlepage, 1938, p. 27)

Serebrovskiy gives an equally clear picture of how Stalin intended that the development of the Russian East should emulate the American West:

> Talking about California, Comrade Stalin turned my attention to the fact that from the very beginning the placer mines of northern California were developed by prospectors, the way Bret Harte [the American writer] wrote

> about them in detail. The prospectors need to play a large role with us as well. After the prospectors, capital begins to follow, not just small capital, in the form of united prospectors, but big capital in the form of bank capital creating big enterprises of the capitalist type, stock companies, mines and so on, pushing out the prospectors. All this is reflected in Bret Harte. Bret Harte had little understanding about the historical function of capital, but showed clearly that around gold mining and the gold industry grew the shops, the factories, enterprises, that roads were built, transport created, firms, offices, banks, and whole towns were constructed. So that in 10–15 years San Francisco grew from a small bay, with a small Spanish mission, into a large port city. (Serebrovskiy, 1936, p. 17)

Aldan became one of the chief gold producing regions of the USSR in the 1920s and 1930s. In 1935, the Aldan gold fields were in first place in fulfilling their production quotas for the second year in a row. (Serebrovskiy, 1936, p. 316) In 1936, the Yakut Republic was recognized as the leading producer of gold. (Serebrovskiy, 1936, p. 316)

The Aldan was also a training area for Soviet mining specialists. For example, the geologists, Yuri Bilibin and Valintin Tsaregradskiy, who cut their teeth prospecting in the Aldan gold fields would later open up the Kolyma gold mining area (Magadan), which became the leading gold producer in the 1940s. (Tichotsky, 1993, p. 21)

3.2.2. Gold mines and gulags

Eventually, the Soviet state did transform the nature of the "wild" Aldan gold fields, for the worse. In the 1930s and 1940s, most of the independent prospectors disappeared and were replaced by hundreds of thousands of prisoners, arrested under Stalin's reign. These prisoners became the labor force used to exploit the mineral and timber resources of Yakutia and other regions in the Russian North and the Russian Far East. Within several years, all the gold mining in Sakha and the Russian Far East was carried out by tens of thousands of prisoners within a system of gulags (work camps).

From about the mid-1930s (the Magadan gulags were established in 1932–33), until the death of Stalin in 1953, the gold-producing areas of the Russian Far East became a factory of death, an element of the frenzy associated with "... the harsh purges and prefabricated Moscow trials of 1936, 1937, and 1938 which constituted a massacre, unprecedented in world annals, of brains and talent ..." (Fischer, 1953, p. 134)

Toward the end of the 1930s, during the reign of Yezhov at the helm of the NKVD (precursor to the KGB) and during the purge trials, there were more and more elements of society politically dangerous to the Soviet regime who were sent to work in the mines. (Tichotsky, 1993, pp. 106–107) Death within the gulags, which were located in some of the most extreme winter environments in the world, came by exposure, starvation, and disease. Camp commanders shot prisoners to instill discipline and provide incentives for increased productivity.

The official number of prisoners and deaths in the Northeast during Stalin's reign is still not tabulated. No complete set of official records has been released. It would not be unreasonable to estimate that from 1931 to 1954 several hundreds of thousands died, representing about 80 to 90 per cent of the total prisoners sent to the Far East. (Atlis, 1991, personal communication) For comparison, Yakutia's official population for the entire Republic was about 414,000 people in 1939.

Much of the territory within the borders of the northeast section of Yakutia (today part of Magadan), was developed and run by the infamous *Dalstroi* "super organization."[20] (Pilyasov, 1994) *Dalstroi* was an all-purpose management agency that combined the functions of industry and government with the operation of a massive KGB labor camp and controlled all its Kolyma gold and tin mining operations out of the port of Magadan. The southern part of Yakutia was developed by the Yakutia ASSR government. In southern Yakutia, the gulags had a system of administration parallel to the administration of the Soviet republic government. In addition to gold mining, southern Sakha gulag prisoners logged timber. Woman prisoners were usually sent to the timber gulags.

Generally, there were not enough prisoners for running the mines, and many "freely hired" workers were also recruited in Moscow, Vladivostok and other cities. (Kozlov, 1991, p. 66) The free wage laborers worked as miners, side by side with the prisoners. The wage laborers received relatively high salaries and often freed prisoners would stay on as wage laborers.

After Stalin's death came the end of the forced labor camps. Under Khrushchev several years of disorganization resulted in a rapid drop in resource production. Eventually, the Soviet government began to pump more money and effort into the gold mining industry. Under Khrushchev and Brezhnev, to provide a labor force for the gold mining areas and to compensate for the greatly decreased use of prison labor, workers in Yakutia received wages two to three times greater than workers in western areas of the Soviet Union. (Gregory and Stuart, 1986, pp. 230-231)

The Soviet government also focused on mechanizing the mining fields. (Tichotsky, 1993, p. 106-107) Mechanization, coupled with an incentive-motivated workforce helped the industry match its previous levels of production based on prison labor until the mid-1970s.

There is no specific information available on gold mining after the death of Stalin (March, 1953). In fact, the entire period from the early 1930s to 1991 provides very little specific information on gold mining and trying to reconstruct the production trends of the industry is extremely difficult. The exact figures of volume of gold are not available. Relative figures for gold mined and sand washed (to extract gold) for 1928 to 1932 and a general trend of mining intensity for 1928 to 1959 is the only information available. (see Figure 3.8.)

The figures from the 1920s and 1930s show the increasing efforts of the Aldan gold rush. The figures in the 1950s show rising gold production accompanied by a decreasing number of workers, and increasing level of mechanization. The entire trend in the 1950s also led to decreasing costs, at least as measured by Soviet statisticians. It should be noted

that the figures given by the Soviet statisticians are relative to a certain base year. The figures for the 1920s and 1930s are unrelated to the figures in the 1950s. What is significant is the trends in gold production between the two periods. One trend is variable, while the other shows a steady increase in production.

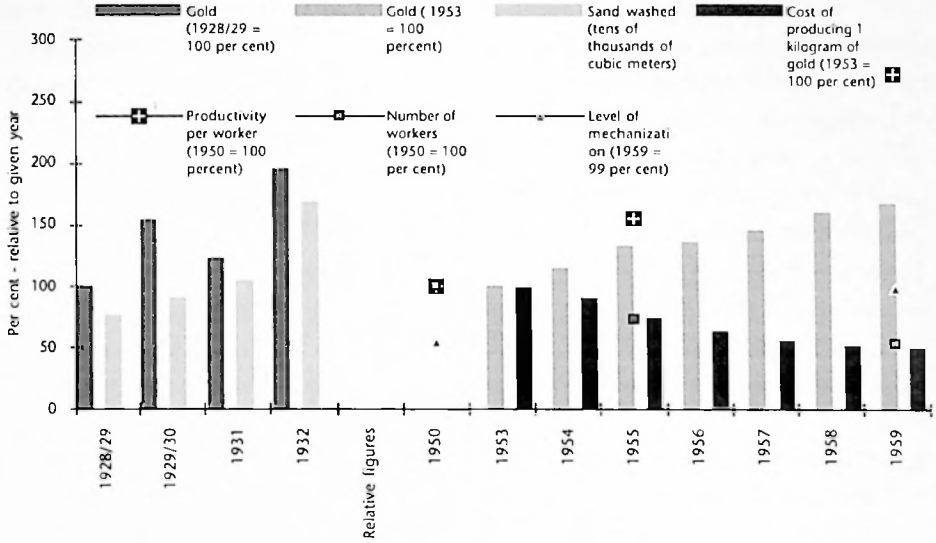


Figure 3.8. Known information about gold mining 1928 to 1959.

Official Soviet large scale gold sales stopped late in the 1930s, but after the death of Stalin gold sales resumed on the world market. Between 1953 and 1990 the Soviet government put more than 4,500 tons of gold on sale.[21] Yakutia remained one of the USSR's major gold producers. With the development of Yakutia's gold industry, it was recognized that the development of other industries also followed. In the 1950s, a series of industries connected to the gold industry evolved. The Russian economic historian Vasyutin noted in the late 1950s that:

> The gold industry greatly influenced the development of other mining industries in the region. The discovery and development of mica deposits were tied to the search for gold. The development of the gold industry and the related construction of roads helped the emergence of the forestry industry, the construction materials industry and the development of agriculture in the Aldan region ... As a result of industrialization, the formerly uninhabited Aldan turned into an important economic region in the Northeast of the Soviet Union. (Vasyutin, 1958, p. 32)

At the same time as the gold industry led to the rise of other industries, it eventually diminished in its importance to Yakutia. The gold mining industry became more and more bureaucratized and its volume of production fell after a peak in the early 1970s.

One attempt to save the decline in gold production that worked until the fall of the Soviet Union, was an introduction of mining "*artels*," a reincarnation of the independent prospectors. The *artels* became more and more important as the state-run operations rapidly became more inefficient in the face of more difficult mining conditions. All of the easy placer sites were exhausted and the general organization stagnated.

The Communist Party Central Committee tried to fight the growing privatization of the Soviet gold mining industry by ordering the state companies to rely less on the *artels* and even passed a decree on 22 July 1980 entitled, *Serious violations in the organization of gold and other metal mining related with the use of prospecting artels in the firms of the Ministry of Non-ferrous Metallurgy of the USSR*. (Malenkov, 1980, p.1–4) The central government also insisted that the companies fulfill high gold and tin production quotas. (Tichotsky, 1993, pp. 40–41) The state gold mining companies faced contradictory orders. To maintain gold and tin production the state company ignored the Communist Party and continued to rely on *artels* to maintain production. (Malenkov, 1980, pp. 1–4) By the 1990s, the gold mining companies were subcontracting much of their work to *artels* and similar private and quasi-private groups.

By the late 1970s, the influence of the gold industry on the Sakha economy eventually waned. In addition to decreasing production, the gold industry was eclipsed, by the new, more valuable and cost effective diamond mining industry.

3.4. Soviet Diamond Mining: A Stealth Export Economy

The origin of a diamond industry began while Stalin was still alive, but the implementation of the diamond industry in Yakutia developed in the wake of Stalin's death. The organization for the industry took a significantly different form, compared to the previous development of extractive industries in Yakutia. The foundation of the diamond industry stands in stark contrast to the gold mining, where the actual gold mines doubled as KGB prison camps. The diamond industry was planned and executed by engineers, economists, communist bureaucrats, young communist enthusiasts, and post-Stalinist fortune hunters and adventurers. The XX Congress of the Communist Party of the Soviet Union, where Khrushchev made his famous secret speech debunking Stalin, officially called for the creation of a diamond industry in Yakutia based on diamond discoveries made in the early 1950s. (Vvedensky, 1959, p. 17)

Diamonds are the hardest natural substance. Diamonds are used either as jewels if they are large enough and of sufficient quality, or for a variety of industrial uses. Industrial diamonds are used by many basic industries that require cutting, grinding or tooling any material (metals, glass, plastics). (Yanovskiy, 1965, pp. 12–14) Industrial diamonds also have important military and industrial applications that include drilling metals, stamping precision metal parts, drawing fine wires in electronics, jeweled bearings for guidance systems and gyroscopes. (Kempton and Levine, 1995, p. 87, Kirby, 1974, pp. 176–181; Yanovskiy, 1965, pp. 12–14)

The effort to start the Soviet diamond industry was accelerated by the US-led 1950 embargo of industrial diamonds to the Soviet Bloc. (Kempton and Levine, 1995, p. 87; Kirby, 1974, p. 4; Yanovskiy, 1965, p. 11) Soviet experts pushed the USSR to produce industrial diamonds domestically:

> The world production and sale of diamonds is monopolized by England, which forces the dependency of other countries and sets very high prices for diamonds on the world market. This is the reason for the importance and speed that our country [Soviet Union] needs to deal with this issue, not having significant deposits of diamonds until this time. (Korzhuev, 1965, p. 409)

The entire Soviet bloc was affected by the West's embargo on industrial diamonds. The Soviets made important technological breakthroughs to create synthetic industrial diamonds, but synthetic diamond production was extremely expensive relative to the prospect of developing deposits of industrial natural diamonds. (Kirby, 1974, pp. 7, 133)

Natural diamonds in Sakha are found primarily in kimberlite[22] deposits, and to a lesser extent in alluvial placer[23] deposits. The first diamonds found in Sakha were the 1949 discovery of placer diamonds in the western part of the Yakut ASSR.[24] In 1953, commercial quantities of placer diamonds were found in the western part of Sakha. (Korzhuev, 1965, p. 19) In 1954, a woman geologist named Larisa Popugaeva found the first kimberlite pipe, which she named Dawning.[25] (Korzhuev, 1965, p. 19; Burov, 1973, p. 13) The following season, Yuri Khabardin found the *Mir* (Peace) kimberlite pipe, a commercially viable deposit of quality gemstone diamonds. (Lykhin, 1994, p. 6)[26]

In 1956, the XX Party Congress of the Soviet Union ordered "that preparatory work be carried out in creating a diamond industry in the Yakut ASSR." (Argunov and Rybakovskiy, 1973, p. 66) In 1957, the XXI Party Congress created the Yakutalmaz[27] Trust which began commercial production at the Mirnyy kimberlite pipe (Granik and Naumov, 1959). From 1956 and throughout the 1960s, tens of thousands of people from other areas of the USSR came to Yakutia to work in the diamond industry and its associated industries. (Granik and Naumov, 1959) Mirnyy became the main industrial town, built right on the edge of the Mirnyy mine, and Lensk (formally Mukhtuya) became the chief staging area for supplies. Another diamond bearing kimberlite pipe (*Aikhal*) was discovered in 1960[28] and went into commercial production of diamonds in 1961. (Argunov and Rybakovskiy, 1973, p. 85-87)

The villages of Aikhal, Udachnyy, and Irelyakh were built in remote areas that had few transportation networks in the 1960s. The problem of supplying this area with electrical power received the quintessential Soviet solution with the construction of the Vilyui hydropower station, completed in 1967. (Ovchinikova, 1973, p. 7)

The natural gas fields around Mirnyy were developed, transport links were constructed, agricultural state farms were enlarged and three new state farms were set up (Granik and Naumov, 1959). The Soviet history books boast that in 1957, the first four-

story house went up in Mirnyy (Argunov and Rybakovskiy, 1973, p. 161) and that a year later five and nine story Soviet-style concrete block houses were completed in Mirnyy. (Argunov and Rybakovskiy, 1973, p. 167) Although the town of Mirnyy was supposed to be a "planned city," in reality it was a product of temporary and hit-or-miss construction. (Kirby, 1974, p. 95)

Underlying all the propaganda proclaiming the creation of another socialist industry, the development of the diamond industry also had a "seamy side; [and] discontent, recalcitrance and overt resistance were not merely justified by the conditions, they broke publicly into utterance and into action." (Kirby, 1974, p. 91)

The first headquarters of the Diamond Trust in Mirnyy was burned to the ground by arsonists. (Kirby, 1974, p.91) The managers, who set up the diamond mining operations and controlled the difficult diamond miners, were known by the local people as the "diamond kings," since the government turned a blind eye to the way they bypassed the regular chain of command as long as diamonds were produced. (Kirby, 1974, p. 95)

During the first year of operation diamond miners went on strike over pay and organized a "sleep-in." (Kirby, 1974, p. 100) The diamond miners posted signs in their dormitory that they would not budge from bed for less than 150 rubles a month. (Kirby, 1974, p. 100) The managers broke the strike by calling on all the local members of the Communist Party Council and ordinary communists to act as strike-breakers. (Kirby, 1974, p. 100) There were apparently enough strike breakers to mine diamonds to convince the striking workers to abandon their strike on the same day. (Kirby, 1974, p. 100)

At the end of the 1950s, industrial diamonds were an important part of the growing global steel industry. The diamond market was rapidly developing. At the time, the US, unable to produce mass quantities of artificial diamonds, imported 15 million carats of natural industrial diamonds a year, mostly from South Africa. In 1959, it was estimated that the USSR needed at least 6 million carats for its own steel industry. As part of the Cold War, the US blocked Soviet purchases of industrial diamonds on the world market with a world boycott. The efforts in preparing the diamond mines in Yakutia paid off for the Soviets and within a short period of time Soviet production of low quality industrial diamonds satisfied the entire demand within the Soviet Union and "the socialist camp" for steel-cutting abrasives. (Yanovskiy, 1965, p. 14)

The Soviet economists recognized, in the 1960s, that mining diamonds in Yakutia demanded a great deal of capital investment and involved a great deal of working capital. The Soviet experts realized that the potential sales revenue from gem diamonds was an added benefit to mining industrial diamonds and made the activity extremely important to the national economy. The sale of gem diamonds provided significant revenues, but its role seemed to be downplayed for ideological reasons. The production of luxury goods was inconsistent with building socialism. Almost as an afterthought, the economist Yanovskiy, after five pages of text on the various uses of technical diamonds, adds this final sentence to the main chapter of his book about the diamond industry:

> The development of the diamond industry in Yakutia helps widen the export capabilities of the USSR, which indicates a high hard-currency efficiency of this industry. (Yanovskiy, 1965, p. 15)

It was clear to the Soviets that the size and value of the gem-diamond resource was extremely large. It was also clear that gem diamonds translated directly into much valued hard currency.

In the early 1970s, estimates of Soviet diamond production were between 10.5 and 12 million carats, of which between 22.5 and 77.5 per cent were gemstone quality. (Kirby, 1974, p. 109) Westerners in the early 1970s evaluated the Soviet mining industry with a mixed skepticism:

> Recent information reaching the [International Diamond] Annual is that Russian economists have after a prolonged struggle, finally convinced the Soviet authorities that cost-accounting even in the socialist state (or, perhaps, especially in the socialist state) must bring in capital interest factors. It is, therefore, suggested that diamonds in Siberia are being produced regardless of cost and a more realistic basis for assessing the viability of Siberian diamond production is gradually being introduced. At the same time, the importance of diamond production for earning much-needed foreign exchange is another factor which close observers of the Soviet economy think would keep Siberian production within the limits that arise from the market capacity of the Western world. (Wilson, 1972, p. 80)

In the 1970s, Sovietologists were unclear about what happened to the gem diamonds and speculated that there was a growing market for gem diamonds within Russia, citing examples such as "... there is a boutique for diamond rings in GUM, the large departmental store in Moscow."[29] (Kirby, 1974, p. 109)

In reality, the majority of the Soviet Union's diamonds were not for internal consumption but were exported as rough diamonds (uncut or unpolished diamonds). The diamonds were exported through secret channels to the Western cartel, controlled by a South African company, De Beers (see Chapter 6). Communists from the Soviet Union colluded with the capitalists of South Africa with the expressed interest of selling rough diamonds. Mr. Nicholas Oppenheimer, the current deputy chairman of De Beers, reminiscing about the history of how the USSR was brought into De Beers' fold, shows the extent ideology was put to one side:

> Looking back, it is a matter of not inconsiderable pride to De Beers and in particular to my family that, only four years after the discovery of diamonds in Russia in 1954 my cousin, Sir Phillip Oppenheimer [the number two man in De Beers at the time], was in Russia at Russia's invitation, concluding the first agreement under which Russia marketed its diamond production through the Central Selling Organization (CSO) and thus 37 years ago became a respected member of that special club of producers. Of course, as we all know, the political situation at the time, in South Africa and in the

> then Soviet Union, meant that its membership of that club had perforce for a long time to appear semi-detached and, although widely known, could not be generally acknowledged. (Reuters, 1995, June 20)

In 1957, the chairman of De Beers, Harry Oppenheimer, secretly went to the Soviet Union, "to insure the preeminence of the diamond cartel, and succeeded in convincing the Soviet government to sell the Yakutian diamonds exclusively through the De Beers Central Selling Organization [CSO]." (*The Economist*, 1994, 17 September) After formal diplomatic relations between South Africa and the Soviet Union were broken, the De Beers-USSR union remained unhindered. Soviet diamonds continued to be sold secretly. An anonymous company, City East-West Limited, that still exists, was expressly set up to move diamonds from the USSR to the De Beers diamond selling organization. (Kempton and Levine, 1995) In 1971, estimates were made that about 2.7 million carats were exported to Western markets and that $55 million, $90 million and $155 million worth of diamonds were exported from the USSR to UK in 1967, 1968 and 1969, respectively. These amounts are equal to $210 million, $325 million, $535 million in 1992 dollars. (deflators from The US Bureau of Economic Analysis (Bureau of Economic Analysis, 1996))

With a new and viable source of hard currency available, it is understandable why the XXIII Congress of the Communist Party of the Soviet Union (CPSU) in their 1966–1970 plan proclaimed,

> To provide for the future increase of production ... of diamonds, there is to begin new development of natural diamonds in the Yakut ASSR. (Argunov and Rybakovskiy, 1973, p. 156)

The costs were admittedly high, but the resource gave a highly profitable return. As the Soviet economist Yanovskiy notes:

> It should be noted that even though diamond development demands a considerable capital investment, there is an easy return on the investment because of the difference in the costs and list price [of diamonds]. This does not include the unique high efficiency in mining diamonds—each carat that is used in industry adds 2 to 12 times [Yanovskiy seems to be referring to some sort of economic multiplier effect] to the price over the list price of diamonds. Diamonds have an extremely high efficiency in acquiring hard currency.
>
> The discovery of the Yakutia deposits and their industrial development is extremely important to the national economy of the nation and in assisting in strengthening its industrial potential. (Yanovskiy, 1965, p. 63)

In other words, the high costs are justified by what seem to be a very high return on investment. Diamond mining solved a major internal shortage of a needed technical good with the bonus of hard-currency earnings from diamonds sales.

During the 1970s, the De Beers cartel was overwhelmed by Soviet-produced diamonds that were small, but of fine color. De Beers introduced a diamond "eternity ring" with many fine small diamonds and a slogan aimed at middle-aged married couples—"a

band of diamonds that says you'd marry her all over again." (*The Economist*, 1987, 10 January) De Beers marketed the ring in the US. The irony was that during the height of the Cold War, middle-aged, middle-income American men bought their wives Soviet diamonds to demonstrate enduring affection. (Kempton and Levine, 1995, p. 88) In the 1970s, the Soviets restated that "[a] factor of major economic importance has been the discovery of an extensive diamond province [sic] in the Yakut SSR. (Pokshishevskiy, 1974, p. 242) For the 1971–1975 central plan, the XXIV Congress of the CPSU wrote in their directives: "Considerably increase ... the mining of natural diamonds." (Argunov and Rybakovskiy, 1973, p. 177)

Until 1989, the Yakut diamond industry continued to increase production and the Soviet Union continued to sell diamonds to the West. During this period, Soviet production and export of diamonds was under the strict control of the Central Committee of the Communist Party of the Soviet Union. (Makarchev, 1995, p. 1) In 1988, Gorbachev broke up the Ministry of Non-ferrous Metallurgy and grouped gold and diamond mining under the direction of the Administration of Diamonds and Gold (Glavalmazzoloto—*Glavnoye Upravleniye Almazov i Zolota*). From 1980 to 1990, high oil and gold prices provided greater than anticipated foreign exchange earnings and gave the Soviet government the opportunity to stockpile a large portion of its diamond production. (Miller, 1995, p. 25) In 1990, the Soviet Union signed a widely publicized five-year agreement with De Beers to market diamonds. The same year De Beers lent the Soviet Union $1 billion, secured by diamonds from Soviet stockpiles. (Miller, 1995, p. 25; Ogilvie-Thompson, 1995, p. 5) The secure relationship between the Soviet diamond industry and De Beers lasted a little more than a year. Russia, after the collapse of the Soviet Union, became a much more fickle partner.

3.5. Sakha's Development Past

Understanding past development in the Republic of Sakha and the Russian North is important now that it is possible to implement structural change following the collapse of the Soviet Union. The Republic of Sakha can determine, to a certain extent, its own development policy, and is in the process of determining what parts from the past development it should retain and what parts it should reject. To do this, Sakha must evaluate the performance of the various sectors of the economy and discover which of the sectors, or parts of sectors were distorted, from the point of view of the new market conditions.

Unfortunately, past analysis of economic development of the Republic of Sakha, especially after the mid-1930s, was imbued with so much propaganda about building socialism that it is difficult to form a realistic picture of the process of development. Many western social scientists, in the absence of available information, accepted the highly politicized Soviet interpretation and reinterpretation of development in the North and the Republic of Sakha during the Soviet period. The prevalent view is that the entire Soviet economy operated under the governing principle of autarky [self-sufficiency]:

> The state established a foreign trade monopoly to ensure that dealings with the outside world were in accordance with the needs of industrial-

> ization. Initially, agricultural products were exchanged for the machinery-in particular, machine tools that could be used to make other machinery-vital to the early stages of industrialization, and heavy reliance was placed upon lessening dependence on the rest of the world, for such reliance was viewed as incompatible with the planned nature of the economy. This autarky approach dictated that a complete range of industrial products should be produced domestically. Domestic production was, therefore, substituted for imports, and specialization according to comparative advantage was neglected. (Gregory and Stuart, 1986, p. 144)

In addition, the lack of information and large scale propaganda prevented westerners from studying the actual changes in internal economic and regional policy. Western social scientists took the veneer of seeming immutability of Soviet economic policy at face value. This is mostly due to the nature of Stalinism and its reliance on contradiction and hypocrisy as operating principles. As Louis Fischer noted in 1953:

> ... it is clear that the apparent conflict was actually the design. Stalin's left and right hands were consciously engaged in two separate and opposite operations ... The task of administrating a gigantic country by compulsion is a formidable one. Exceedingly rapid industrial expansion increased Stalin's difficulty and created a necessity for new incentives. (Fischer, 1953, p. 134)

Stalin ruled by dividing the party committees and destabilizing his opposition. During the debate on Soviet economic policy between 1924 and 1928, Stalin allied himself with Bukharin and the right wing of the of the Communist Party, which advocated balanced economic growth and an autarkic[30] foreign economic policy. (Gregory and Stuart, 1986, p. 91–92) After getting rid of Trotsky and the left-wing, Stalin turned on Bukharin and the right wing and adopted a program that echoed the left wing's original plan for industrialization. (Gregory and Stuart, 1986, pp. 91–92) To believe that Stalin and Gosplan remained unwaveringly loyal at all times to a proclaimed policy of autarky is an unjustified assumption.

A further complication in the analysis of development in the northern areas of Russia is the strong link generally made between northern development and an immutable, idealized policy of Soviet autarky. The conventional notion is that the Soviet Union developed resources in the Russian North for primarily "non-economic objectives, such as resource independence and sovereignty." (Huskey and Morehouse, 1992, p. 131) Some western social scientists argue that the resources of the Soviet North were exploited for self-sufficiency. Examples of this include Bond, who writes "... there was a certain logic to [supply-side orientation] ... during the Soviet period, when autarky, not cost efficiency, was the prime objective." (Bond, 1994, p. 551) By doing so, the argument goes, the Soviet development decisions were made in a socialist bubble, with respect to price, cost and structure of development.

What I would characterize as the post-Sovietologist's view is best articulated by Michael Bradshaw of the University of Birmingham. After summarizing the traditional

definition of the Russian North as presented by Slavin (Slavin, 1972, pp. 38–39) Bradshaw concludes,

> Thus, the pattern of regional economic development in the Soviet North was a direct consequence of the nature of the Soviet system and particular characteristics of that system were crucial in shaping the scale and structure of economic development. For example, the Stalinist extensive development strategy with its emphasis upon rapid industrialization to promote and secure the ideological and strategic goals of the Soviet Union promoted a scale of development that would not have been possible in a more market-oriented society. A desire for economic self-sufficiency promoted the development of mineral resources in remote northern regions, a policy made possible by the use of force and labor and a disregard for the real economic, social, and environmental cost of high-latitude industrialization. Furthermore, as Greg Poelzer's (1995) paper demonstrates, this development strategy required the creation of a highly centralized political-administrative system. (Bradshaw, 1995, p. 199)

In examining the above viewpoint, I do not claim the opposite extreme, that political goals and autarky did not play any role in Soviet Northern development. Autarky definitely played a role in the Soviet Union's overall trade and development policy between 1932 and 1952. (Gregory and Stuart, 1986, p. 296) Autarky was probably not a premeditated policy, but a result of the combined failure of the policy of collectivization of agriculture and the collapse of world grain prices between 1929 and 1933.[31] The USSR's chief export was grain, but with the complete collapse of the Soviet agricultural system, it became impossible for the USSR to import anything. I argue, rather, that a comprehensive view of northern development illustrates the fact that autarky alone does not present an adequate explanation of the Soviet development process in northern areas.

A more accurate view, based on the general pattern of Soviet northern development, shows that exporting commodities abroad played an undeniably crucial role in development. Soviet planners were agents of expediency, rather than slaves to the principle of autarky, often enough to negate the traditional assumptions used to explain northern development. Specifically, the seemingly small exceptions made to the general Soviet policy of autarky led to large effects on northern development. This is especially true after 1950. If the explanation of northern development is based solely on the policy of autarky,[32] then the considerable function of export is ignored.

Part of the reason the role of export in the regional development of northern regions is ignored is that western experts did not take into account that a nation-wide policy of import substitution does not automatically affect the structure of a regional economy. A policy of import substitution would generally strengthen the economic forces that counterbalance the structural extremes caused by export-led development and, thus, contribute consistency to an overall policy of Soviet autarky. This does not preclude the possibility

that the opposite can also be true simultaneously for a specific resource-producing region, like Sakha.

From the point of view of the region, direct exports of commodities outside the USSR and import substitution of commodities within the USSR can bring about an equivalent demand for the resources produced in the region. That is, the region is an export economy whether it exports its goods to buyers in either London or Moscow. In turn, this external demand leads to an export-led strategy for a region like the Republic of Sakha. This thesis argues that for Sakha, this is demonstrable since the fur trapping days before the Russian Revolution, and continues throughout Sakha's Soviet and post-Soviet economic history from the gold rush on the Aldan to the diamond sales in the 1990s.

In addition, a policy of import substitution of commodities for the USSR does not necessarily lead to decision making which is completely delinked from world market prices. A commodity produced within a country as an import substitute is, at least to some extent, price-sensitive relative to a foreign-obtained substitute, whereas a purely autarkic policy suggests exclusively price-blind, ideologically motivated, substitution. This last point is seemingly subtle, but it probably makes a significant contribution to the rationale involved in the decision to redirect massive investment into the creation of the diamond industry in Sakha. High prices and trade restrictions in the industrial diamonds market in the 1950s made it attractive for the Soviets to invest in a local industry, rather than to try to acquire diamonds at relatively high prices from the few world sellers who would trade with the USSR. It may make sense to criticize the "economic rationality" of the demand for industrial diamonds and the creation of a massive Soviet tool cutting industry, but once the demand for industrial diamonds was established, the "rationality" of developing the diamond mines of Mirnyy was assured. The subsequent world market demand for gem diamonds only reinforced the continuation of export-led regional development for the Yakut ASSR.

On close examination, the decisions made based on socialist inspired planning do not adequately explain the economic growth of the Republic of Sakha over the course of the last seventy years. Sakha is better explained as an economy driven by export-based growth and the associated linkages and growth in other sectors of the economy. Resources exploited in the Republic of Sakha were exported from the region to meet Soviet domestic demand, often as a substitute for imported commodities, as in the case of industrial diamonds, and also for exports abroad for hard-currency, as in the case of gold and gem diamonds. Export-based growth for the Republic of Sakha is certainly an adequate explanation for the overall growth of the economy since the Republic was "opened" to the market in the 1990s.

Stalin's original stated economic policies focused on heavy industry, self-sufficiency and general propaganda about building socialism, and obscured the role of export-led growth as an important force driving Northern development. Therefore, the policy of autarky was proclaimed for all of the USSR, but the patterns of development in the Russian North are inconsistent with this single explanation.

Terence Armstrong, the great British economic geographer, writing in the 1970s echoes the traditional understanding of the Soviet North, with an important *caveat*.

> In the last fifty years, the main thing that the Soviet government has been seeking in the North has been mineral resources. The need, rendered urgent in Soviet eyes by the almost universal hostility towards the young Soviet state, was to discover and exploit deposits of those minerals in which the country was then deficient. This motivation was strong enough to overcome the disincentive of high development costs. But even so, the emphasis has naturally tended to be on minerals of exceptional value: gold, nickel, tin, diamonds and apatite [mineral] are the principal ones. (Armstrong, Rogers and Rowley, 1978, p. 26)

Armstrong's explanation begins with the standard, "non-economic objectives ..." reason, but, not completely satisfied with such tautology,[33] he modifies it by emphasizing minerals of exceptional *value*. Tussing shows in Alaska that although Alaska is poor in resources *per unit area*, this guarantees that only exceptional resources, like Prudhoe Bay oil, are developed. (Tussing, 1984, p. 51) What if we turn the explanation of Soviet Northern development on its head and analyze Northern development as though there was no "disincentive of high development costs" to overcome? Instead, we could consider the development of the North as carried out through an underlying policy maximizing economic rent from export. This economic rent was later redirected to save the other inefficient industries within the USSR and keep the communists in power. This recipe for colonizing part of the Soviet Union for the benefit of the entire country is not so far fetched. The Soviet Communist Party was naively open about the logic used within its overall policy to create a vast resource colony. In 1939, the official duly authorized "short course" of the History of the Communist Party of the Soviet Union (Bolsheviks) explains what Socialist industrialization of the country meant:

> ... construction work on so large a scale would necessitate the investment of thousands of millions of rubles. To count on foreign loans was out of the question, for the capitalist countries refused to grant loans. We had to build with our own resources, without foreign assistance. But we were then a poor country. There lay one of the chief difficulties.
>
> Capitalist countries as a rule built up their heavy industries with funds obtained from abroad, whether by colonial plunder, or by exacting indemnities from vanquished nations, or else by foreign loans. The Soviet Union could not as a matter of principle resort to such infamous means of obtaining funds as the plunder of colonies or vanquished nations. As for foreign loans, that avenue was closed to the U.S.S.R., as the capitalist countries refused to lend it anything. The funds had to be found *inside* the country. (CPSU(B), 1939, p. 281)

Of course, there was no need or inclination, in the 1920s and 1930s, for the Soviet Union to plunder colonies abroad, when Soviet bureaucrats could unleash a policy to plunder the colonies within.

Throughout the period that the Soviets carried out a policy of economic isolation, the Soviet Union always carried out foreign trade, secret or open. This was the weak chink in the Soviet closed economy, and in the construction of socialism in one country. Development of resources that were exported, albeit through a convoluted system, like gold, diamonds, timber, coal and, later oil and gas; or products that would act as import substitutes, like tin, industrial diamonds and nickel that the Soviets would need to purchase for foreign currency, unless able to be supplied from within, were all ultimately linked to world market prices and capitalist gains from trade. This list of "export" resources also happens to be almost the entire menu of resources produced in the North. The Soviet Union's exports were mostly in commodities[34] like gold, diamonds, forest products, oil and gas and coal which are the major products produced in the North. Three out of these five, for example, were at one time major items of production for the Yakut ASSR. Many of the resources of the Russian North were not reallocated by the State Planning Agency into the Soviet economy, rather they were shipped out of the country. Russian northern development was ultimately "hard wired" into the world market. Decisions and the general patterns of growth are no more "bizarre" or "uneconomic" than development in other parts of the world. One American engineer who worked in the Soviet Union from 1927 to 1937 explained the incentive behind the expansion of the Soviet gold industry:

> When people find gold ... they can soon get what they want, whether they live in Alaska or in Soviet Russia. (Littlepage, 1938, p. x)

Sakha's export-driven economy may not have completely been an accident. Stalin's intended concept for development for Sakha and the Russian Far East is closely aligned to Douglas North's staples theory explanation of export led economic growth in the US. This is clearly evident after comparing Findlay and Lundahl's description of North's "staples" approach (see Chapter 1) and Alexander Serebrovskiy's (head of the Soviet gold industry from 1927 to the late 1930s) description of Stalin's plan for Russia's North and Far East.

First, Serebroskiy's description:

> I will relate how I remember his [Stalin's] profound thoughts about the USA.
>
> The discovery of gold in California had more significance than merely strengthening the US currency. It gave a push to the development of agriculture of northern California, and also a push for American industry.
>
> Enlightening me on this issue, Comrade Stalin brought in many examples from literature, he especially focused on Bret Harte [an American West cowboy/gold-rush novelist and poet], whose work, it seems, he knew extremely well and who compared him with Maminym-Sibiryakov. Not getting involved in the technical details, he said that the new regions of the

> USA raised themselves up from the very beginning on gold, and in the wake of gold other industries developed-zinc, lead, copper, and the metal mining industry as a whole. In this way the whole region came alive, because one needed to get bread and other produce, clothes and goods ... This all starts from the very beginning around gold mining, and then other industries start to develop. The process exemplified by California and the stages of development need to come about in our far-off regions, which we are starting to develop, and they should start first with the development of the gold [industry]. After [developing the gold industry] we expand to the development and production of other metals that are tied to gold, the so called "associated metals," and then we expand, in parallel, to the mining of coal, oil production, iron production and strengthen agriculture and the development of other industries related to the life of society. (Serebrovskiy, 1936, pp. 16–17)[35]

Compare Serebrovskiy's report of this 1927 meeting with Stalin, where Stalin supposedly laid out his concept of the Soviet gold mining industry in the remote regions of the Russian Far East and Central Asia, with North's ideas:

> The approach was first applied extensively by North ... who emphasized that international demand for export products had been the 'prime mover' of economic development in the United States since early colonial times. In particular, North applies the "staples" approach to the case of cotton and the *ante-bellum* South. Not only did cotton lead to a spectacular development of the Southern "plantation economy" itself but also generated strong linkage effects to other regions of the country. The North East supplied the South with finance, transport, insurance and marketing facilities, and most importantly, manufactures. Simultaneously the West was developed to supply the South, highly specialized on cotton, with its grain requirements. Westward migration was induced and the transportation network, first canals and then railroads, had to be provided for the South to be adequately supplied. According to North it was this interlinked process of staple-based growth, involving the inflow of people and capital to extend the agricultural frontier, that generated the prosperity of the United States in the *ante-bellum* period. (Findlay and Lundahl, 1994, p. 71–72)

Serebrovskiy seems to have received a staple theory explanation about development in California and a model for the future of the development of Soviet remote regions. Stalin describes the linkages emanating from a primary resource industry in a very similar manner to the staple theory. Of course, Serebrovskiy may have made up the entire meeting with Stalin. Nevertheless, that a succinct description of staples growth was expressed in the 1930s, in Russia, by the Bolsheviks, is itself remarkable. That this description found its roots in Bret Harte and not an economist or philosopher adds an interesting irony.

What was "bizarre" and inhumane about Russian northern development was the factor price of labor—at cost slave labor. This may also be accomodated by theory. Some may argue that the South African miner's wage and treatment during the same period was only a little better than a Soviet convict's lot. Comparisons have been made between the

"human costs" of capitalism and the human costs of Stalinist development. (Wilber, 1973, pp. 331-334) Certainly, earlier, the Spanish colonists in the Americas experimented with a work force of Native American slaves that tended to die off at a very high rate, until African slaves were substituted for Native American slaves. A connection also lends itself from Douglas North's staples consideration of the export of cotton from the *ante bellum* US South and the "spectacular development of the Southern 'plantation economy.'" (Findlay and Lundahl, 1994, p. 71) Might not the gulags be considered a 20th century Northern version of a Southern plantation? Certainly evil and inhumane, but not economically irrational.

Gold had extraordinary status under Stalin, which continued under Brezhnev and is still prevalent today. (Tichotsky, 1993, p. 58) For Stalin and the central planners gold was the main tool for interaction with the outside world and for balancing foreign trade. Gold was the super commodity, the general cure that could "solve" any of the problems associated with planning:

> ... According to Soviet theorists ... the significance of money consisted in the fact that the ruble was preserved in such a manner as to control the execution of plans, the production, circulation, and accumulation of commodities. Gold they regarded as "monetary merchandise" indispensable for international relations. (Lawton, 1934, p. 12)

Gold to the Soviets conjured all kinds of mercantilist theories and "fantasies," fully embracing Marx's, "fetishism of commodities." (Tussing, 1995, personal communication; Renfrew, 1986, p.157) Gold was highly fungible (easily turned into cash) and easily transportable, providing great value added to the cost of production (Tussing, 1995, personal communication). The Soviets called gold a *valuta* (something equal to money). Starting in 1950, the USSR switched to an entirely gold-based ruble,[36] and boosting Soviet gold reserves became a priority, (Slavin, 1961b, p. 14) perhaps, suggesting that Soviet gold reserves were sufficiently built up. Previously, from 1936 to 1950, the ruble rate was based on foreign currencies. Gold has had a greater importance to the Soviet economy than to the western economies since the mid-1970s, when the International Monetary Fund demonetized gold and the US deregulated government-controlled gold sales. Gold was sometimes used for foreign trade and Soviet credit extensions to Third World and socialist countries (Slavin, 1961b, p. 14). For the Soviet Union, sale of gold was one of the few ways it could acquire hard currency to buy goods produced by the West (Slavin, 1961b, p. 14). In 1992, the President of Magadan's first independent gold mining company noted:

> Under the old system, gold was the 'magic wand' that helped the Soviet Central Committee of the Communist Party or the Poliburo create an instant feeling of well-being. The old leaders would take gold, sell it on the open western market, and use the hard currency to buy goods that would appear on the shelves in Moscow and other areas at needed times, like state holidays. (Tichotsky, 1993, p. 59)

Diamonds, we have seen, were sold secretly to the USSR's enemy number three, South Africa (after USA and Israel). Coal and timber were also sold abroad. Oil and gas from West Siberia were sold abroad, with the most recent large-scale project being a gas delivery system to Western Europe.

It seems that most of the resources of the northern regions found a way directly or indirectly to the Soviet export market. Sakha's and Magadan's gold mining economies under Stalin fits as conveniently as an extreme case of export-based development, as a Canadian capitalist-colonial export-based case study. (Armstrong and Taylor, 1985, p. 66) Moscow, the resource owner, supplied the Northeast with finance, transportation, slave labor (a gruesome, functional equivalent to cost-reducing technology) and manufactured goods. The entire northeast Russian economy was driven by the engine of gold production. The gold the USSR mined could always be sold on the market, and would always find a demand or be used to secure loans. Even if it was not sold immediately abroad, its value as a reserve was one of the Soviet Union's guaranteed links with the world economy. Stalin himself placed a great faith in gold and its relationship to economic stability, presumably through gold sales or resolving balance of payments. In his report to the Eighteenth Congress of the Soviet Communist Party, Stalin said:

> ... aggressive countries, having exhausted their reserves of gold and raw material in the course of the war fever, are bound to enter a very severe crisis.
>
> This is clearly illustrated, for example, by the figures for the visible gold reserves of the capitalist countries ...
>
> ... the combined gold reserves of Germany, Italy and Japan amount to less than the reserves of Switzerland alone [figures for 1936 and 1938]. (Franklin, 1973, p. 336)

In the 1930s, Westerners writing about the gold standard recognized the importance of gold to the Soviet Union.

> Perhaps the most effective demonstration of the vitalizing effect of adequate gold reserves on a national currency is supplied by Russia. Six years ago the currency of Russia was a by-word and a reproach ... But, thanks to the enhanced production of gold within the country, its currency has been completely reformed. It is not yet adequate for the country's needs, but it is expanding towards the objective ... (Morgan-Webb, 1938, pp. 116–117)

There is conflicting information as to how much gold was sold abroad by the Soviet Union under Stalin. Kempton mentions that, "[a]lthough the USSR paid an extraordinary high price—in human life and other terms—during Stalin's lifetime for its gold, very little of it was sold on the world market" (Kempton and Levine, 1995, p. 90) and claims that Stalin's professed principle motivation for developing the Russian Far East was as a bulwark against Japanese imperialism.

I believe that Kempton and Levine misinterpret the role of gold under Stalin. A significant volume of gold was sold during the early years of Stalin's rule. Until 1936 there

were significant sales of gold to the West, although these sales are difficult to track. In the 1930s, Lawton, an English analyst, figured that since the Soviet Bank listed gold reserves of about £80 million in 1934 and that the Soviet Union exported about £19 million of precious metals and currencies, £29 million in 1933 and £12.5 million the first half of 1934, most of this export must have come from the gold reserve since foreign currencies and other precious metals were listed by the State Bank in 1934 to be less than £4 million. (Lawton, 1934, p. 16) Furthermore, in Lawton's own words:

> ... It will be realized that provided a serious proportion of this reserve remains unhypothecated, the U.S.S.R should have no difficulty in raising credits abroad. It will be realised, too, that however sceptical Soviet authorities may be as regards the gold standard, they must desire that it shall continue and increase in favour abroad; for Soviet Russia is an important producer of gold, and is placing great reliance upon the increase of her output at the present time, when so high a price for it is procurable. (Lawton, 1934, p. 17)

Kaser, an Oxford economist who provides a more precise conjecture than Kempton and Levine, says, "[g]old had been disbursed heavily under the 1st Five-Year Plan (1928–32) for equipment and purchases and under the 2nd (1933–1937) the commercial credits incurred under the 1st being repaid ..." (Kaser, 1983, p. 587) and, "... to replace grain by gold as a Soviet export ..." (Kaser, 1983, p. 560) Davies supports Kasers' view and notes that, "[n]o precise figures are available for the amount of gold and other precious metals exported; its value has been estimated at over 100 million rubles in both 1931 and 1932, equivalent to 12–18 percent of the value of other exports." (Davies, 1996, p. 164) After 1936, gold sales are not recorded in any of the literature reviewed, but the importance of gold for foreign trade is certain. For example the Soviets made a payment to the Americans with five tons of gold in 1942[37] as a partial repayment for lend-lease assistance. (Burns, 1981, 14 September)

Kempton and Levine also exaggerate the connection in Stalin's mind between development in the Russian Far East and Japanese imperialism. Their information is based on Timothy Green's popular book on gold. (Kempton and Levine, 1995; Green, 1993) Green's information about Stalin's concern is based, in turn, on the work of Littlepage, the Alaska mining engineer who worked for the Soviet government. (Green, 1993; Littlepage, 1938) As we have seen, Littlepage quotes the work of the head of the Gold Trust who claims that Stalin's idea for expanding the gold industry in Siberia and the Russian Far East was based on the experience of the Americans. Littlepage adds his own "conjecture" that Stalin probably thought it would also provide a reason to populate Siberia and the Far East against Japanese territorial expansion. (Littlepage, 1938, p. 26) Kempton and Levine incorrectly credit this idea directly to Stalin "... he [Stalin] believed that the eastern expanse of Siberia was under-populated and thus vulnerable to Japanese expansion." (Kempton and Levine, 1995) This is based on Littlepage's statement:

> ... Stalin and the other Communists were probably beginning to get worried about the Japanese menace to Russia's Far Eastern possessions ... It was natural that Stalin should turn over in his mind various means to make this territory more secure. And the California gold rush gave him a clue. (Littlepage, 1937, p. 26)

This is certainly a legitimate and insightful supposition, but should not be attributed as the final proclamation of Stalin. The Russians were clearly paranoid about the Japanese and their military activities in Russia during the Russian Civil War and later in China. (Kolesov and Potapov, 1937, pp. 106–107) The Japanese even armed and gave money to the White leader Pepelyaev, who operated in Yakutia. (Kolesov and Potapov, 1937, p. 106) Serebrovskiy though, never mentions that Stalin connected Japanese imperialism with the Soviet gold industry. (Serebrovskiy, 1936) That Stalin saw Japanese aggression as a principal reason for developing the Russian Far East remains an interesting conjecture in light of the existing evidence.

An export-based view of Soviet northern development also helps explain the surprisingly extensive use of market incentives at various times within the Soviet system. The Soviet Union was a country struggling to overcome the severe depression and starvation of 1927 which was brought on by failed policies and bungling bureaucracy. Magadan was established as a huge gold producing area within eight years. In 1928, *Soyuzzoloto*, a Soviet government production trust, sponsored Yuri Bilibin, a twenty seven year old Leningrad geologist, who, in the summer of 1929, discovered several commercial deposits of gold in the area of the Kolyma River Valley. Bilibin estimated that the deposit would bring four times as much gold as the country's entire production by 1938. (Tichotsky, 1993, pp. 21–22) Bilibin seriously underestimated probable gold production, in that it probably increased Soviet gold production by a factor of eight. (Tichotsky, 1993, pp. 21–22) By 1933 the Kolyma area had over 25,000 prisoners and 2,500 hired laborers mining for gold. (Tichotsky, 1993, p. 25) Incentives beyond "building socialism" are needed in order to explain how the dictatorial, Stalinist bureaucracy could quickly move forward such a venture and within a year and a half start a company based on estimates made by a 27 year-old geologist who promised to quadruple gold production in the USSR within eight years.

Monetary and wage incentives were employed when gold mining received its first expansion in the 1920s, albeit erratically. Littlepage noted:

> Remuneration both for [gold] prospectors and lessees was deliberately designed to appeal to man's acquisitive instinct, unlike that in mines or factories. These people would have to live under extremely rough conditions for considerable periods in order to do their work, and the authorities had decided they could be attracted in sufficient numbers only by the offer of large material rewards.
>
> As the system finally worked out, a lucky prospector in Soviet Russia can become rich overnight just as easily as he can in any other country. The Soviet prospector's rewards may not be quite so fabulous as those of other

> countries, but they were made attractive enough from the beginning to draw hundreds of thousands of persons into the work. (Littlepage, 1938, p. 125)

In the 1930s, prospectors received 30,000 rubles for reporting and turning over to the government a verified gold strike, 100 times the yearly salary. (Littlepage, 1938, p. 126; Kempton and Levine, 1995) In addition, the prospectors received rights to work over the "outcrops" of the mine, which according to Littlepage were worth an average of 15,000 rubles a year. These prospectors received the payment in "gold rubles" which could be used in special Gold Trust shops that sold foreign goods and goods not sold in state stores. (Littlepage, 1938, p. 166) These stores were described by Littlepage: "It is something of a shock to come across one of the big gold stores in some remote part of Siberia or the Far East where everything else is primitive, and discover a store almost as good as a general store in the United States ... (Littlepage, 1938, p.166) In the gulags during the 1930s, ex-prisoners were given lucrative three year contracts to stay on as miners after being released from concentration camps. After Stalin died, gold production dropped in the Kolyma, but mechanization, and the tripling of wages to people who worked in industry in the North, led to production recovery. Chambers and Gordon make the connection between per capita income and primary-product development, a center point to prove or disprove primary-product export led growth. (Chambers and Gordon, 1966) After the death of Stalin, per capita income was certainly higher in the North relative to the rest of the USSR.

Under Khrushchev, as a result of the release of thousands of gulag prisoners and the export of 3,000 tons of gold between 1953 and 1960, the USSR had to wait until 1972 to build up adequate gold reserves to resume major gold sales. Massive in-migration to the Northeast resumed, after wages were tripled for working in the North. Under Brezhnev, gold export-led growth meant a significantly higher per capita Gross Domestic Product (GDP) and per capita income for people in the Northeast. Extraordinary transport and supply (backward) linkages were established. (Slavin, 1972) In Sakha, a classic staples replacement pattern of fur; replaced by; gold; replaced by; diamonds and export-led growth emerged under the succession of Tsars, Stalin, Khrushchev, Brezhnev, Gorbachev and Yeltsin. (Rogers, 1962, pp. 60–102) Diamonds remain Sakha's economic engine. Oil and gas might be a possible future engine of development.

Within this context, how then can we explain the greater magnitude of development in northern Russia, compared to Alaska or Canada, without bringing in "non-economic" factors? This is where Ricardian rent theory comes into play. Ricardo compared lands of different productivity and concluded that the most fertile lands would be exploited until the profit on a plot of land was equal to the marginal cost of production. (McDonald, 1979) In Alaska, for example, the gold mining industry contracted in the 1930s because "... [n]othing presently in sight offers gold miners relief from the squeeze caused by increasing costs and a fixed product price." (Rogers, 1962, p. 90) The Alaska gold industry was basically wrecked by the US' anti-market move to fix the price of gold at $35 an ounce from 1933 to 1973. Besides, there were also other lower cost gold mining areas in the United States

(California and Nevada) to substitute for Alaska. In the USSR, the factors of production were much lower than in the US, especially if the use of slave labor is taken into consideration. In fact, at $35 hard currency, an ounce of gold had a greater comparative advantage in the Soviet Union than in Alaska. Places like Magdan were the most productive lands to exploit, and the world price was above the Soviet planners' evaluation of the marginal cost of production.

Russian patterns in gold mining are also consistent with export-led growth (the development of lowest cost first, followed by highest cost deposits): the Aldan gold fields were brought into production in the 1920s and 1930s, the Kolyma (Magadan) gold fields in the 1930s, and Chukotka was brought on after the 1940s. Placer mining preceded lode gold mining in most cases.

Oil and gas development patterns were also consistent. Oil fields were developed in West Siberia, but much later, or not at all, in the Russian Far East, especially since all links to world markets operated out of Moscow. At first sight the milk cows and tomatoes raised north of the Arctic circle seem absurdly high cost items, but compared to the economic rents made on resource extraction and the low wages paid to labor, this was at relatively low cost, probably no greater than a municipal property tax, a wage benefit or high quality food served to oil workers on the North Slope of Alaska. It may also be the only way fresh milk and produce could be made available in the North since Soviet refridgerated transport was poorly developed. In addition, misallocation of resources by government is certainly not the exclusive realm of the Soviet government. In the 1970s and 1980s, the State of Alaska re-directed $50 million from oil revenues to develop barley farming in Alaska.

> This money has gone for loans which were never repaid, and the construction of access roads, rail lines, hopper cars, and grain elevators, all designed to facilitate the transportation and storage of large quantities of barley which were never grown. And many of the Alaskan farmers who were taking money from the state to grow barley were double-dipping—simultaneously taking money from the federal government *not* to grow barley. (Jackstadt and Lee, 1994, p. 9)

Today, the case of Sakha demonstrates that in the gold industry, in three out of five instances, the firms are not profitable in the face of market pricing of labor and fuel, while the diamond industry remains extremely profitable and provides the land owners/controllers (Russia and Sakha) with huge economic rents.

The main conclusion about the economic development of the Russian North is that while the rest of the Soviet Union was building socialism and militarizing the USSR, the Northern Division of the State Planning Agency (Gosplan), given a set of constraints, acted as if they were agents of export-led growth. The Northern Division of Gosplan was the colonial office for the Soviet Empire. Gosplan faced initial conditions that imperialists can only dream: receiving most of the economic rent, free land, almost free labor, high-grade resources, with no need to internalize social or environmental costs, and leaving the local

economy almost no surplus to diversify. Only in the late 1970s and 1980s attempts were made to correct the blatant hypocrisy to socialist principles, by trying to compensate with value-added downstream mega-projects, like Norilsk.[38]

Through much of the Soviet period , the planners expected a long term discount rate that was low and stable or decreasing, since under a future communist system no money would be used to buy minerals, and the short-term returns on selling mineral wealth for hard currency were extremely high relative to gains made on the internal market. The policy to exploit the resources rapidly, with little regard for anything except quantity seems consistent with a Hotelling model of resource depletion. (Hotelling, 1931) The planners can certainly be accused of being bad socialists, unconcerned with the plight of the laborer, the quality of life of the people, and the state of the environment. As colonists and imperialists, the planners were exemplary.

CHAPTER 4

THE REGIONAL ECONOMY OF THE REPUBLIC OF SAKHA

This chapter looks at the overall regional economy of the Republic of Sakha, focusing on the changes in the Sakha economy between 1990–1995. The structure of the Sakha economy is evaluated by looking at Sakha's Gross Domestic Product (GDP), industrial output, and exports, measured directly and on a per capita basis. Comparisons are made with the Russian economy. In addition, Sakha's regional budget, employment, wages and income are reviewed. Finally, brief information is presented about the quality of life within Sakha, as well as regional differences within the Republic itself.

No comprehensive overview of basic economic indicators exist for the Republic of Sakha in English. Furthermore, the information about Sakha that exists in Russian is disjointed and lacks any consistent analytical interpretation. The information in this section is intended as both an introduction to the economy of Sakha and an initial record of a Russian region during an intense period of economic transition (1990–1995).

Starting about 1991, when the Soviet centrally planned economy collapsed, Russia experienced a combination of large-scale economic decline and major structural economic change. As Russia moves erratically to a more market-oriented economy, heavy industry, machine-building and the military-industrial complex (all previously the backbone of the Soviet economy), experienced an unparalleled decline. Light industry was also hard hit, since Russia's goods were generally of low quality compared to foreign substitutes (goods easily available with the growing opportunities for foreign trade). (OECD, 1995, p. 3) On the other hand, the liberalization of the Russian economy gave the service sector and consumer goods sector of the economy an opportunity to move from about a third of the share of Russia's GDP to over 50 percent. (OECD, 1995, p. 5)

Resources are currently Russia's most profitable output (e.g. oil and gas) and a lifeline for stabilizing the economy. A traditional Russian fear is that Russia may fall forever behind the West. (CPSU(B), 1939, pp. 276–277) Many in Russia now also fear that reform will lead to de-industrialization and that Russia will merely be a source of raw materials to be exploited by the world market. (OEDC, 1995, p. 4) The Soviet Communist Party and Stalin in the 1920s, exploited these fears the last time Russia was in economic ruin:

> ... As against Stalin's plan of Socialist industrialization, the Zinovite Sokolnikov put forth a bourgeois plan, one that was then in vogue among the imperialist sharks. According to this plan, the U.S.S.R. was to remain an agrarian country, chiefly producing raw materials and foodstuffs, exporting them, and importing machinery that [the USSR] did not and should not [according to Sokolnikov] produce itself. As conditions were in 1925, this was tantamount to a plan for the economic enslavement of the U.S.S.R. by the industrially-developed foreign countries. This is a plan for the perpetuation of the industrial backwardness of the U.S.S.R. for the benefit of the imperialist sharks of the capitalist countries. (CPSU(B), 1939, p. 276–277)

Insert D

Consumer goods and food deemed critical by the Sakha government continues to be sold at controlled prices.

Central to the economic future of Sakha is policy making that deals with serious internal fears of international and domestic markets. During the Soviet period, the people and leaders of Sakha were buffered from the markets for their products by the formidable bureaucracy and political double-talk of Moscow. As evident in the previous chapter, Sakha's economy was not based on heavy industry nor manufacturing, nor the production of military hardware. Instead, the Sakha economy emphasized a few raw resources: diamonds, gold, coal mining, and northern agriculture. After the fall of the Soviet Union, the Republic of Sakha continues the development of mainly non-renewable resources started under the Soviet system.

Since 1994, the economy of Sakha, compared to the overall Russian economy, demonstrates greater stability and greater economic recovery. In general, Sakha's economy collapsed earlier and to a greater extent than most other regions of Russia, but the Sakha economy also recovered faster than most of Russia. The greatest single factor attributable to Sakha's economic recovery and relative stability is the production and sale of diamonds.

Sakha's diamond deposits are a world class resource and, at the current level of production, Sakha controls at least a quarter of the entire world's production of raw diamonds. Diamond mining, and to an extent coal mining, are extremely profitable activities for Sakha.

Gold mining in Sakha, as we shall see later on, has become unprofitable in most cases, and northern agriculture has contracted significantly. In short, Sakha was fortunate enough to be left by the Soviet system with at least one industry that adapted to Russia's massive structural changes and one that was already linked with world markets and world demand.

Before looking at the various indicators of Sakha's economy, a series of *caveats* are necessary. The enormous relative price changes (inflation rate), changes in the foreign exchange rate and changes in the purchasing power of the ruble since 1991 make it very difficult to measure the structural changes in the entire Russian economy and its regions. (OECD, 1995, p. 3)

Structural changes of the Republic of Sakha carry all the problems of the Russian macroeconomy, plus specific issues that especially effect Sakha. Understanding changes in the economy is compounded by the liberalization of some sectors of the economy (e.g., services, agriculture and consumer sector), combined with continued controls in other sectors (e.g., fuel and energy). This contributes to a warping of the relationships between sectors of the general economy.

Another problem in measuring economic change in Sakha, is the difficulty in making sense of the available data. The various official statistical information published by the Sakha statistical office often conflicts with similar data published in previous years and by other independent sources. Complications arise when comparing Sakha's economic indicators to the economic indicators given for the Russian Federation, since neither the Sakha government nor the Russian government publishes the deflators it uses for comparing basic indicators from 1990 to 1995. For the purposes of this thesis, I combined the comparison nominal economic

indicators, economic indicators deflated using the current dollar exchange rate (year end exchange or a average exchange rate), with economic indicators deflated from inferred government growth (decline) rates for the Republic of Sakha and Russia.[1] This, at least, gives a description of magnitude and direction of structural economic change within Sakha.

The Republic of Sakha is an unusual region in that it has large foreign-currency earnings, due to the principal role the diamond industry plays in its economy. The diamond sector measured in dollars provides information that can be used as an independent frame of reference to measure the performance of the overall regional economy. Unfortunately, serious efforts are made by both the Russian and Sakha government to suppress public access of information on the diamond industry and foreign currency earnings.

Difficulties also arise since apparent changes in Sakha's economic structure reflected in the statistical information might be a result of re-evaluating or newly recognizing the various outputs of the economy. Change in the apparent structure may reflect new and different priorities within the economy and may not be indicative of substantive change. For example, a large amount of economic activity that was considered part of the black market during the Soviet period, is now the core for a significant portion of the new service and small business economy. It should be recognized that the explosive appearance of these sectors within the greater economy is partially due to recognition by the statistical office, rather than completely new economic output. Similarly, it has become impossible for the central statistical office to monitor some of the growing economic activity. This is particularly true of the service economy. The service sector is easier to track in Sakha than in most of Russia, since it is considerably smaller. Yet as in the rest of Russia, many new activities within the service sector are beyond the ability of the statistical bureaus to document.

4.1. Changes in the Sakha Economy 1990–1995

4.1.1. Decline and Recovery in Sakha GDP and Output, with Comparisons to the Russian Federation

In 1992, the decline in industrial output for Sakha was greater than for the whole of Russia. The same year, only Kamchatka had a greater decline in industrial output than Sakha among the regions of the Russian Far East. Figure 4.1. shows how the Republic of Sakha's industrial output fared compared with Russia from 1990 to 1995, with 1986 as a pre-perestroika comparison.

Sakha's economic decline, however, lasted a shorter period than Russia's. In 1995, Sakha's official economic indicator of industrial output indicated that the Republic was on its way to economic recovery. Sakha's industrial output showed a one percent growth for both 1994 and 1995. (Goskomstat-Sakha, 1995a, p. 6; Goskomstat-Sakha, 1996a, p. 20) Sakha's GDP only declined one percent between 1994 and 1995, compared to its 23 percent decline between 1991 and 1992. (Goskomstat-Sakha, 1996a, p. 7) Between 1993 and

1995, the Republic of Sakha's GDP declined three percent less per year than the rates of decline for Russia. Figure 4.2. compares Sakha's decline in GDP to Russia's decline in GDP.

In the end, the cumulative decline of Sakha's industrial output was about half of Russia's cumulative decline of industrial output. From 1991 to 1995, Sakha had the lowest cumulative decline of industrial output of all the regions in the Russian Far East. This can be seen in Figure 4.3., a graphic illustration of cumulative industrial output for Russia and all the regions of the Russian Far East, including Sakha. Sakha's basic indicators show that Sakha's economy is more stable and vital relative to the general Russian economy.

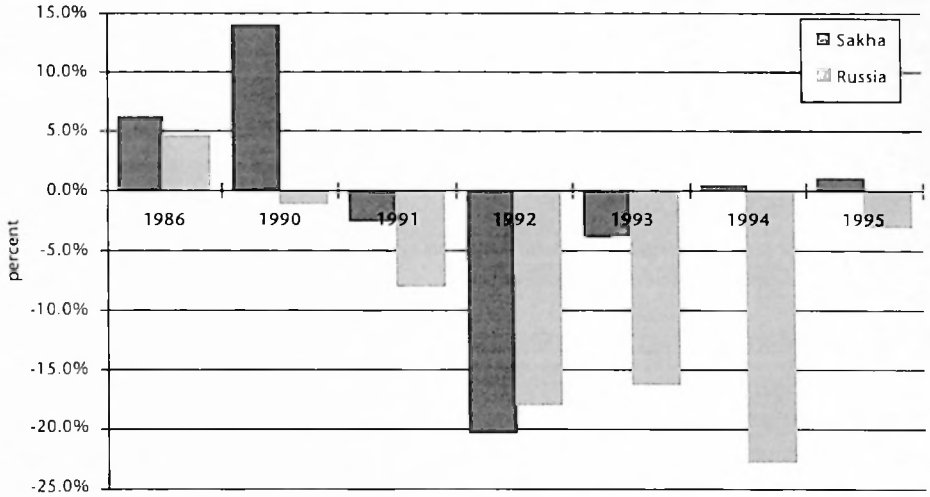


Figure 4.1. Recent change in industrial output from previous year of the Republic of Sakha and Russia from 1990 to 1995, with 1986 as a pre-peristroika comparison.

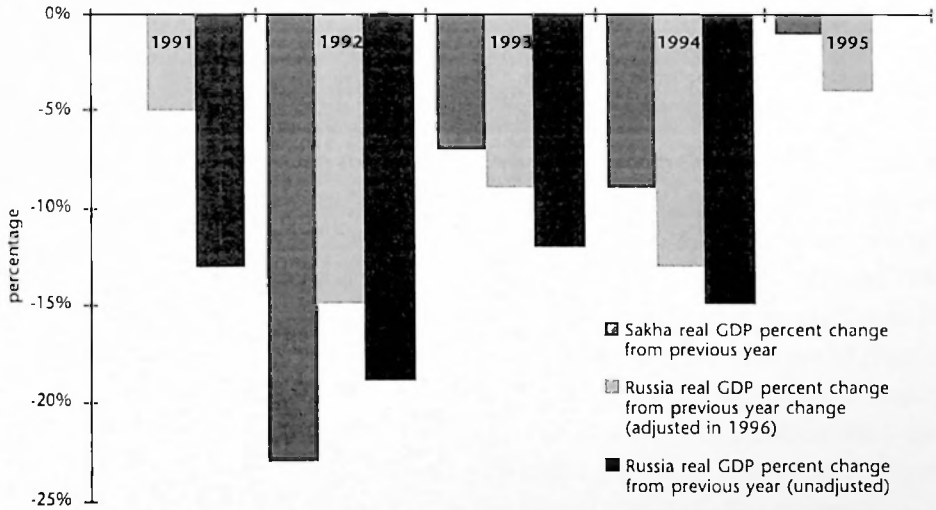


Figure 4.2. Comparison in rates of decline in the GDP of the Republic of Sakha and Russia.

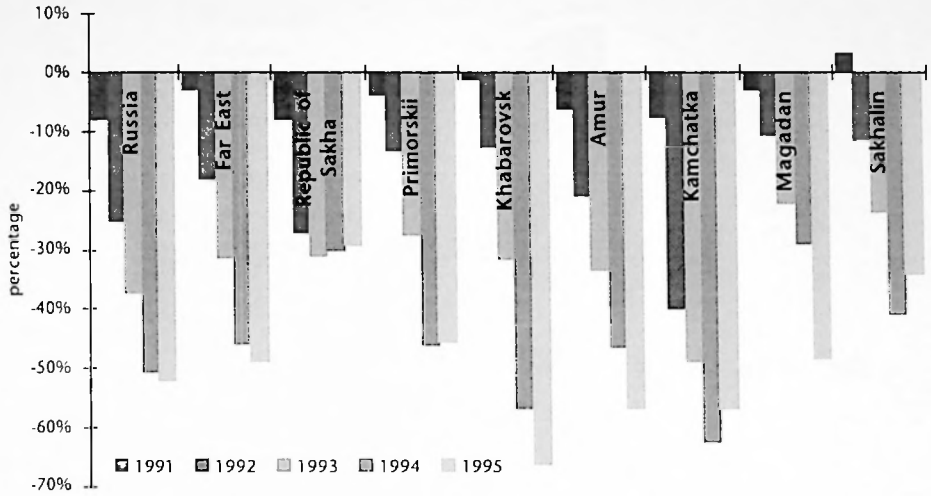


Figure 4.3. Cumulative growth (decline) of industrial output for Russia and the regions of the Russian Far East.

4.1.2. Changes in GDP and industrial output within the regional economy of the Republic of Sakha

Between 1992 and 1995, the Sakha government reported a large contraction in Sakha's share of GDP which occurred in the industrial sector (62 to 40 percent GDP), construction (15 to nine percent GDP) and agriculture (eight to five percent GDP). See Figure 4.4. which shows the relative share of each sector in Sakha GDP for 1992, 1994, and 1995. The Sakha government reported growth for transportation and communication (three to eight percent GDP), and all types of trade and services offered by the government and private sector (about 13 to 36 percent GDP). Private services grew from less than one percent of GDP to seven percent (see Figure 4.4.). Although services did expand within the Sakha economy, the actual structural change was considerably less dramatic then in the general Russian economy (33 percent in 1990 to over 50 percent in 1994. (OECD, 1995, p. 5)

A major factor in explaining the great change reflected in the government data is the way services are valued as compared to goods, particularly natural resources, produced within Sakha's regional economy. Liberalization within the services sector, particularly the freeing of price controls, changed the way services were ranked between 1992 and 1995. At the same time the government set price controls in the industrial sector on resources and energy production. The agricultural sector contracted because of the collapse of the old state farm system. A significant percentage of Sakha's livestock, the chief agricultural product, was privatized and subsequently slaughtered between 1992 and 1995. In addition, the number of livestock were under-reported to avoid taxes and a larger portion of the economy drifted into the informal sector that is not accounted for in the official statistics. The construction sector, although profitable, was less in demand during Sakha's overall economic recession.

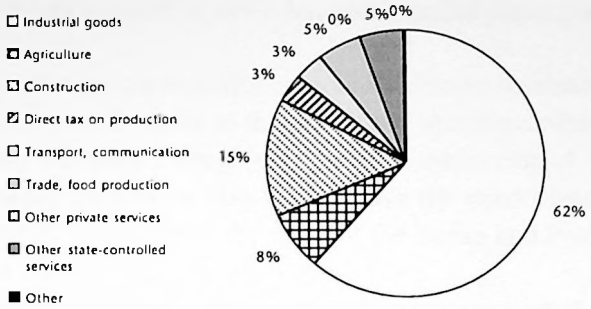


Figure 4.4a. Relative share of each economic sector in Sakha GDP for 1992.

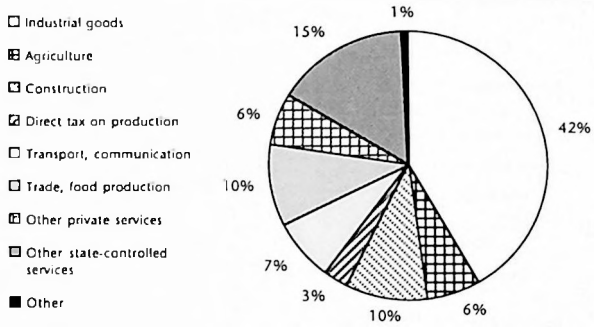


Figure 4.4b. Relative share of each economic sector in Sakha GDP for 1994.

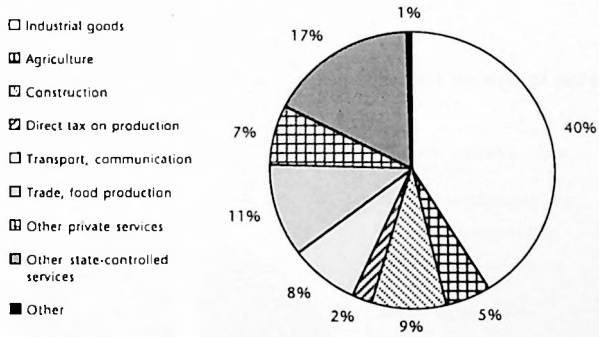


Figure 4.4c. Relative share of each economic sector in Sakha GDP for 1995.

Within the industrial sector, some significant changes occurred between 1993 and 1995. Most notably, the minerals industry represents about 60 percent of industrial output compared with 70 percent in 1993. Figure 4.5. shows the relative share of the main industries within industrial output. This was partially due to the collapse of tin mining and contraction in the gold mining industry. This is also partially due to the rise in energy (gas and coal) prices and electrical energy prices. In addition, the small business segment within

the industry sector was non existent in 1993, but commanded seven percent of industrial output in 1995.

Although the service sector in Sakha contracted, financial services have grown from nearly nothing in 1991. Presently some of the banks and investment funds control a significant part of the regional economy through the control of ownership of the major Sakha enterprises. Unfortunately, there is no easy way to trace the exact ownership of many firms in Sakha. It is also difficult to determine the value of the banks and investment funds since they are not tracked in the statistical bulletins.

Many of the banking and financial services in Sakha are owned and/or controlled by the Sakha government or the chief Sakha industries, which in turn also are controlled by the Sakha government. Unlike most of Russia, where banking and financial services have broken free of the government bureaucracy, Sakha's banking and financial services are certainly in the shadow of the regional government.

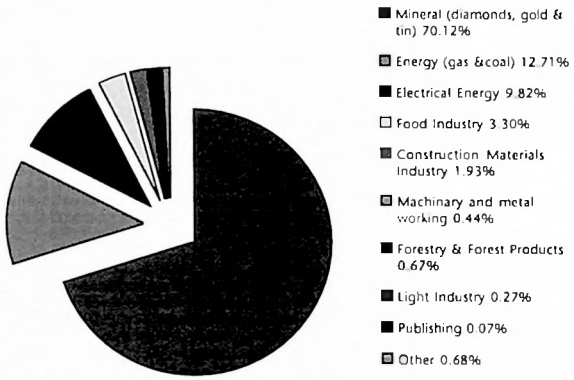


Figure 4.5a. Relative share of the main industries within industrial output for 1993.

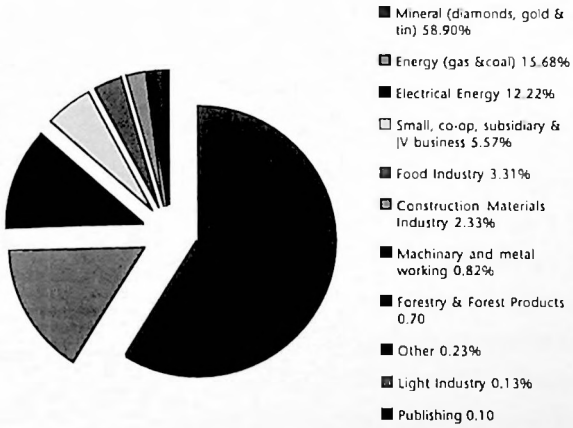


Figure 4.5b. Relative share of the main industries within industrial output for 1994.

Insert B'.

It is possible that the decline in industrial output is not as greatly overstated for Sakha as for Russia since tax evasion and under-reporting income is more difficult within the narrowly-based economy of Sakha. The Sakha economy is made up predominantly of large firms that have long been well-known to the tax and statistical authorities, for example.

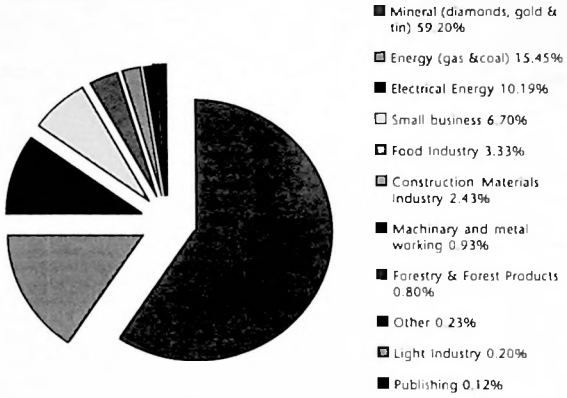


Figure 4.5c. Relative share of the main industries within industrial output for 1995.

A valuable tool is to compare changes in the basic economic indicators between the Republic of Sakha and the Russian Federation. This is a good relative barometer for comparing the Republic of Sakha's performance relative to the Russian Federation. In almost all cases Sakha shows greater economic growth and stability than most of Russia.

It must be noted that the Russian Federation is thought to overstate the fall of GDP between 1991 and 1995. (OECD, 1995, p. 9) This is partly due to the fact that Russia inflated its estimates of GDP prior to price liberalization in 1991. (OECD, 1995, p. 9) The GDP of Sakha is also prone to problems similar to those measuring Russia's output. Even Insert B! indirect measurements of economic growth support the above average success of Sakha's economy. One way the Organization for Economic Co-operation and Development (OECD) tried to verify Russia's overstatement of GDP is to compare it with electricity production.[2] (OECD, 1995, p. 9) For all of Russia electricity production dropped to 80 percent of the 1989 level, whereas GDP dropped to 50 percent. In the Republic of Sakha electricity production fell by only seven percent, to about 1987 levels, while GDP dropped by 35 percent between 1992 and 1995 (Goskomstat-Sakha,1995b and 1996b). See Figure 2.7. (Chapter 2) showing electrical energy consumption for the Republic of Sakha.

Another exclusively Russian statistical indicator estimated for every region within the Russian Federation is the change in the level of industrial production. This is an indicator that relates to a "volume" of industrial production, rather than a straight estimation of value. This indicator of industrial production has been estimated for Sakha since 1928, with 1913 as the baseline indicator. Figure 4.6 shows this relative indicator of industrial production from 1913 to 1995. This indicator shows that Sakha's production fell by about a quarter of its "volume" from 1990 to 1995. In 1995 the "volume" is about equal to that of 1983. This indicator is likely to be less sensitive to inflation than the straight GDP.

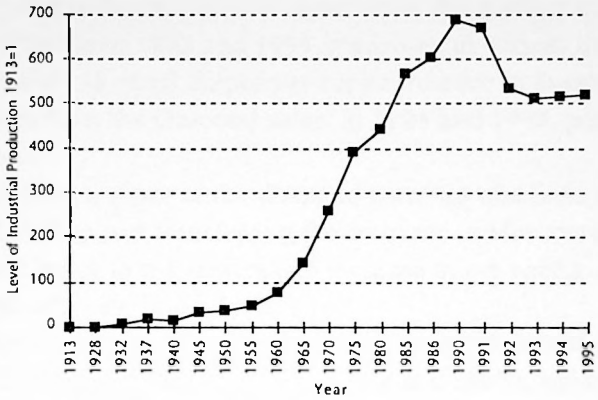


Figure 4.6a. Industrial production 1913 to 1995, linear graphing of the indicator.

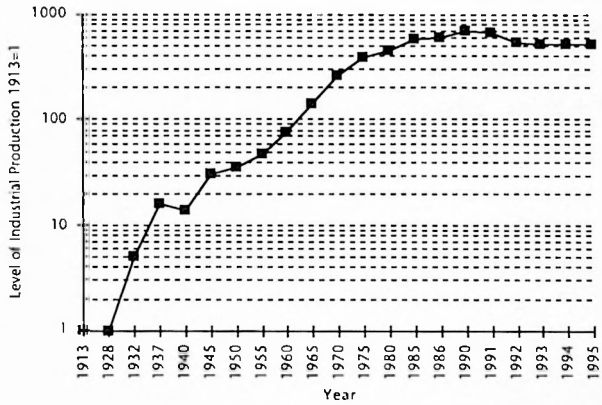


Figure 4.6b. Industrial production 1913 to 1995, logarithmic graphing of indicator.

A more detailed look at the chief industries that produce a major part of industrial production is undertaken in Chapter 5.

4.1.3. Per capita measurement of GDP, industrial output and exports

Comparing GDP and industrial output figures is a difficult task. Adjusting the figures for inflation is the most difficult. I chose to calculate dollar equivalent using year-end dollar-ruble exchange rates. Per capita measures of GDP, industrial output and exports show that Sakha is producing and exporting considerably more than the average for the Russian Federation. The Republic of Sakha had a GDP 1.75 to 2.58 times greater than the average per capita GDP in Russia between 1992 and 1995 when measured in current dollars, and 1.5 to 1.75 times greater when measured in adjusted rubles converted to 1995 dollars. (see Table 4.1.) Sakha's per capita GDP was $4,215 in 1995, within a country whose per capita GDP is less than $2,500, calculated using a current yearly average ex-

change rate. Sakha's industrial output was about twice the average for Russia's industrial output for every year between 1992 and 1995, measured in current dollars. (see Table 4.1.) Sakha's higher GDP and industrial output per capita, relative to Russia is, of course, related to the foreign earnings from the diamond sales. In 1994 and 1995, per capita foreign earnings were over $2,200.

The ability to keep a share of the diamond earnings and include it as a contribution to Sakha's GDP rather than just transferring the resource to Moscow at a low state set price, is an important factor in the remarkable increase in per capita GDP and industrial output between 1991 and 1993. (see Table 4.1)

Using measurements made in adjusted rubles in 1995 dollars is a good way to compare GDP and industrial growth between Russia and Sakha, but the technique overvalues these indicators especially before 1993. (see Table 4.1.) Between 1993 and 1994, the contributing factor to increased per capita GDP and industrial output, measured in current dollars, equaled the 54 percent increase of diamond exports. I have included a table in Appendix 2 of detailed information that compares the Republic of Sakha and Russian GDP and industrial output figures in current rubles and current dollars, as well as foreign earnings, personal income information for the Republic of Sakha. Table 4.1 was compiled from data in Appendix 2.

	1990	1991	1992	1993	1994	1995
Republic of Sakha GDP per capita (current dollars)	No information	$ 59	$ 795	$ 1,880	$ 2,432	$ 4,215
Russian GDP per capita (current dollars)	$ 723	$ 52	$ 308	$ 925	$ 1,160	$ 2,405
Number of times Republic of Sakha GDP is greater than Russia GDP (current dollars)	No information	1.12	2.58	2.03	2.10	1.75
Republic of Sakha GDP per capita (adjusted ruble values calculated as 1995 dollars)	No information	$ 6,090	$ 4,758	$ 4,502	$ 4,148	$ 4,215
Russian GDP per capita (adjusted ruble values calculated as 1995 dollars)	$ 3,912	$ 3,713	$ 3,158	$ 2,872	$ 2,504	$ 2,405
Number of times Republic of Sakha GDP is greater than Russia GDP (adjusted rubles)	No information	1.64	1.51	1.57	1.66	1.75
Republic of Sakha industrial output per capita (current dollars)	$ 603	$ 51	$ 506	$ 1,411	$ 1,426	$ 2,550
Russia industrial output per capita (current dollars)	$ 624	$ 44	$ 262	$ 590	$ 590	$ 1,261
Number of times Republic of Sakha industrial output is greater than Russia industrial output (current dollars)	0.97	1.17	1.94	2.39	2.41	2.02
Republic of Sakha gross foreign earnings, per capita (current dollars)	No information	No information	No information	$ 1,457	$ 2,210	$ 2,304
Republic of Sakha budget income per capita (current dollars)	$ 160	$ 151	$ 529	$ 728	$ 1,249	$ 772
Republic of Sakha budget expenditure per capita (current dollars)	$ 150	$ 147	$ 504	$ 718	$ 1,222	$ 1,147
Republic of Sakha budget surplus/deficit per capita (current dollars)	$ 10	$ 5	$ 25	$ 10	$ 27	-$ 375

	1990	1991	1992	1993	1994	1995
Republic of Sakha Budget Income	$175,700,000	$167,716,667	$577,628,946	$782,069,932	$1,324,817,029	$797,373,975
Republic of Sakha Budget Expenditure	$164,800,000	$162,513,333	$550,832,564	$771,481,157	$1,296,300,667	$1,185,077,519
Republic of Sakha Budget Surplus/Deficit	$10,900,000	$5,203,333	$26,796,382	$10,588,775	$28,516,362	-$ 387,703,544
Republic of Sakha population (persons)	1,098,900	1,108,600	1,092,500	1,073,800	1,060,700	1,033,300

SouRCE: LSE, various years; Goskomstat-Sakha, various years.

Table 4.1. Summary of economic indicators in US dollars, per capita, for the Republic of Sakha and the Russian Federation.

4.2. Dominant industries within the structure of the Sakha economy

The industrial sector is the greatest component in generating income and growth for the Republic of Sakha. The Sakha government estimates that industrial activity contributes 60 percent to GDP. Figure 4.7. compares Sakha's diamond industry, industrial output and GDP. The most important industrial activity is the mining of raw diamonds. As calculated by the Sakha government,[3] the diamond industry contributes 28 percent of Sakha's GDP. The diamond industry actually plays a greater role in generating income than is reflected in the calculation of its contribution to GDP, since diamonds are sold for currency and the Sakha government most likely over-values most of its other industries.

The Sakha statistical bureau also seems to under-value the gross earnings of the diamond industry, reporting only Diamond Russia Sakha Company's gross earnings and not funds received by the Sakha government's Committee for Precious Metals and Stones from diamond sales. This suggests that the diamond industry is under-reported by a third of its value, if the figures are compared to yearly diamond exports. The diamond industry represents 47 percent of all manufacturing and primary resource industrial output.[4] Figure 4.8. shows a breakdown of industrial output, by industry. Figures 4.7. and 4.8. illustrate the dominance of the diamond industry within the Sakha economy. Without the Diamond Russia Sakha Company, industrial output of the Republic of Sakha would have declined by 21 percent in both 1994 and 1995.[5] The diamond industry is also important because it is by far the largest earner of foreign currency. This issue is discussed in detail in Chapter 6.

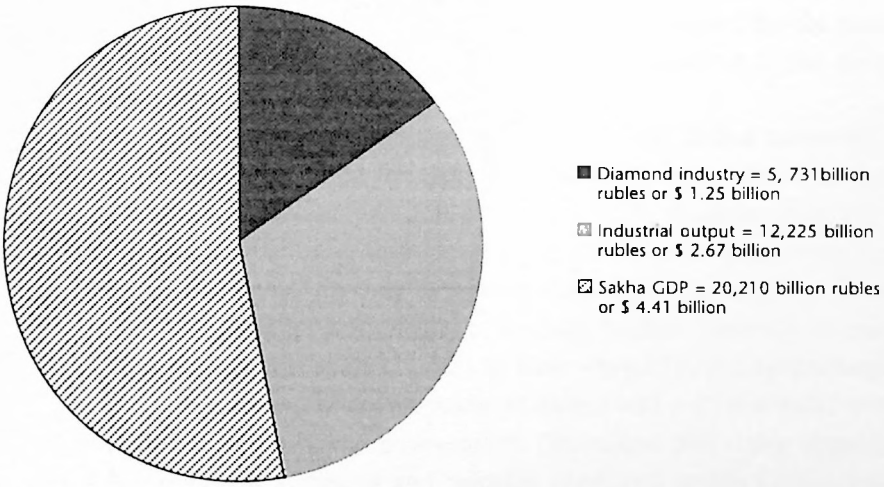


Figure 4.7. Value of Republic of Sakha's diamond industry, industrial output Gross Domestic Product (GDP).

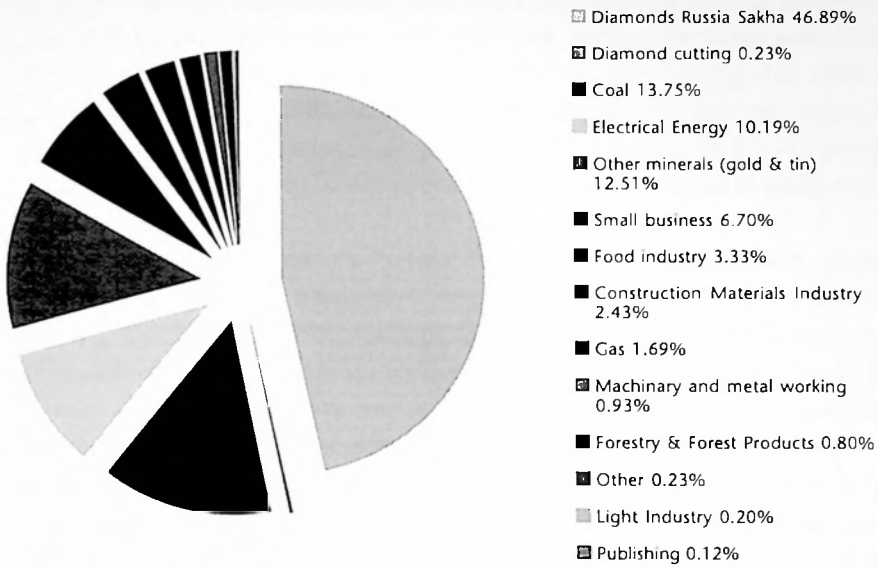


Figure 4.8. The share of diamond mining and other industries in industrial output (1995) for the Republic of Sakha.

Coal mining, gold and tin mining, the production of electrical energy and natural gas production are also important industries in the Republic of Sakha. These four industries combined, however, only add up to 38 percent of industrial (manufacturing and primary resource production) income. In addition, the four industries combined do not exceed the income generated by the diamond industry (47 percent) (see Figure 4.8.). The performance of these industries will be discussed in detail in Chapter 5.

The rural agricultural economy remains a vital part of the Sakha economy, even though it brings a small contribution to the Gross Domestic Product, relative to the diamond industry. Agriculture is currently a small part of the GDP, dropping from eight percent of GDP in 1992 to five percent in 1995 (see Figure 4.4.). This sector remains an important economic sector because it is vital for employment in rural areas. In addition, the agricultural sector is politically influential since many of the bureaucrats currently in charge of the Republic of Sakha have family ties in rural areas or have worked in the agricultural sector. For example, the current president of the Republic of Sakha was a former head of the Ministry of Agriculture under the Soviet government. Difficulties and rising costs in transportation means that the meat, potatoes and cabbage produced within Sakha continue to make up a significant proportion of the regional diet.

4.3. The Sakha Republic budget

Adjusted for inflation at current dollar values (calculated at average yearly exchange rate) the Republic of Sakha budget grew at a brisk rate from 1991 to 1994 (see Figure 4.9.,

p. 102). It grew over 200 percent between 1991 and 1992, over 35 percent between 1992 and 1993, and over 65 percent between 1993 and 1994. Within the same period the budget also reported a one to two percent budget surplus. The situation changed in 1995, when the budget income dropped by 40 percent, while expenditure only dropped nine percent. The 1995 budget expenditures are equivalent to about $1.2 billion, or $1,147 per capita. For comparison, the Russian government spent about $738 per capita in budget expenditures. (LSE, 1996, p. 122)

The difference between Sakha's income and expenditure in 1995 was financed by a $387 million deficit, and equaled about nine percent of Sakha's GDP. The 1995 budget had the first ever budget deficit for the Republic of Sakha. It is possible that the budget shortfall was covered by money borrowed primarily from federal government loans. Table 4.1. shows per capita measurement of budget income, expenditures and surplus/deficit and also shows the growth in expenditure and eventual budget deficit.

Both budget income and expenditures have contracted relative to Sakha's GDP when measured in current rubles (see Figure 4.10.). This shows that the Republic government is collecting less tax revenue and spending less, relative to previous years. One simple explanation may connect the massive tax breaks the Sakha government has given the diamond industry starting in 1995 to the subsequent lack of revenue. Given the recession in all other parts of the economy, it is also not surprising to see a decrease in tax revenue.

In general, the period of 1990 to 1991 was extremely turbulent for managing Sakha's budget. Since 1992, with the signing of the Russia-Sakha "federative agreement" almost all administration was devolved to the Republic level, with the exception of defense and foreign affairs. Even foreign affairs is no longer a complete monopoly of the federal government, particularly not foreign economic affairs. The Republic of Sakha has a Ministry of Foreign Affairs and a special government-controlled company called Sakhavheshstroi (literally Sakha Foreign Construction) that manages most large foreign contracts.

The relationship between Sakha and Russia did go through some dramatic posturing. The federal/regional battle included a refusal by the Russian federal government to pay Sakha the usual subsidies or grant "northern credit" for critical supplies, followed by Sakha's refusal to pass on collected tax revenue and withholding of diamond revenue as ransom for federal subsidies. Russia responsed by holding up permits to export diamonds. Since Sakha exports diamonds through Russian territory, Sakha backed down and a deal was negotiated.

The crisis is over momentarily, since the two sides realized that any fighting that influences the diamond industry may mean no revenues for either side. There is no guarantee that the deal between Russia and Sakha will last. This instability is fueled by the fact that factions exist on both sides who gain the most political or economic benefit from continued friction between Sakha and Russia. Factions of both sides have already accused each other of illegal activities, cheating and mismanagement.

Sakha has extremely valuable political assets with Russian and the Yeltsin government, since President Nikolaev of Sakha gave unwavering support to Yeltsin through the various political storms the Yeltsin government faced. President Nikolaev was the first leader of a former autonomous republic to champion Yeltsin during the 1993 October bombing of Parliament. Nikolaev was relatively uncritical of Yeltsin over the fiasco in the Chechen Republic. The rewards for Sakha for its close relationship with Yeltsin have been great. Yeltsin's influence was felt during the overall negotiations between Russia and Sakha. This is particularly important since several members of the Russian Parliament, in key committees, want Sakha's share in the diamond industry to be as small as possible. On a mundane level, I was told by a reliable source in the construction industry that part of the contract to rebuild the bombed Russian parliament building went to Sakha Foreign Construction Company. Supposedly, Sakha Foreign Construction Company made a windfall profit importing the Italian marble used to face the main part of the building's interior.

The political and economic changes between 1990 and 1995 are reflected in the great variation of income sources for the Sakha budget (see Figure 4.11.). The number of taxes increased significantly after 1992 when direct budget subsidies from the federal government disappeared after 1992. The Sakha government also collected a considerable portion of its revenue from renting Republic owned property to business and individuals between 1993 and 1994. Currently, the Sakha government's revenue comes primarily from profits tax, personal income tax, resource use fees (yearly flat fees), and value added tax (see Figure 4.11.). In comparison, in the Russian Republic budget, value added tax, profits tax and excise tax play a greater role, measured as a share of budget income, but personal income tax is not as important. (Minakir and Mikheeva, 1995, p. 69)

Sakha's mix in its budget expenditure went through significant changes between 1990 and 1995, but the result is that the budget mix made a full circle. The current 1995 budget expenditure is similar to the initial 1990 mixture of expenditure (see Figure 4.12.). Between 1991 and 1994, the share of government expenditure on social, cultural and science programs contracted, as did investment in the national economy. Beginning with 1994, that trend was reversed. In 1995, about 40 percent of budget expenditures were on social, cultural and science programs, and about 35 percent was spent on investments in the national economy, primarily on government support of state owned businesses. In comparison, Sakha spent more of its budget on the national economy and social, cultural and science programs than the Russian Republic. (Minakir and Mikheeva, 1995, p. 70) Government expenditure on government administration itself ballooned to eight percent in 1995 from less than one percent in 1992. A likely reason for this increase is the increase in the number of people working for the Republic bureaucracy.

The government actually controls a significantly greater amount of money than is reflected in the budget. The bulk of this "additional" money is primarily in the form of diamond revenues and "off-budget" funds from previous diamond earning windfalls, held in separate accounts.

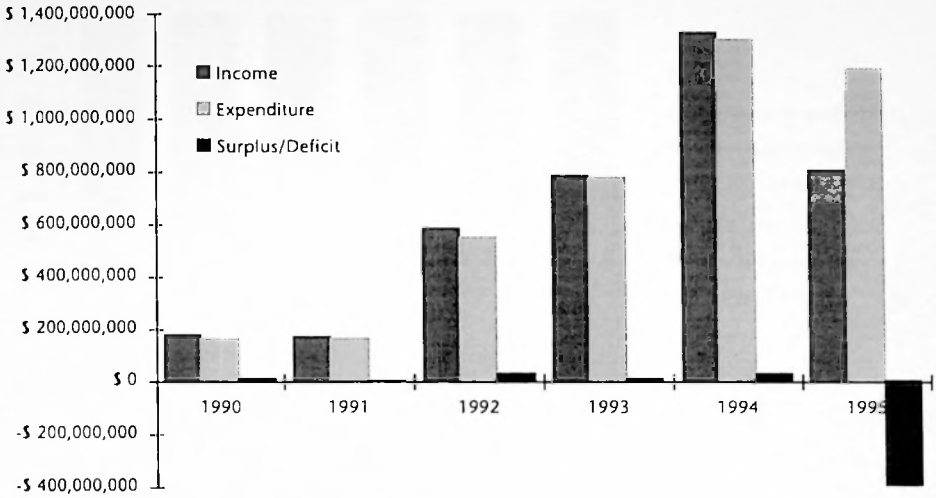


Figure 4.9. The Republic of Sakha budget (income expenditure and surplus/deficit) expressed in dollars at average yearly exchange rate.

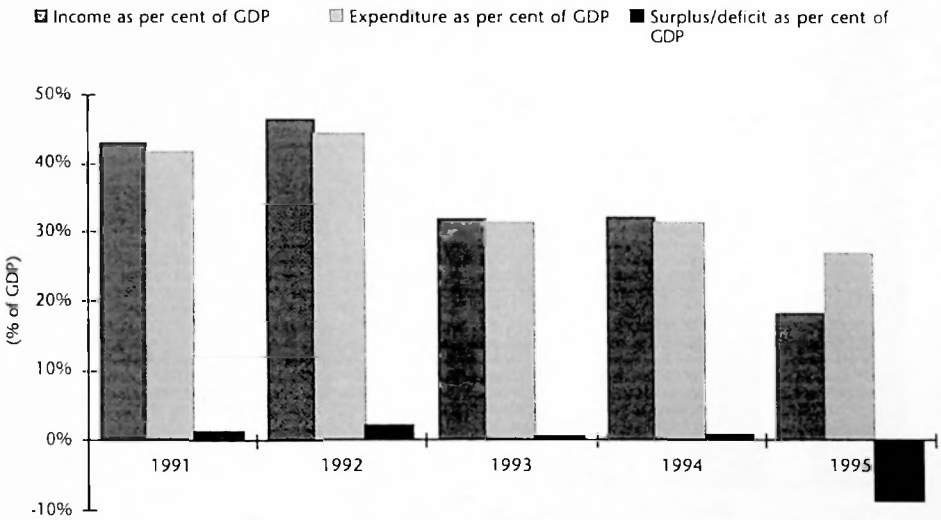


Figure 4.10. The Republic of Sakha's budget (income, expenditure and surplus/deficit) in terms of GDP for 1991 to 1995 (percent GDP), calculated at current rubles.

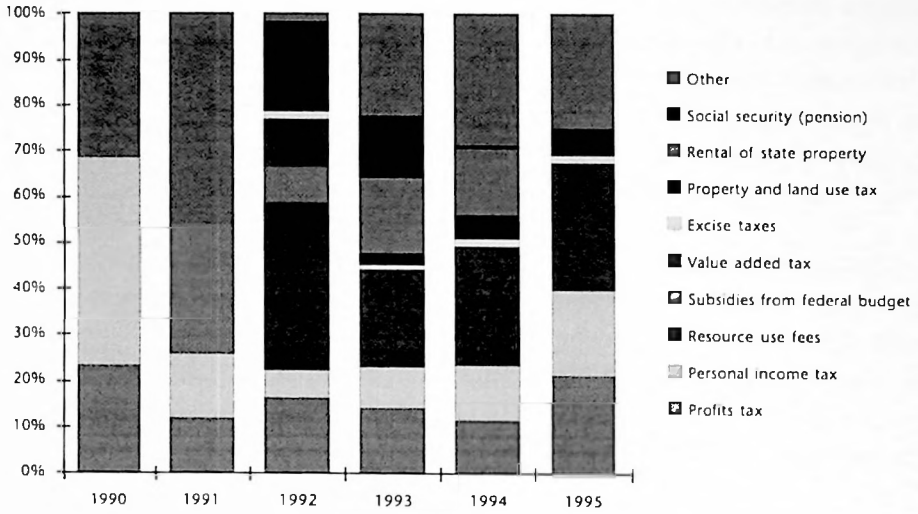


Figure 4.11. The changing mix of revenue (income) sources for the Republic of Sakha's budget.

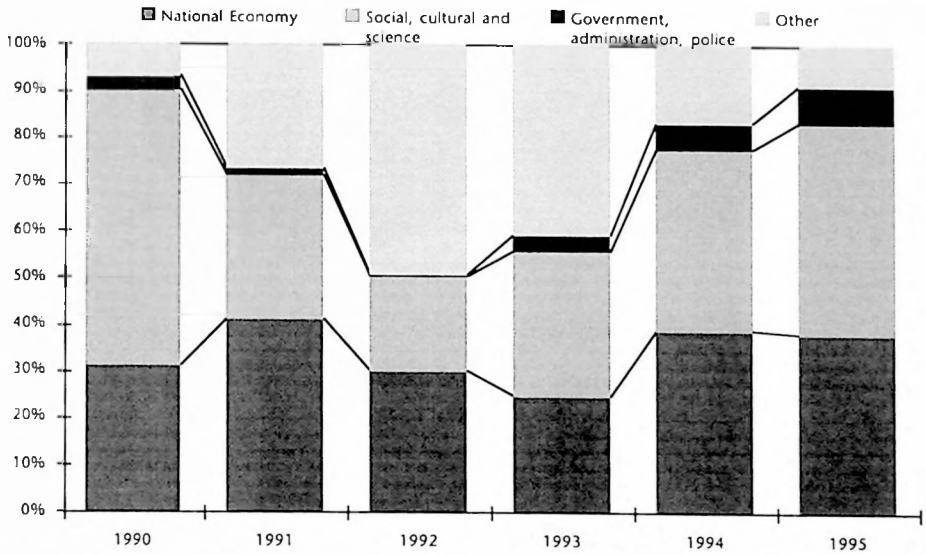


Figure 4.12. The changing mix of expenditure for the Republic of Sakha's budget 1990–1995.

4.4. Employment and Wages

Measurements of employment and wages give a different perspective to the Sakha economy. Basic industry plays a lesser role and other sectors are becomining of greater importance. In 1994, although basic industry represented 15 percent of the employed work force, it captured 25 percent of the gross wage. Figure 4.13. shows distribution of employ-

ment and wages by economic sector. The opposite is true for the government services sector and agricultural sector. The government services sector employed 21 percent of the labor force, but captured only 16 percent of the gross wages. The agricultural sector employed ten percent of the population, yet only captured seven percent of the gross wage. The government bureaucracy, construction sector, transport, banking and insurance are similar to basic industry and capture a greater percentage of gross wage than the percentage of the labor force these sectors represent.

Government bureaucrats made up three percent of the labor force and received five percent of the wage. Construction employees represented eight percent of the labor force and pocketed 12 percent of the gross wage, as did transport workers. Banking and insurance represented one percent of the workers, but earned two percent of the gross wage. Trade and services, captured only five percent of the wage, but they made up six percent of the labor force. The communications sector and the utilities and housing services earned a share nearly proportional to their share of the labor market.

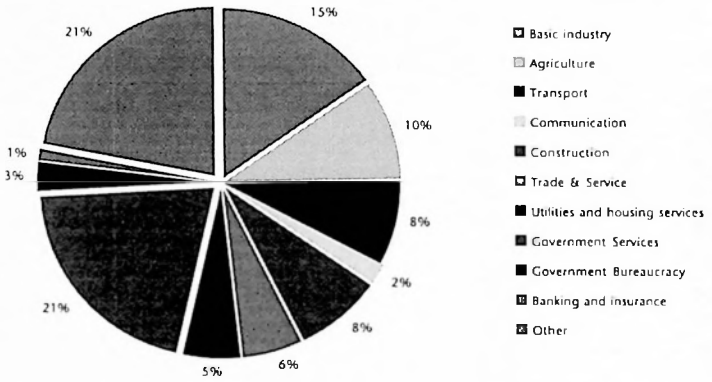


Figure 4.13a. Sakha employment by economic sector for 1994.

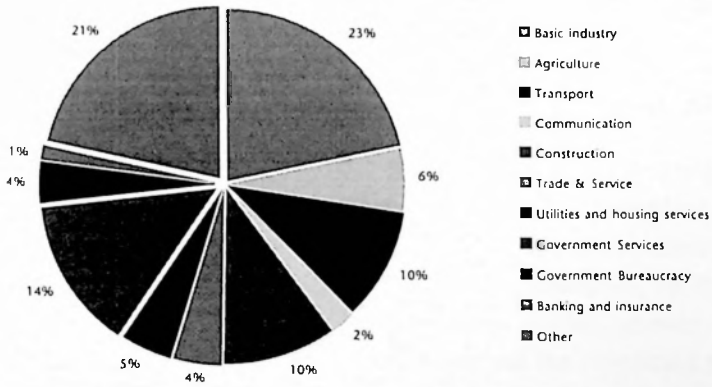


Figure 4.13b. Sakha gross wage by economic sector for 1994.

In general, between 1991 and 1995, employment within the Republic of Sakha has decreased proportionally to the decrease in the population. This is well illustrated by Figure 4.14., a bar graph showing the decrease in population and the overall labor force. Agriculture, which is not reflected in the Sakha-wide employment data, is a leading employer of the Sakha[6] and other non-Russian indigenous people. In general, indigenous people who do not work for government or hold a professional position are likely to work in the agricultural sector. Currently, there are no data available on the ethnic composition of the labor force, but in 1958 Yakuts (Sakha) only held four percent of the jobs in industry.[7] (Yegorov, 1962, p. 48) The dilemma in decreasing employment in the agricultural sector is that the Sakha and other non-Russian indigenous people who lose their jobs as agricultural workers do not have the same opportunity to return to their "homeland," like most Russians and Ukrainians. In other words, a decrease in employment in the agricultural sector is most likely to result in unemployment rising in Sakha.

Figure 4.14. Employed population and the entire population 1991–1995.

A comparison of employment in 1970, 1980, 1990 and by economic sector, shows a general increase in the number of people employed until 1991, followed by decrease in most sectors of the economy. (see Figure 4.15.) Significant decreases occurred in employment in following sectors: construction, trade and services, transport, agriculture, basic industry, utilities and housing services, education, culture, art and science. Science underwent the single most dramatic decrease in employment, yet the combined effect of jobs lost in all sectors is the greatest blow to the labor market. Government administration, banking and insurance were the only sectors to experience an increase of jobs after 1992. In addition, there was an increase of people working in new, unclassified jobs that did not fit

standard statistical classifications. It is likely that many new entrepreneurs fell into the other category.

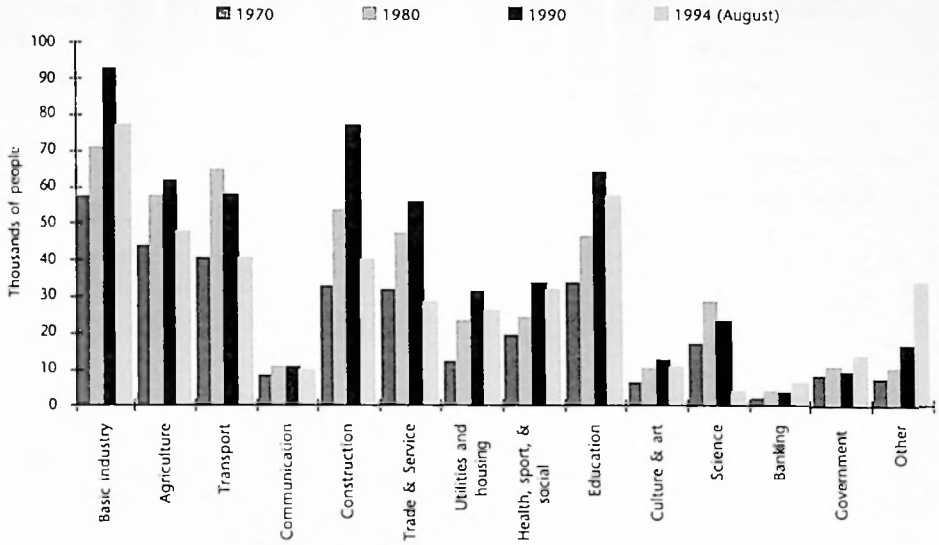


Figure 4.15. Employment (thousands of people) by economic sector 1970, 1980, 1990 and 1994.

The most remarkable trend in the structure of employment within Sakha is the relative stability from 1970 until 1994, considering the overall economic changes after 1991 and the number of jobs lost within that time. Figure 4.16. shows employment by economic sector as a percent of total employment for the years 1970—1994. The percentage of jobs among the various sectors stayed relatively steady or the contraction of the labor market was generally the same across all sectors. The exceptions were a noticeable fall in the construction sector and the trade and services sectors, and a small rise in the basic industry sector and people working in jobs classified as "other." Again, this can be explained by the small influx of new "post-Soviet" jobs that were likely to be classified as "other." Employment for people who do not leave the Republic of Sakha is a priority for the Sakha government, and, for the most part, the government is successful in maintaining this stability in the labor market.

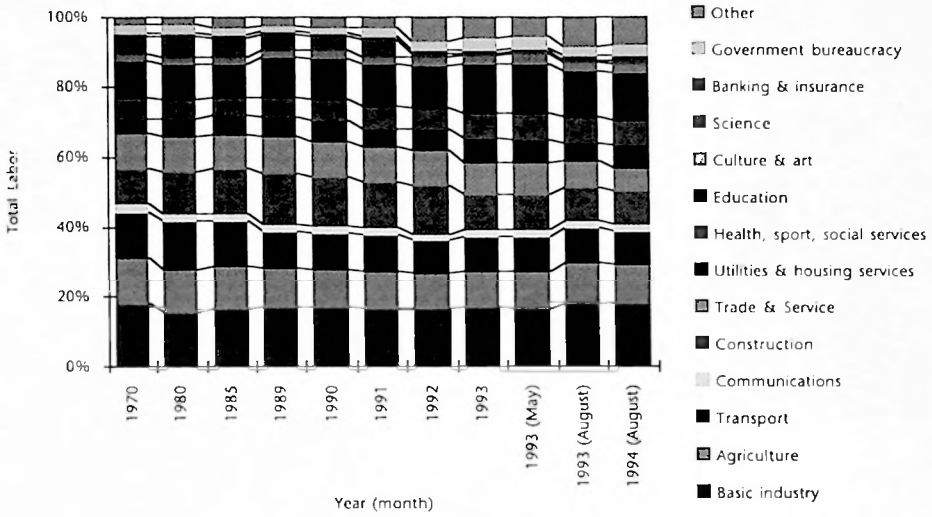


Figure 4.16. Employment by economic sector as a percent of total employment, 1970–1994.

Sakha's real wages compared well to other regions of Russia and the Russian Far East. Sakha has always had high wages and only in the last three years have Kamchatka and Magadan had higher real wages. Figure 4.17. shows average wage per month for Republic of Sakha, the Russian Far East and Russia-wide. In 1995, Sakha had the second highest wages, slightly lower than Kamchatka Province. Sakha's real wages were about a third higher than the Russian average in 1994 and about double the Russian average in 1995. The overall average wage in Sakha for 1994 and 1995 was between $200 and $250 per month, calculated at the current exchange rate.

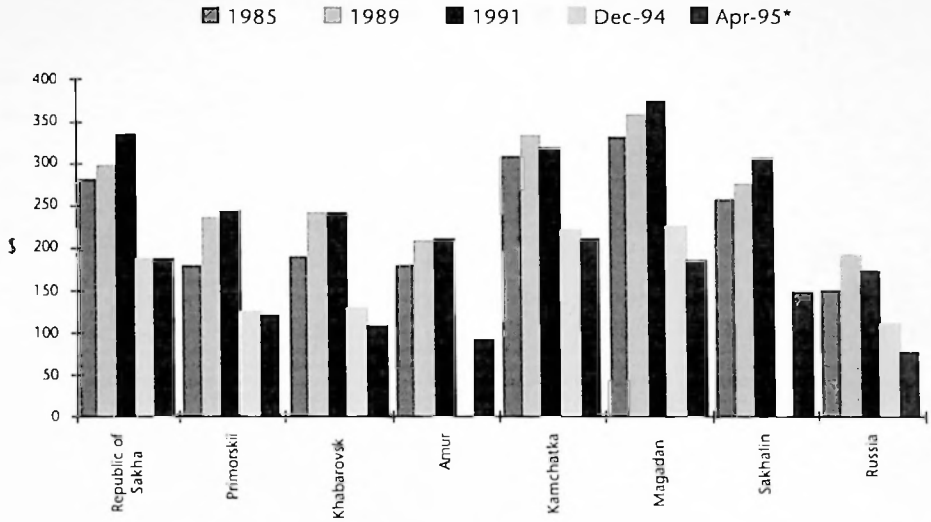


Figure 4.17. Average wage per month in 1990 dollars for the Republic of Sakha, the Russian Far East and Russia for 1985, 1989, 1991, December 1994 and April 1995. (*April 1995, the Russian ruble hit an exchange spike and then recovered, so that real wages also recovered to December 1995 levels by January 1996.)

Wages, as measured in current dollars, dropped slightly between 1989 and 1994. This fall in wage does not lend itself to any significant conclusions, since ruble prices were largely controlled for most goods and services prior to 1992. Figure 4.18. shows real average wages for the main economic sectors within Sakha. Interestingly, wages measured in current dollars show the greatest drop between 1989 and 1995 in the agriculture sector (see Figure 4.18.). Since 1994, the trends indicate that wages are growing across the board within Sakha. The opposite is true in Russia, where real wages dropped in the beginning of 1995 to below the 1992 level. (OECD, 1995, p. 19) It may be that the Russian government changed the way it deflated Russian real wages after 1994, and used deflators to take into account purchasing power. While appropriate for deflating personal income and expenditure indicators, it leads to confusion in comparing real wages across time. The Russian government also makes it difficult to compare real wages between regions, since it is impossible to tell whether wage statistics are adjusted or unadjusted.

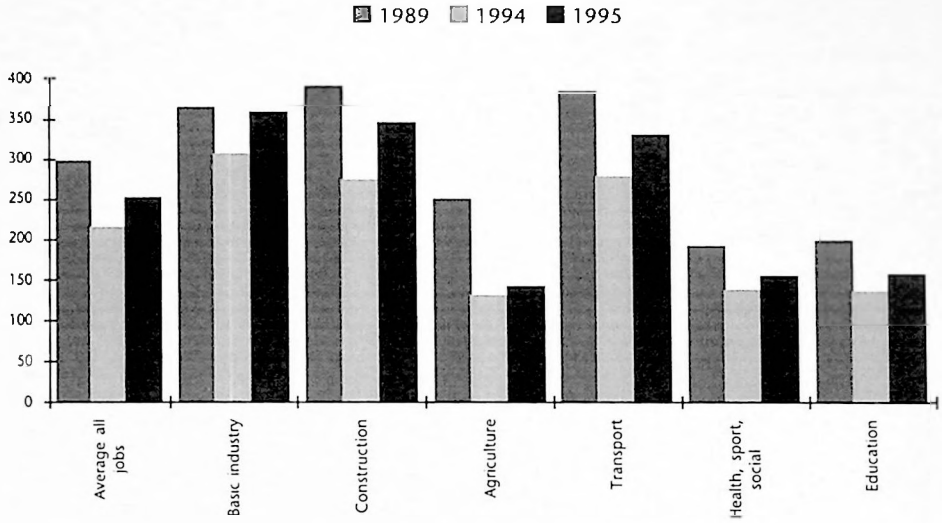


Figure 4.18. Average wage measured in current dollars for main sectors of the economy in 1989, 1994 and 1995.

A comparison has already been made between the percentage of people employed by economic sector and the gross wage of each economic sector (see Figure 4.13.). Since 1970 to 1994 the share in the gross wage between economic sectors followed, to a great extent, the change in the share of people employed amongst the sectors (see Figure 4.16). Two sectors, agriculture and education, are significantly under-represented in the gross wage, relative to the sector's shares in overall employment. This is illustrated in Figure 4.19., the share of gross wage by sector. Basic industry took almost a quarter of the republic's gross wage in 1994.

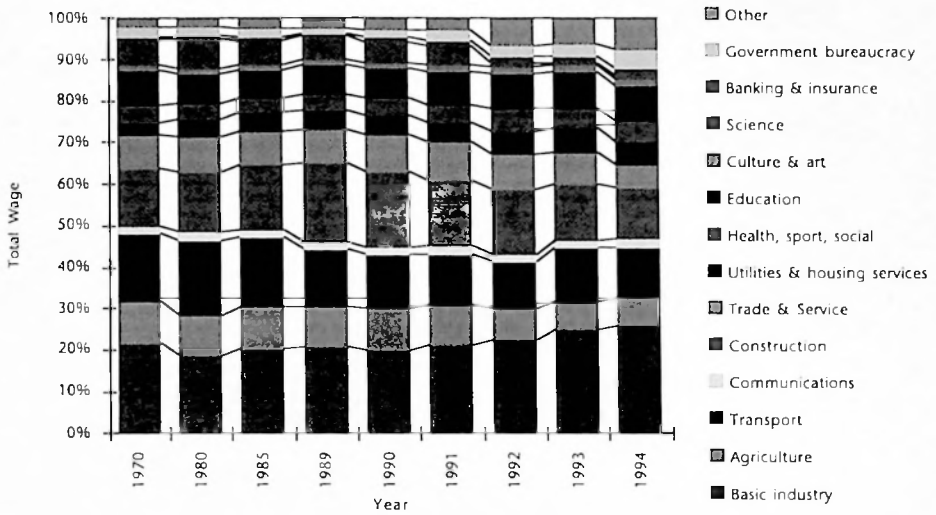


Figure 4.19. Gross wage by economic sector as a percent of total gross wage, 1970—1994.

Basic industry average wages were higher than any other sector in 1994 and 1995 (see Figure 4.18.). Basic industry wages in 1995 ranged from about $140 a month, average for light industry, to over $400 a month average, for jobs involved in the mining and oil and gas extraction sectors. Table 4.2. compares wages within the basic industry sector measured at current dollars. Between 1994 and 1995 the "real" wages, measured at current dollars rose. Within the industry sector, the largest percentage (48 percent) of total wages is taken up by the diamond, gold and tin mining industry, with the largest percentage of workers (43 percent) and the third highest average monthly wages. Figure 4.20. shows the distribution of Sakha's employment by economic sector and gross wage within the basic industry in 1995. Resource extraction (diamond, gold, tin mining, coal mining, and oil and gas extraction) makes up 81 percent of the gross wages earned in basic industry, 58 percent of the labor force and the highest category of average monthly wage. The electrical energy sector also earns a large share of the total basic industry wage, 20 percent, and constitutes 18 percent of the labor force.

Industry	1994	1995
	monthly wage ($)	*monthly wage ($)*
Coal	$341	$434
Oil & Gas	$272	$431
Mineral (diamonds, gold, tin)	$294	$420
Electrical Energy	$282	$412
Basic industry average, excluding small business	$269	$386
Machinery and metal working	$241	$354
Typography	$233	$317
Construction materials Industry	$191	$314
Other industry	$190	$285
Food Industry	$184	$272
Forestry products	$132	$190
Light Industry	$105	$139

SOURCE: Goskomstat-Sakha, 1995b, pp. 11-12, Goskomstat-Sakha, 1996b, p. 24.

Table 4.2. Comparison of wages within the basic industry sector measured at current dollars.

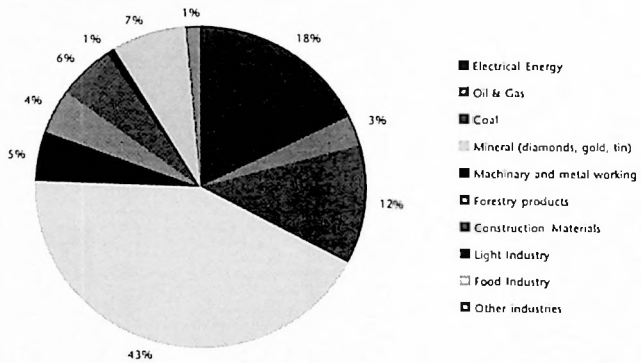


Figure 4.20a. The distribution of Sakha's employment by economic sector within the basic industry in 1995.

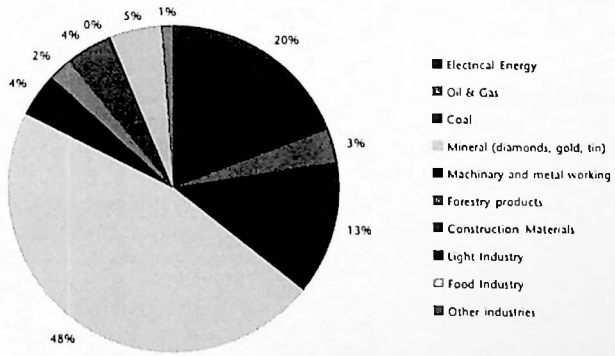


Figure 4.20b. The distribution of Sakha's gross wage within the basic industry in 1995.

Unemployment is increasing within Sakha, but not as rapidly as the number of jobs are declining (see Figure 4.14.). Many people are simply leaving the Republic of Sakha. Sakha has the lowest unemployment figures of any region in the Russian Far East. (Minakir and Mikheeva, 1995, p. 131; Hanson, 1994) The actual unemployment figures are difficult to determine, since the Sakha statistical office has several categories for listing the unemployed. These are people of working age "not employed," "officially unemployed," and those "registered unemployed." These estimates are compared in Figure 4.21. and make up between one and ten percent of the eligible working population. Throughout Russia, unemployment levels are thought to be, "misleadingly low ..." (OECD, 1995, p. 18) and are considered to be this way either because of a lack of restructuring in the economy, or a flexible absorption of labor from industry to service. It is most likely that within Sakha low unemployment is a reflection of the lack of economic restructuring, since the service sectors of the economy has contracted significantly. Furthermore, it may be that unemployment is simply masked by the government's newspeak. Whatever the measurement, unemployment continues to rise, as is evident between 1994 and 1995 in Figure 4.21. The "official" and "registered" unemployed are also increasing continuously every month, as reported by the Sakha government (see Figure 4.22.).

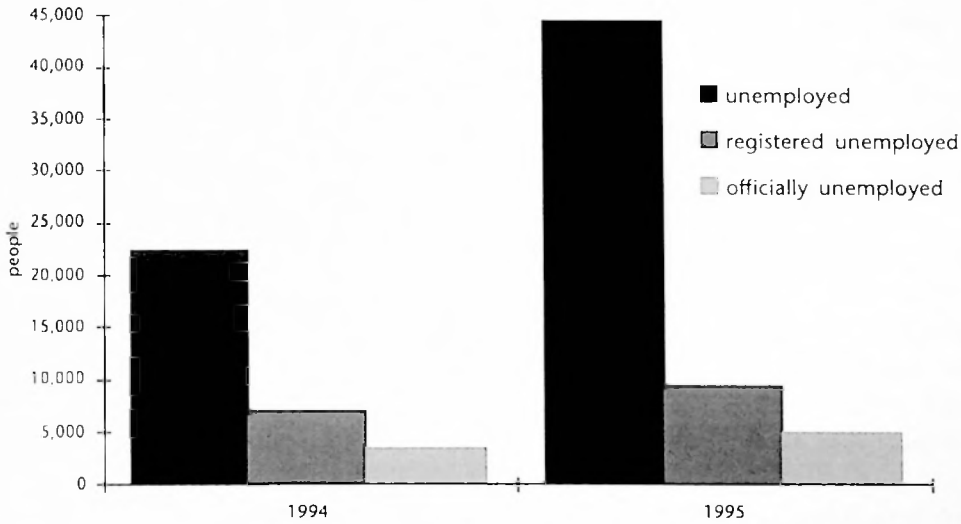


Figure 4.21. Measures of unemployment by the Sakha government, based on the actual number of persons.

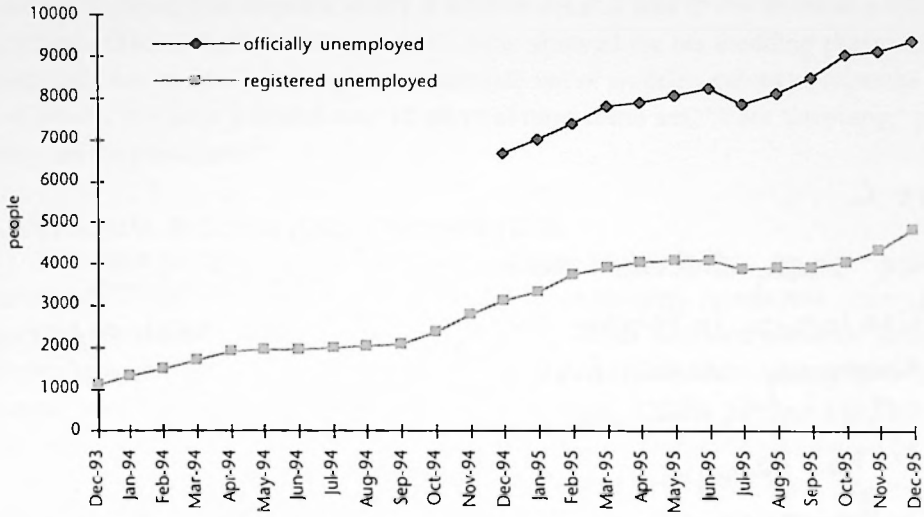


Figure 4.22. Monthly numbers of officially unemployed and registered unemployed, as reported by the Republic of Sakha statistical office from December 1994 to December 1995.

Wage arrears are a problem for the Republic of Sakha, as in all of Russia. Wage arrears are closely linked with unemployment. To a large extent, wage arrears is a method by which the Russian and regional governments can lower the unemployment figures. People who cannot find work elsewhere continue to hold jobs that do not pay them for months. These people are still considered a part of the labor force, even though they may not bother to go to work.

In Sakha, the arrears are considerably less prevalent, since the republic government controls a large part of the financial system, unlike other regions in Russia, which rely on the federal government for wage payments. The federal government has also used wage arrears mercilessly as part of an unofficial policy to control the money supply, and, subsequently, the problem of rampant inflation. To the Russian government's credit the draconian policy did produce results and inflation is significantly diminished. Much of Russian foreign aid is made dependent on targeting inflation.

The Russian government has been conscientious about sending pensioners their pensions, to garner their votes. In rural areas, where unemployment and wage arrears of up to a year have left households with no source of cash, pensioners have ended up as the chief support within village families. In the rural areas of Sakha wage arrears have forced a greater reliance on the informal market and bartering.

In 1993, the general decline in the number of farm animals may be related to the process of transferring ownership to private hands, when much of the privatized livestock went under the knife almost immediately to provide cash. Villagers, during times when wages were held up by government for sometimes up to a year, would find that a cow or a

Insert C

This study did not take into account consumer price levels in relation to income. Price levels differ enormously accross Russia. Yet, it should be noted that in Sakha, wage arrears were avoided by the Republic government to a greater degree than most areas of Russia. This means that, in many cases, income figures for most of Russia represent intended income, while in Sakha it represents actual money received.

horse could bring several months salary if sold for meat. I was in the home of a village agricultural worker outside Yakutsk in 1993, who showed me his wedding present for his son and daughter-in-law. He bought an elaborate set of wooden cabinets, from the western part of Russia, that held a brand new 12 place setting china set, "from Germany," paid for by "the cow we privatized."

4.5. Personal Income and Expenditure

Per capita personal income in Sakha was over $2,000 dollars per year in 1995, based on the current exchange rate, and has been consistently on the rise since 1991 (see Figure 4.23.). Over the last five years, 1990 to 1994, dollar adjusted personal income rose more than three times, as shown in Figure 4.23. The Russia-wide tendency is to have an increasing personal income, and a decreasing real wage. (OECD, 1995, p.19) This "contradictory" effect within Russia is explained either by a poor calculation of wages by the Russian statistical office or a growth in non-wage income. In Sakha, both wages and personal income are rising, as is the percentage of non-wage income (see Figure 4.23. and Figure 4.24.). Figure 4.24. shows personal income by source from 1990 to 1995, as a percentage of personal income. Wages make up the largest portion of personal income, although dropping from over 70 percent to about 65 percent between 1994 and 1995. Since 1990, wage constituted 70 and 80 percent of all personal income. Pensions and subsidies, like student stipends, are the second most important contributor to personal income, at over ten percent of the total. This indicates that the social welfare net is an important priority to the Sakha government. Profits and dividends made up ten percent of personal income in 1991, which could be explained as a temporary phenomenon related to the privatization process, and also in 1995, which may actually indicate a new trend in the make-up of personal income. In 1992 through 1994, profits and dividends contributed a few percent to personal income.

Neither Sakha nor Russia really measures disposable income, because of the manner by which it measures personal expenditure (see Figure 4.25.). For example, savings deposits and securities purchases are included in Russian calculations of personal expenditure. Rather, the statisticians themselves admit that their measure of disposable income is really "cash in hand." What is relevant, is that the measurement of cash in hand (income minus expenditure), rose throughout the 1990s, despite the general complaint by people that they had a hard time saving any money. The general attitude and disappearance of savings and securities purchases is probably linked with the high rate of inflation between 1991 and 1995.

Purchases of goods and services make up the bulk of personal expenditures, over 60 percent in 1995 (see Figure 4.25.). Taxes take only about ten percent out of personal income. Savings deposits and securities deposits decreased from over 15 percent as a share of expenditure in 1990 and 1991 to less than five percent expenditure in 1995. Most interesting, is that in 1990 and 1991 about ten percent of personal expenditure was money

transferred outside the Republic of Sakha, which decreased in 1992 and 1993. The simplest explanation relates to the large emigration of the population and labor force, followed by relative stability in the population. In 1994 and 1995, money transferred outside Sakha increased to an even greater proportion of personal expenditure. This does not relate to any increase in the rate of emigration from Sakha. An explanation may be that money being sent out of Sakha is being invested in Russian goods, services or investments or being sent abroad. Alternatively, Russians living within Sakha may be sending the higher wages they earn to relatives from their original home regions.

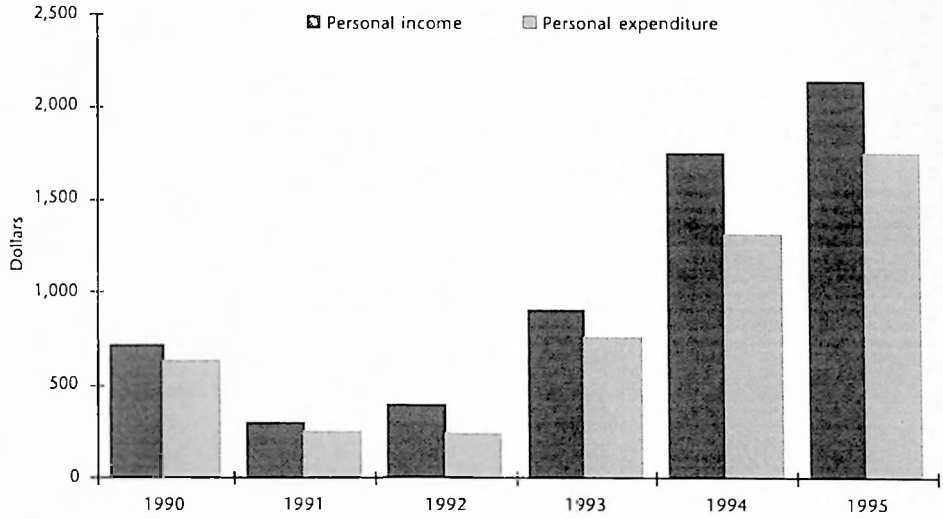


Figure 4.23. Real Sakha personal income and expenditure 1990–1995.

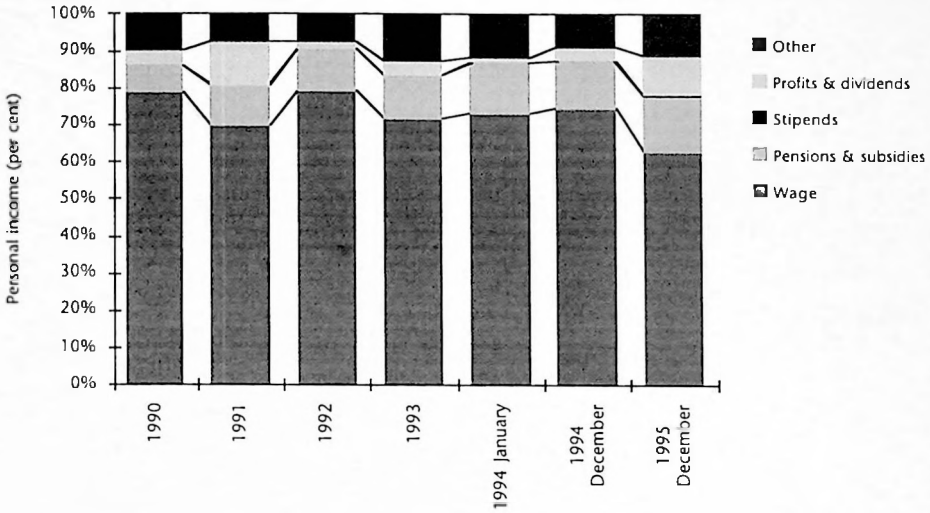


Figure 4.24. Sakha personal income by category.

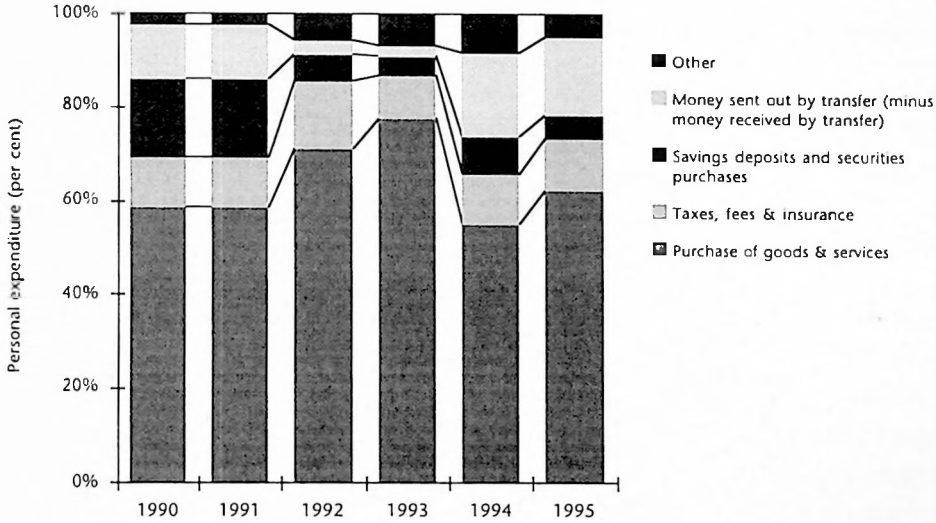


Figure 4.25. Sakha's personal expenditure by category.

One thing is clear in Sakha, that the price level for consumer and food goods is rising at a significantly faster rate than personal income. The Sakha government controls the prices on some basic food stuffs and provides credits for certain individuals (pensioners, mothers, children). It is not clear whether these subsidies are taken into account when the price level is calculated.

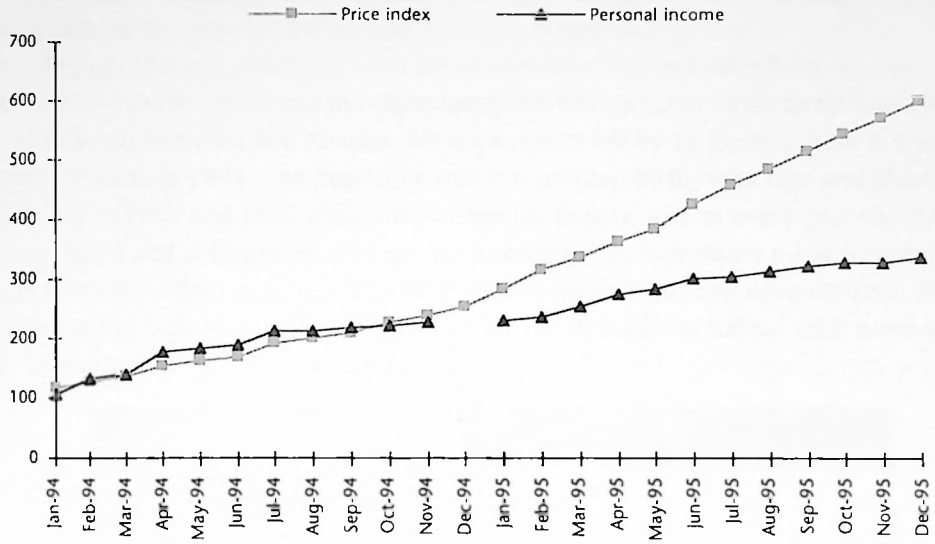


Figure 4.26. The price level for consumer and food goods and level of personal income.

Income distribution in Sakha is becoming increasingly inequitable, at a relatively rapid rate compared to the rest of Russia. According to the Sakha government the 1995 Gini coefficient was 0.455, compared to a Gini coefficient of 0.402 in 1994.[8] This means that about 20 percent of the population controls at least 50 percent of the income. (OECD, 1995, p. 122) For comparison, Russia had a Gini coefficient of 0.412 in 1994, while the Gini coefficient for Russia in 1991 was 0.256 and was likely typical of the whole country including the Republic of Sakha at the time. (OECD, 1995, p. 123) Some income factors that are unaccounted for might mean that in the Republic of Sakha income distribution is even more inequitable than currently reported. There is certainly a great incentive not to report income or to under-report income. Over the course of 1993 to 1994, I taught about 120 business people in Yakutsk as part of an American small business development training program. It was widely accepted, and often joked about, that in the small and medium private business sector, only the minimal income is ever reported. In larger businesses, as they are privatized and auctioned off, managers are said to be careful not to appear to take directly large blocks of stock. Instead, they supposedly arrange stock purchases and transfers to members of their family or friends who hold these shares for them.

4.6. Quality of Life

As in Russia, the Republic of Sakha is undergoing a dynamic social and economic change reflected in the basic indicators of the quality of life. Also as within Russia, the basic indicators of the quality of life are deteriorating. The only difference is that Sakha's basic indicators are not deteriorating as greatly as the Russian average. Sakha has traditionally

had "lower" basic indicators than Russia. Therefore, the current trend is that the differences in the quality of life between Sakha and Russia is disappearing.

Average life expectancy for both sexes combined fell in Sakha from 66.6 years in 1990, to 63.6 in 1993. In Russia life expectancy fell from 69.0 in 1990, to 65.1 to 1993. The difference between Sakha and Russian life expectancy fell by 26 percent from 2.4 years in 1990 to 1.5 years in 1993. The mortality, infant mortality, birth, marriage and divorce rates were higher in 1990 and 1993 than the average for Russia, and in every case the difference between Sakha and the Russian average is narrowing. There remains a significant difference in mortality, infant mortality and birth rate between rural and urban Sakha. Table 4.3 is a summary of indicators of living standard for the Republic of Sakha, with some Russia-wide comparison.

	Russia 1990	Russia 1993	Sakha 1990	Sakha 1993	Sakha 1995
Life expectency at birth					
• Both sexes (years)	69.0	65.1	66.6	63.6	
• Men (years)	63.5	58.9	62.0	58.2	
•Women (years)	74.3	71.9	71.3	70.0	
Mortality (per 1000 inhabitants)					
• Total	11.2	14.5	6.8	8.8	9.8
• Urban			6.1		
• Rural			8.1		
Infant Mortality (per 1000 live births)					
• Total	17.4	19.9	19.9	21.8	19.2
• Urban			19.1		
• Rural			21.1		
Birth rate (per thousand inhabitants)					
• Total	13.4	10.8*	19.6	15.7	15.5
• Urban			16.6	12.7	
• Rural			25.6	21.4	
Marriage rate (per 1000)	8.9	7.1*	10.5	8.5	8.0
Divorce rate (per 1000)	3.8	4.3*	4.6	4.8	4.5

*for 1992

SOURCE: Russia: OECD, 1995, pp. 123, 129 from Russian State Committee for Statistics; Goskomstat-Sakha, 1994a, pp. 31–34.

Table 4.3 Summary of indicators of living standard for the Republic of Sakha, with some Russia-wide comparison.

Meat, milk, bread and potatoes are the main food for most people in Sakha.[9] Since 1990, official figures report the decrease in consumption of all food groups, except bread, which increased by 18 percent. This is most likely related to the increase in all food prices, compensated by increased consumption of a cheap staple (what economists call an inferior

good). Fruit and berry consumption, egg consumption and vegetable consumption all decreased by more than 40 percent. Meat and milk consumption only decreased by about ten percent, less than the drop in potato consumption (about 20 percent).

Over 16,000 tons of meat are sold through the government market system, and much more is sold and distributed through local and family connections. As soon as the river freezes in October, and the ice roads are put in place, the people of Yakutsk begin to buy or receive meat from the villages. Since the temperature stays below freezing until May, city people store the meat on the balconies of their apartments.

The food sales are definitely undercounted in the official statistics. The most obvious undercounted product is meat. Meat is one of the staples of unofficial trade between the villages and relatives, friends and acquaintances of the villagers that live in larger settlements, like Yakutsk. For the most part, it seemed that mostly Sakha and non-Russians are involved in this kind of trade, since they have the most connections in the villages. I monitored at first hand the system of private meat sales the government does not count in its statistical information.

During the autumn of 1993 in Yakutsk, I was a partner in a private meat selling operation. With the help of a local friend, I was able to buy several sides of horse meat and beef in the villages, throughout the fall and winter, at prices one quarter of Yakutsk market price. Meat is ordinarily purchased in grocery stores or at the city market. For our meat-sale enterprise, my job was to arrange transport and provide cash to purchase the meat, usually an amount equivalent to two month's salary in Sakha during a period of high inflation (from $100 to $400). My partners then offered the meat for sale at half market price to fellow workers, friends and acquaintances.[10] The meat was sold primarily to people who had access to some other goods that we could then purchase at a reduced market price (cabbages and potatoes, for example). Our primary goal was to cover the cost of our own meat, which we did. Most of our sales were made to non-Sakha (mostly Russians), who ordinarily bought meat at the city shops. Two notable exceptions were one female Sakha pensioner whose husband died several years earlier, and a Sakha woman who was separated from her husband. One Sakha man in Yakutsk laughed when we offered to sell him horse meat, saying, "I am a Sakha. Of course, I have already obtained my own store of horse meat for the winter." Other than the fact that I was an American involved in this kind of trade, our activities were definitely not considered unusual in any way.

The population relies heavily on outdoor cold storage, and most people do not own ice cellars or have access to large commercial freezers. The price of meat increases significantly in June until October when outdoor temperatures are above freezing. For example, I was surprised at the great demand for three freshly butchered reindeer carcasses I brought back to Yakutsk from the rural taiga in mid-June, that would have had moderate demand in January.

In 1993, reindeer tongue and heart were the only parts of an animal that had a different price from the rest of the animal (40,000 rubles per kilogram rather than 10,000

rubles per kilogram). Unlike the West where different cuts of meat dictate different prices, the price of meat is usually the same regardless of the cut. Often the consumer is at the mercy of luck as to which cut of meat he receives in stores.

	Russia 1990	Russia 1994	Sakha 1990	Sakha 1994
Meat and meat products (kg)	69.0	53.0	66.0	57.6
Milk and milk products (kg)	386.0	278.0	334.8	301.2
Eggs (number)	297.0	234.0	240.0	120.0
Fish and fish products (kg)	20.3	10.0	14.4	8.4
Sugar and confectionery (kg)	47.2	31.0	28.8	21.6
Vegetables (kg)	89.0	65.0	58.8	34.8
Fruit (kg)	35.0	29.0	28.8	13.2
Bread and bread products (kg)	119.0	124.0	76.8	91.2
Potatoes (kg)	106.0	122.0	76.8	60.0

SOURCE: Sakha: GOSKOMSTAT-Sakha, 1995a, p.87; Russia: OECD, 1995, p. 124.

Table 4.4. Consumption of selected food items for the Republic of Sakha and Russia, 1990 and 1994 (physical quantities, per capita).

Sakha has a relatively well-educated population and work-force, higher than the Russian average. A greater percentage of Sakha population complete secondary school compared to Russians.

	All levels of education	Higher	Secondary and incomplete higher	Incomplete secondary
Per 1000 people 15 years and older (1989)				
Russia	806	113	483	210
Far East	877	125	542	210
Republic of Sakha	899	113	624	162
Per 1000 in labor force (1989)				
Russia	915	146	591	178
Far East	941	153	616	177
Republic of Sakha	952	134	700	118

SOURCE: Minakir, 1994, p. 292.

Table 4.5. Education

One significant quality of life factor in Sakha that is only beginning to be assessed and studied, is the natural environment. Sakha faces several major issues. First, as a region

that relies principally on non-renewable resource development, it needs to focus on current issues related to reducing damage to the natural environment, to address inefficient resource depletion and to manage externalities that harm the environment and quality of life. Second, Sakha has been left with a legacy of environmental damage and environmental problems that persist as factors which reduce the health and welfare of the citizens. Third, a large part of the population lives a traditional, rural lifestyle, primarily raising livestock (cattle and horses) or reindeer herding. The continued existence of the culture relies on a close and active interaction with the natural environment.

Sakha has a series of very serious environmental problems. They include:

- Pollution from diamond, gold, uranium, coal and tin mining: primarily the presence of sediments and heavy metals in the water systems. (Core, 1994)
- Poor agricultural practice and concentration of the human population along river valleys which has resulted in salinized soil and water pollution from fertilizers and human waste. (Core, 1994)
- A hydroelectric project where vegetation was not cleared prior to flooding the reservoir which has resulted in phenol pollution in a major tributary of the Lena River, one of the largest sources of fresh water to the Arctic Ocean. (Core, 1994)
- Poorly executed nuclear explosions used for industry (diamond mining, dam building and the oil and gas industry) in Russia's "atoms for peace" projects. Two of the twelve explosions in Sakha "cratered" and released radiation into the atmosphere. (Core, 1994) These blasts varied from 1.7 kilotons to 22-kilotons. (Burtsev, 1993, p.250)
- Atmospheric nuclear fallout from Novoyaya Zemlya testing site in the 1980s. The USSR waited until wind directed fallout to Sakha rather than Europe or North America. (Core, 1994)
- Toxic problems from rocket fuel that was dumped in Sakha, since Sakha was used as a drop zone for Russia's Kazakhstan-based space program. (Core, 1994 and Nikolaev, 1994, pp. 40–41)

Local villagers, local NGOs and small businesses are making an effort to address these environmental problems, but need assistance and training in creating a system to assess environmental quality. Many of these local NGO leaders are non-scientists and are novice politicians who are trying to maintain environmental quality within the political and economic framework.

The Vilyui River basin is the Republic's area of greatest concern as environmentally related health risks are found here in great concentration. (Core, 1994) The primary NGOs in Sakha were formed to tackle health problems caused by environmental pollution, monitor the Lena River Basin (the sixth largest river in the world which flows into the Arctic Ocean) and implement western health and environmental risk assessment. Money, however, is the real hurdle, especially after the United States Agency for International Development" reneged on financing a Sakha environmental program and redirected funding to European Russia. The most difficult environmental problem is probably the residual radiation from peaceful atomic explosions, because of the long time needed to make some of the areas safe.

4.7. Some important regional differences within the Republic of Sakha

Just as the Republic of Sakha is an example of the variety of regionalism within Russia, the Republic of Sakha itself faces regionalism within its borders. Looking at per capita industrial output and per capita income for the 35 counties within the Republic of Sakha reveals some interesting regional differences. Figure 4.27. compares industrial output and per capita income for all 35 counties of the Republic of Sakha. First of all, the difference in the rural/urban split is shown to be quite pronounced in terms of where the money within the economy is generated. By a large margin the Mirnyy region, the diamond-producing region, generates a lion's share of the industrial output per capita and the largest income per capita. Seven other counties earn a large per capita industrial output. Yakutsk, the Republic's capital; Neriungri, chief coal mining district; Aldan, a gold mining district; Oimyakon, a gold mining district; Tomponsk, a center for transport; Ust Maisk, a gold mining district; and Ust-Yansk, tin mining district.

In general, the areas that produce the highest industrial output per capita also have high per capita income. The exceptions are the Bulun and Verkhoyansk regions which have high per capita incomes. In comparing the per capita industrial output and income with the regional changes in population (Figure 2.15.), it seems that those regions with the highest per capita industrial output and some of the highest incomes per capita are also the regions with the highest levels of emigration. The single exception is Yakutsk, the Republic's capital, the population of which rose between 1991 and 1994. This is a reflection of structural change in the main industries, which are decreasing the number of people employed, but maintaining per capita income.

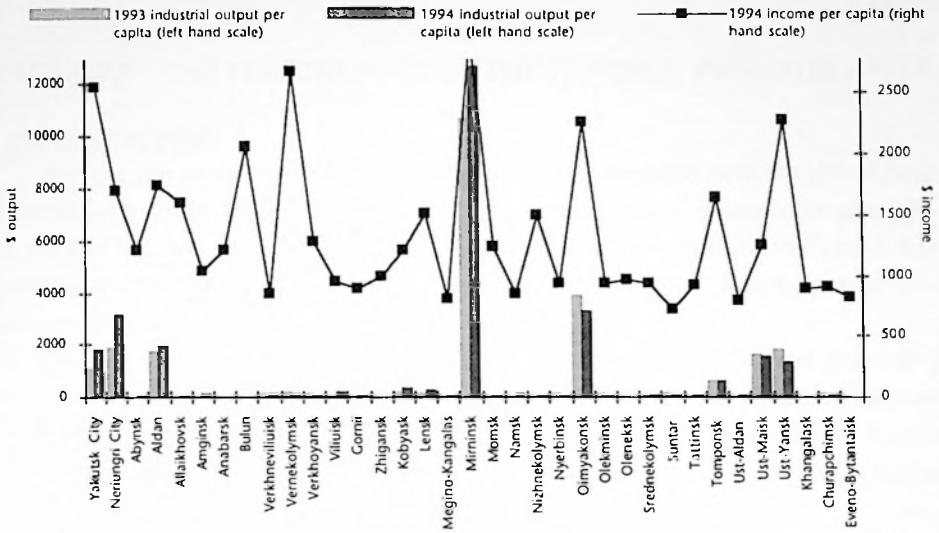


Figure 4.27. Per capita industrial output in 1993 and 1994 and per capita income in 1994 for the counties (*ulus*) in the Republic of Sakha.

4.8. Conclusion

By looking at the overall regional economy of the Republic of Sakha, especially the changes in the Sakha economy between 1990-1995, and comparing it to changes in the Russian economy, it can be demonstrated that Sakha economy is generally better off than the overall Russian economy. Most basic economic indicators show that Sakha's economy is recovering or that it has recovered.

In this chapter, we saw how Sakha's regional budget was transformed from a federally subsidized expense account to an independent budget. Budgetary independence brought with it all the problems of managing regional income and expense. In 1995, Sakha began a policy of deficit spending.

Great changes occurred from 1990 to 1995 in employment, wages and income. These changes in turn affect the general quality of life within Sakha. Within Sakha, regional differences in the quality of life are also apparent, especially the urban/rural division.

The information in this section, an introduction to the economy of Sakha, lays the foundation for a closer view of industry, agriculture and government policy within the Republic of Sakha during Russia's intense period of transition, reform and privatization.

CHAPTER 5

PRIVATIZATION AND PERFORMANCE IN THE REPUBLIC OF SAKHA AFTER 1991

5.1 INTRODUCTION

After the fall of the Soviet Union, the issues of ownership and control of land and industry became the main concerns in the Republic of Sakha. Considerable struggle ensued in the wake of Russia's existing political and economic crisis between the Sakha Republic government and the Russian federal government over the control of land, resources and the means of production (industry).

One aspect of the struggle was over the allocation of revenue from the sale of resources among the levels of government,[1] particularly between the Russian Federation and its constituent members (republics, *oblasts, krais*). This mainly resulted in the decentralization, or devolution, of some key governmental powers over the economy from the federal level to the constituent level of government.

For the regions of Russia, particularly those with resource wealth, this devolution involved issues of fiscal freedoms[2] and issues of control over resources and land rights, and fueled expectation for subsequent revenues. For the most part, the political climate, given the conflict arising over the Chechen Republic's bid for complete sovereignty, put pressure on Moscow to allow the republics, rather than *oblasts*, and *krais*, to achieve the greatest level of regional freedom. Fiscal issues, land and resource rights have been a chief preoccupation of the Sakha government since at least 1991.

In general, the struggle between Moscow and Yakutsk focused on the rights of different levels of government and rarely touched on the idea of private control of land resources and production. In Russia, after 70 years of communist rule, a significant portion of the population still views private control of land with an attitude of disapproval and distrust.

Even in 1996, the issue of land ownership continues to be largely avoided by the Russian government. As the Organization for Economic Cooperation and Development (OECD) notes in its economic survey of the Russian Federation:

> One of the most difficult problems in Russia is land ownership. The right to own remains distinct from the right to use. (OECD, 1995, p. 81)

The federal government lacks a clear position on land ownership. This helps to fuel the economic, political and social confusion which presently dominates the Russian North. The issue of "ownership" and control of land in Russia and the Russian North is not completely resolved. During the time of general uncertainty, the Republic government of Sakha has, in many cases, quietly taken over land and resources previously controlled by the Russian Federation and continues many Soviet-style traditions on a regional governmental level.

The issue of ownership of industries was addressed by the Russian-wide privatization program of 1992. The program, launched by the Russian government, strove to create a market-based economy. The Republic of Sakha implemented the Russian

privatization program which involved considerable restructuring of enterprises on paper. The actual results of privatization seem to be an incomplete privatization of most industries and a general failure to create market conditions, with a few exceptions in the trade and agriculture sectors.

In many cases, privatization leaves the controlling shares of enterprises in the hands of the federal, republic (regional) or municipal government. In addition, many of the chief industries remain monopolies and price control continues to be an integral tool used by the regional government.

5.2. Privatization of Industry and the Economy

Privatization in Russia was implemented through a nation-wide voucher program, that started in mid-1992 and lasted about 18 months. Enterprises were responsible for initiating and executing their own privatization. (OECD, 1995, p. 72) For the resource industries of the Russian North, this was turned into a process by which the former "captains of Soviet industry" could collude with government officials on ways of keeping the means of production under their combined control.

In theory, the success of privatization depended on the existing industries adapting to new market conditions or letting unprofitable industries disappear. In reality, the regional government remained reluctant to divest itself of obviously profitable, large industries like mining, oil and gas development. Reformers anticipated that these large resource industries would benefit from markets and competition the most.

Politically, privatization was far from unanimously supported in Sakha. The Russian Communist Party, which has a considerable following in Sakha amongst ethnic Sakha, Russians and Ukrainians, ran on a platform of re-nationalizing many industries. Within government there is a distrust of privatization and markets among some ministries. For example, the Sakha Minister of Foreign Relations said at a meeting in 1994 that since the gold mining industry was not successful after privatization, the government was moving to re-nationalize the industry to make it profitable. (Artamonov, 1994)

The Sakha government consistently followed a policy of retaining the maximum possible government control. Bureaucrats in charge of reform were keen on privatizing industries that were marginal or unprofitable while keeping the revenue earners within the government's portfolio, often as monopolies. Bureaucrats in the regions like Sakha also exerted tremendous control over the decisions of managers of industry through political influence and the authorization of credits to industry. Sakha bureaucrats in the branch (industry) ministries continued to exercise considerably more power than their counterparts in the Russian ministries. When Russia ceded governmental powers to the Republic of Sakha, Sakha government authorized all the various ministries to continue to operate as before, only now to answer to the President of the Sakha Republic. By contrast, elsewhere in Russia, branch ministries in many cases lost some of the influence they exerted over the industry managers.

Sakha is one of the least progressive areas in terms of privatization. (Slider, 1994, p. 386) Sakha was ranked 84 out of 87 of Russia's political entities in a ratio of privatized enterprises to initial state owned enterprises (ten percent of 2,305 enterprises) in May 1994. (Slider, 1994, p. 389) The Republic of Sakha publicly proclaimed that it pursued a "moderate" approach to Russia's privatization program. (Slider, 1994, p. 386) The resistance to change was reminiscent of efforts to implement socialism in Yakutia in the 1920s and 1930s.

The Sakha government used several methods to guarantee the retention of control and a majority of ownership of all the major industries. Most of the Republic of Sakha's principal industries were either not subjected to mandatory voucher privatization or were privatized with controlling interests retained by the regional government. Under Russia's privatization program firms were not required to be privatized if they were classified as "excluded" industries (mineral resources, water and rail transport) or if they were agricultural state or collective farms. (OECD, 1995, p. 81) Industries classified as "strategic" industries (mineral and precious stone extraction, energy), if privatized, were allowed to transfer a majority or plurality share of ownership to the regional government. (OECD, 1995, p. 81) The Sakha diamond industry, which generates the single greatest source of income, is now unabashedly controlled by the Sakha government, in cooperation with the Russian government.

Another method of privatization broke up the larger enterprises into several smaller companies and created a complicated web of companies and holding companies that tied up all the controlling stock under the control of a single company. Therefore, the ultimate control of an industry remained with one parent company, a reincarnated version of a former state company, or a newly created umbrella company. In either case the Republic government usually controls the bulk of the shares of such a company.

The Republic of Sakha also created an indirect method to hold stocks, through the Sakhainvest Company, a government investment fund, which bought up or accumulated private citizens vouchers. (Slider, 1994, p. 390) Sakhainvest Company also received, without paying compensation (through a decree passed by President Nikolaev of Sakha), ten percent of any voucherized enterprise in Sakha. (Slider, 1994, p. 390) In September 1993, the investment fund held five billion rubles (about $4.3 million) worth of vouchers and holdings. (Slider, 1994, p. 390)

By 1993, this company had 37 percent of all the monies from Sakha's privatization that government would earn between 1991 and 1995. The sum that Sakhainvest held in 1993 was equivalent to 46 percent of the nominal capital of all firms privatized between 1991 and 1995 and about 66 percent of the money that the Sakha government budget received from privatization, between 1991 and 1995. Sakha also privatized municipal property, mostly to labor collectives, at low prices. (Slider, 1994, p. 393) Municipal privatization mostly included stores and restaurants.

The Sakha government's influence over privatization insured that government had the majority of control in the chief companies slated for privatization. This meant that profitable industries were ostensibly privatized, but control of these industries remained in the hands of the government and could be more accurately described as merely "voucherizing" (corporatizing) an enterprise as a nominal joint stock company. Profitable industries almost never receive the benefits of competition and independence, while some potentially viable, but struggling industries are left without government subsidies.

Even worse, a fair number of unprofitable, but politically favored, industries either avoided privatization or were voucherized and most shares issued under the control of the Sakha government. Some of these unprofitable industries are subsidized using money from profitable enterprises, primarily the diamond revenues.

One example is Sakha's telecommunications system, which is one of the few regional systems in Russia that was not made a stock company. Instead, Sakhatelekom is run as a state controlled monopoly utility company. On one hand, this isolates Sakha from large scale fiascos, like the unsuccessful sale of a large percentage of Rossvyaz, Russia's privatized telecommunication firm, to Stet of Italy, an Italian telecommunications firm. (*The New York Times*, 1995, p. 42) Stet of Italy announced that it would purchase $900 million of stock. Stet reneged after Rossvyaz Company would not explicitly give the Italian telecommunications firm control over a share of the company it was proposing to buy. On the other hand, competitive markets and pricing structures are undeveloped in Sakha, and result in abysmal telephone service, even by Russian standards.[3]

The official process of privatization in Sakha turned out to be largely an exercise in restructuring industry on paper. On the positive side, some success can be noted in the area of small enterprises, particularly in urban areas, like state stores, personal flats, restaurants, shops and other retail services which were put on the market between 1992 and 1994.

To an extent, there was also consequential restructuring of agriculture. In Sakha, the privatization of agriculture was not as controversial an issue for the Sakha government, since President Nikolaev was the former chief administrator for agriculture when Sakha was still the Yakut Autonomous Soviet Socialist Republic. Nikolaev's successful election as the first president of Sakha relied heavily on mobilizing the rural state farm voting machine. Political payback for his rural supporters came as a policy by the government of Sakha to step in to support the agricultural sector as Russia pulled back. Nikolaev was able to do this aided by the income from diamond revenues. The land has not been "deeded" over, but the right to use the land has been transferred to the collective use of people already using the land. As we shall see, land transfers are an issue that ignites some of the most complex political conflicts, including inter-ethnic relations.

Decentralizing the industrial sector of the economy became a struggle between levels of government, and power has largely moved from Russian government control to Sakha government control. Decentralization of the agricultural sector, for example, where

government involvement comes primarily from the local, county (*ulus*) level, has focused energy on privatization of capital and greater changes in structural organization. As noted in 1992 by one of the leading Russian newspapers, *Moscow News*, this may be a principal contradiction to Russia's reform policy:

> Governments in countries with normal free market economies only control those industries whose products or services are needed by everyone, though their profits are too low to sell them to private owners. Our reformers do the opposite. They let the state control all industries that are profitable and plan to privatize only that which is unprofitable. A 'scraps thrown to a dog' attitude. (Chernova and Skoptsov, 1992, p. 7)

Any participation by the public, including indigenous people, in planning or profiting from non-renewable resource development is now overridden by provincial and federal disputes about mineral leasing, royalty payments, taxation and revenue sharing. For the diamond industry the driving force behind change was the distribution of power and profit among the administrative levels of government and resource development organizations. Decentralization is dictated by increasing rights for regional levels of government and regional-sized resource development organizations to participate in sharing economic rents and decision making.

This is a start for reform, but the process is not spreading past the regional governments. Russia reacted to the independence of the regions much the way the USSR reacted to the independence of its republics. Sakha seems to be following suit and making sure the power and the money stay on the highest level. Within the context of this struggle, private ownership of land is largely circumvented by the Russian and Sakha governments, since for both governments their control of the resource revenues brings no incentive to shed its grip on the land.

5.2.1. Privatization in Industry

Before the reforms of the late 1980s, almost all property and capital (the "means of production and distribution) were owned by the state. The Soviet Union's system also allowed for some cooperative and private ownership. This form of ownership was known as non-state ownership. There was also a significant black market, especially for consumer goods, but it was never officially recognized or officially accounted for by the Soviet government. Cooperative ownership was used extensively during the 1920s and 1930s in the agricultural sector, but by the 1950s, collective farms were largely replaced by state farms. In the early 1990s, the remaining collective farms produced less than ten percent of total output in the agricultural sector. Historically part of wholesale and retail trade was run by trade cooperatives that were brought under complete government control. (Minakir, 1995, p. 201) The Soviet Union also recognized personal property of citizens. For the general economy, an important supplement for many people is produce grown privately on small

plots of land granted for private use. In industry, until 1992 state-owned enterprises accounted for over 98 percent of all enterprises. (Minakir, 1993b, p. 124)

One of the first meaningful steps in Soviet economic reform during *perestroika* was the law on cooperatives, adopted in 1988. (Nove, 1992, p. 402) The cooperatives of the late 1980s were the first example of widespread non-state controlled ownership within the Soviet Union. The law allowed for urban cooperatives that could provide various goods and services in trade and industry, and agricultural cooperatives. By 1990, there were 260,000 urban cooperatives in the USSR and they employed about 6.2 million people. (Nove, 1992, p. 403) In Sakha, the number of cooperatives grew quickly in retail trade, food services, and construction, while in industry, cooperatives remain a small part of the economy.

The general understanding within the USSR during *perestroika* was that the new Soviet Union could accommodate many and varied forms of ownership: state, collective, private and "mixed" (joint state/private, state/collective, private/state). Furthermore, diversification within the state sector was promoted as part of the Soviet and Russian policy of reform after 1988 and before 1992. (Minakir, 1995, p. 202) The result was a large increase in the number of state-owned firms as the industry broke down into independent units. (Minakir, 1995, p. 202) This process peaked in 1991, when the number of state-owned firms increased by 50 to 90 percent in many regions of Russia. (Minakir, 1995, p. 202) The following year the number of state-owned firms fell, as various merger schemes were put into place. In Sakha, the best example of this is what ocurred within the mining sector. In 1991, most of the mining complexes broke up with each individual mine or mining area organizing itself into a separate company. Special services, like geological surveying, also formed individual firms. Some of the companies then merged with other companies in the same industry. Elaborate stock holding schemes were arranged putting the controlling interests of all the various companies within an industry into the hands of a single company. This was not as difficult to arrange as might be imagined since the individual companies within an industry usually required the supply links and infrastructure that the main holding company controlled.

One significant trend associated with all the economic restructuring is the growth in the number of firms in all areas of the economy, especially agricultural enterprises. From 1994 to 1996, in Sakha, the number of firms rose from about 9,000 firms to about 16,500 firms (see Figure 5.1). Most of these firms are in private ownership, 63 percent (8,800 firms) in 1995 and 65 percent (10,635) in 1996. State and municipal ownership makes up about 24 percent of all firms for both 1994 and 1995 and "mixed" (state/private) and other types of ownership made up about 11 to 13 percent of all firms. Figure 5.1 shows the total number of firms in the Republic of Sakha for 1994 to 1996, with a break down by type of ownership for 1995 and 1996. The increase in the number of firms is due to the creation of new private firms, the creation of many companies (with various forms of ownership) out of state owned large companies, and the transformation or privatization of existing state, quasi-governmental or private enterprises.

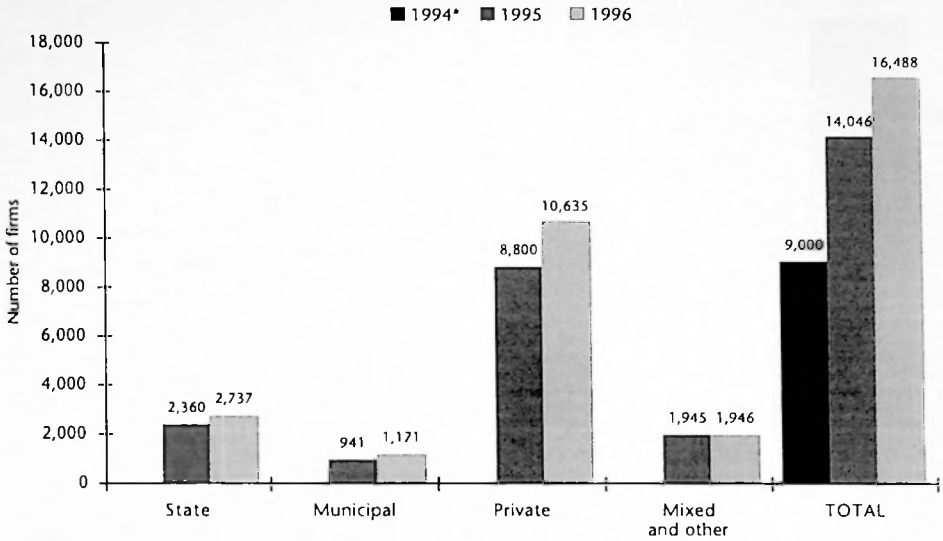


Figure 5.1. Total number of firms in the Republic of Sakha by ownership, 1994-1996.
*no information available on ownership in 1994.

The number of firms in private ownership is growing. There are two main ways that firms can become privately owned, through privatizing an existing firm or creating a new private firm. The latter method acounts for the greatest number of private firms. Between January 1995 and January 1996, 1,835 new private firms were created. By comparison, between 1991 and 1995, only 386 state owned firms were privatized. This includes firms whose majority shares may be government owned, so although a company is ostensibly privatized, it may still be under government control.

In 1991, three firms were privatized from existing firms. The peak of privatization occurred in 1992 and 1993, when 130 and 168 firms were privatized per year. The rate of privatization fell significantly to 64 and 21 firms privatized in 1994 and 1995. Figure 5.2. shows the number of firms privatized between 1991 and 1995.

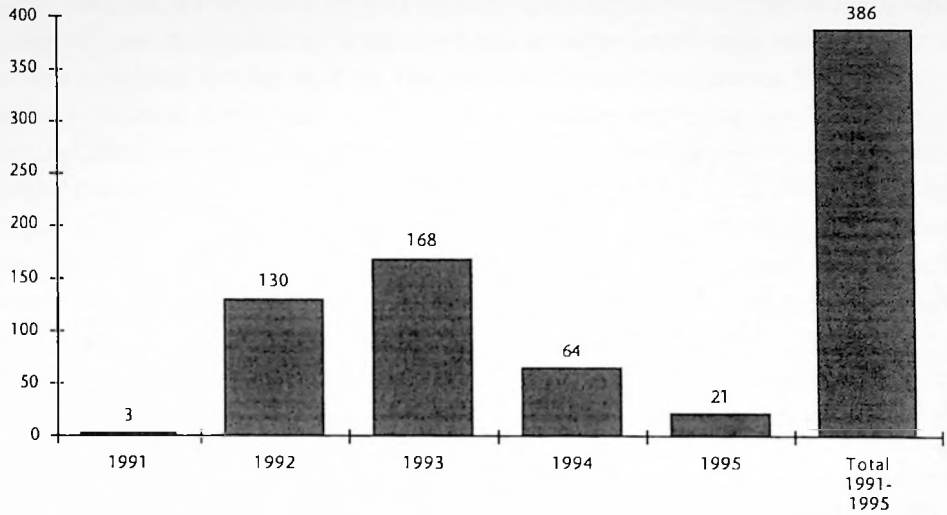


Figure 5.2. Number of firms privatized between 1991 and 1995.

About two-thirds of all privatized firms in any given year were in industry and construction. This can be seen in Figure 5.3.

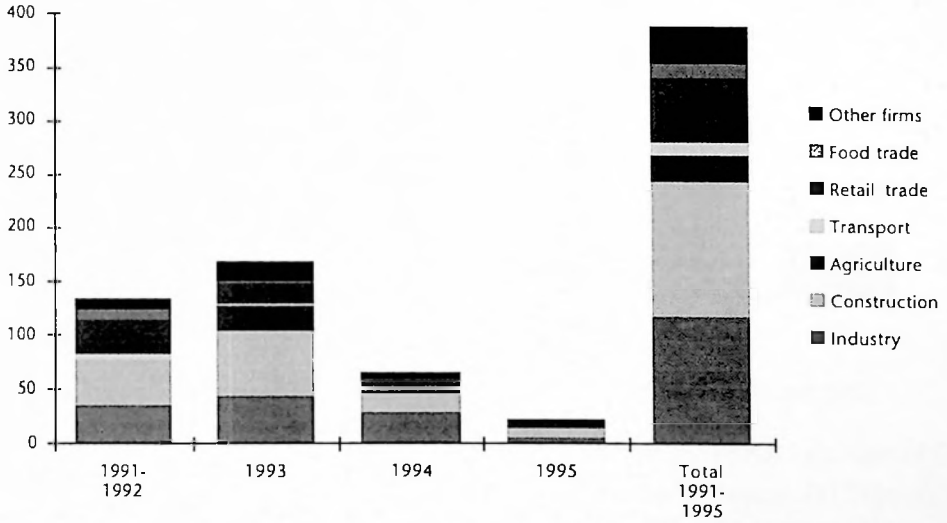


Figure 5.3. Number of firms privatized by industry 1991–1995

Existing firms have six methods by which they can privatize in the Republic of Sakha. First, cooperative firms (created after 1988 as "non-state, collective" enterprises) which rented capital goods and buildings and could purchase the capital goods and buildings from the Republic or municipal government landlord (e.g., agency, state farm, regional administration). This was the scheme used for the first three privatization efforts carried

out in 1991. Second, a firm could be sold on non-commercial investment markets, where shares were sold or distributed on a priority basis to either employees, management, or government controlled entities such as The Fund for Future Generations. This type of privatization occurred during 1992–1993 as an alternative method to the "voucherization" program. In Sakha, commercial sales of enterprises were avoided until 1995. The non-commercial market sales account for the largest number of firms (217) privatized. Third, a small number of firms (eight) were sold directly to management and employees. Fourth, a number of firms (17) were bought out over time in portions. Fifth, a small number of firms (six) were privatized only after 1995, sold to commercial markets. Finally, firms (81) were privatized by creating stock companies through a system created by the Russian privatization program, the so-called voucherization program. This is discussed in detail below. Figure 5.4. is a summary of the methods and numbers of firms privatized in Sakha between 1991 and 1995.

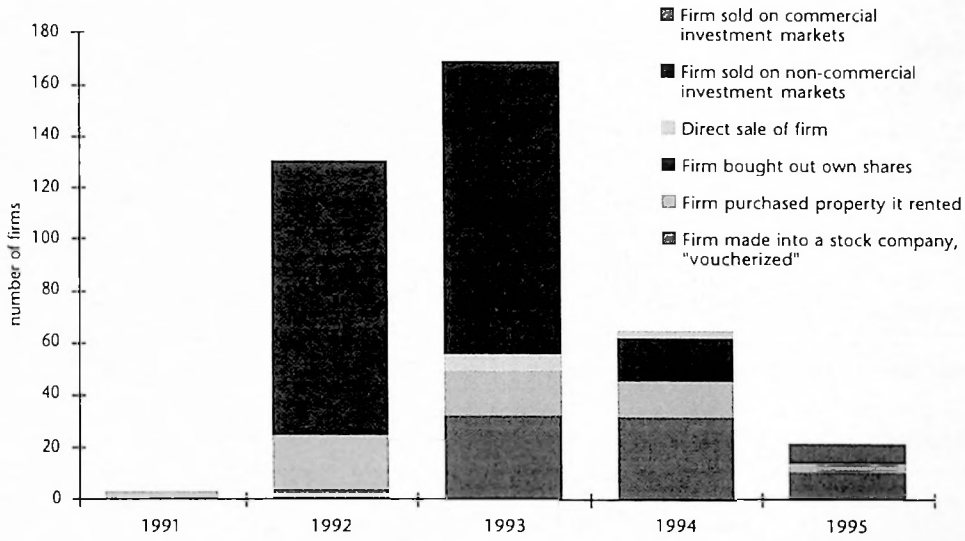


Figure 5.4. Methods by which firms were privatized between 1991 and 1995.

In most of Russia, there was a large difference between the initial valuation of firms and the sale price which was much higher. (Goskomstat-Sakha, 1996a, p. 21) This occurred because the initial valuation was made before 1992 and the actual firms were sold at competitive auctions. (Goskomstat-Sakha, 1996a, p. 21) Valued in rubles deflated for 1992, and sold at closed, non-competitive sales (although still referred to as auctions) Sakha firms had, initial valuation and sale price that was usually within ten percent of the final sale price. (Goskomstat-Sakha, 1996a, p. 21) Initial valuation varied between 3.2 times greater to 4.2 time greater than sale price of a company between 1992 to 1994 on average. (Goskomstat-Sakha, 1996a, p. 21) Only in 1995, when firms were made available at competitive market auctions did sales greatly exceed initial valuations. (Goskomstat-Sakha, 1996a, p. 21) This

can be seen in Table 5.1. that shows the money received from privatization by the government, measured in current dollars. In particular, the government received over $200,000 per firm in 1995, but not more than $50,000 per firm in 1992 to 1994.

	1992	1993	1994	1995	TOTAL
Republic budget	$ 1,640,701	$ 88,557	$ 1,720,757	$ 2,988,369	$ 6,438,385
County (*ulus*) budget	66,029	57,865	39,734	355,506	519,134
Enterpreneurial support fund	0	0	315,797	654	316,452
State privatization agency (Sakha)	2,178,267	96,279	995,775	932,535	4,202,856
Russian Federation budget	0	0	0	14,397	14,397
Russian Federation fund of property	0	0	0	654	654
Russian State Committee of Property	0	0	0	436	436
Other	35,262	25,316	0	65,028	125,606
TOTAL	$ 3,920,258	$ 268,018	$ 3,072,064	$ 4,357,580	$ 11,617,920
Number of firms privatized	130	168	64	21	383
Total evaluation of property and capital (current rubles)		R 4,614,600,000	R 75,396,800,000	R 52,700,000,000	R 170,800,000,000
Evaluation of capital (current rubles)		R 440,000,000	R 14,269,200,000	R 8,400,000,000	R 29,500,000,000
Total evaluation of property and capital (current dollars)		$ 4,510,566	$ 33,965,916	$ 11,496,077	$ 49,972,558
Evaluation of capital (current dollars)		$ 430,080	$ 6,428,210	$ 1,832,392	$ 8,690,682
Average money received by government per firm (current dollars)	$ 30,156	$ 1,595	$ 48,001	$ 207,504	$ 30,334
Average total evalution of property and capital per firm (current dollars)		$ 26,849	$ 530,717	$ 547,432	$ 130,477
Average evaluation of capital per firm (current dollars)		$ 2,560	$ 100,441	$ 87,257	$ 22,691

SOURCE: GOSKOMSTAT-Sakha, 1994b, p. 74; GOSKOMSTAT-Sakha, 1995b, p. 56; GOSKOMSTAT-Sakha, 1996b, p. 14

Table 5.1. Monies received from privatization by various government organization (current dollars).

In Sakha, 365 firms were privatized and the government received about $3.7 million on $53 million of net equity between 1992 and 1995. Of that money, about $2 million went

to the Republic of Sakha, $1.3 million to the various government privatization agencies, $75,000 to local county budget and $315,000 were placed in an entrepreneurial fund disbursed by the Sakha Committee for Small Business. Industrial firms and construction firms accounted for over two-thirds of firms privatized (see Figure 5.3.).

When the Soviet Union collapsed, the concept of accommodating many and varied forms of ownership was inherited by the Russian government. When the Russian government developed schemes for privatization and created new enterprises, it tried to accommodate various forms of enterprise. Consequently, the Russian government ordered that all enterprises and organizations go through a process of re-registration. From 1992 until 1995, the bulk of re-registration of all commercial and business firms was carried out. In 1993, the entire state farm system was re-registered and replaced by various types of enterprise and private forms of ownership where there had previously been less than five. About 14 legal kinds[4] of business enterprise and about four or five legal kinds of agricultural enterprise , classed in a separate set of categories, are recognized by the government. The various categories change from year to year. Table 5.2 is a partial summary of the types of business and agricultural organizations.

Type of company	Variations	Ownership details	Russian name (acronym)
Corporate-type enterprises			
Stock company			*aktsionyernaya obshchestvo (AO)*
	Pure state joint stock company	Government, state agencies, state enterprises	*(gosudarstvennoye) Aktsionyernaya obshchestvo (AO) or Aktsionyernaya Kompaniya (AK)*
	State/private joint stock company	No less than 50 per cent state ownership	*Aktsionyernaya obshchestvo (AO)*
	-Type 1	Controlling bloc with state holding company (based on former branch industry). Remaining stock may be distributed among municipal government, employees of enterprise and private investors.	
	-Type 2	Controlling stock distributed among state enterprises and government. Remaining stock may be distributed among municipal government, employees of enterprise and private investors.	
	State joint stock company (transformed from state enterprises)	Allowed by Russia's 1992 privatization program. Founders of joint stock companies are the Property Committees responsible for privatization. Stock is distributed by the Russian regional or municipal property funds.	*aktsionyernaya obshchestvo (AO)*
	Public joint stock company	Majority usually privately owned	*aktsionyernaya obshchestvo otkrytogo tipa (AOOT)*
	Limited joint stock company	Majority usually privately owned	*aktsionyernaya obshchestvo zakrytogo tipa (AOZT) or kompaniya c ogranichennoy otvestvennostiyu*

Table 5.2. Partial summary of business organizations in Russia and the Republic of Sakha.

Type of company	Variations	Ownership details	Russian name (acronym)
Corporate-type enterprises			
Partnership			
	Limited partnership	Usually private company or private citizens	*tovarishchestvo c ogranichenoi otvestvenosti (TOO)*
Collective enterprises			
Main owner private			
	Cooperatives		*kooperativ*
	Joint venture (with foreign investor)		*sovmestnoye predpriyatiye*
	Small enterprise		*maloye predpriyatiye*
	Leased enterprise		*arendnoye predpriyatiye*
	nomadic-aboriginal community	legally recognized association that can use land, own animals and own capital	*kochivaya-rodovaya obshchina*
Main ownership state or mixed			
	Concern		*kontsern*
	Associations		*assotsiyatsiya*
	Consortia		*konsortsiym*
	Joint venture (with foreign investor)		*sovmestnoye predpriyatiye*
	Contractual partnerships		*polnoye tovarishchestvo*
	Mixed partnership		*smeshenoye tovarishchestvo*
Individual private enterprises			
	Private enterprise		*chastnoye predpriyatsiye (ChP)*
	Private working individual		*grazhdan zanyaty individyalnoy trudovoi deyatelnostiuy*
	Farms	agricultural enterprise	*fermerskoye khozaystva*
	Private peasant	agricultural enterprise	*krestyanskoye khozaistvo*
	Private agricultural plot		*lichnoye podsobnoye khozyaystvo*
	Private hay field	Sakha agricultural unit for hay gathering	*sayylyk (Sakha word)*

SOURCE: Minakir, 1995, pp. 262–264.

Table 5.2. (continued) Partial summary of business organizations in Russia and the Republic of Sakha.

In short, the organization of business and agricultural enterprises can be broken down into three basic types of organization:

- corporate enterprises (including corporate limited partnerships)
- collective enterprises
- individual enterprises

Partnerships and corporate enterprise titles are often translated into English with names that seem to associate them closely with European, rather than American, enterprises. The primary feature of partnerships and corporate enterprises (companies) is that they limit liability for the individual participants in the enterprise. Partnerships and companies can have different kinds of owners, including the Russian government, regional government, municipal government, other enterprises (government and private), and individual investors. In Sakha in 1996, there are about 3,750 enterprises classed as limited partnerships (*Tovarishchestvo c Ogranichenoy Otvestvenosti* (TOO)), the largest business classification by number of enterprises. There are 562 limited joint stock companies (*Aktsionernoye Obshchestvo Zakrytogo Tipa* (AOZT)), roughly equivalent to a limited corporation in the US and there are 242 public joint stock companies (*Aktsionernoye Obshchestvo Otkrytogo Tipa* (AOOT)).

Collective organizations and individual enterprises, generally have unlimited liability. Collective organizations are divided into those that are primarily controlled by the government, including several industrial resource and transport giants (Yakut Coal, Yakut Timber, State Oil Products Transport Company) and those that are in private control, like small enterprise and the remaining cooperatives. Since 1994, industrial, mostly infrastructure, collective enterprises are being slowly corporatized, with government control of 51 percent of the shares (Yakut Energy (electricity), Lena Association of River Navigation, the Vilyui Hydroelectric Plant, the Yakutsk City Port). (Lishenyuk, 1995, p. 66) Much rural private ownership has been re-registered as collective enterprises. The most distinctive of these rural collective structures is the nomadic-aboriginal community (*rodovaya obshchina*), which has taken over the function of the state farm in many rural villages where indigenous people live.

The re-registration process shows, on paper, the overwhelming number of private companies that are being formed, primarily in retail trade, agriculture and construction. The largest number of re-registered companies are in private ownership, over 4,000 private companies out of 5,548 registered in 1994 and more than 2,000 private companies registered out of 3,769. Table 5.3 and Figure 5.5 show the results of re-registration.

	Industry	Construction	Agriculture	Transport	Retail trade	Wholesale trade	Other goods	Other services	Totals
1994									
State	41	35	46	40	34	17	32	340	585
Municipal	42	17	5	9	88	11	3	133	308
Private	353	584	1,286	101	1,398	59	85	202	4,068
Mixed	79	57	19	31	78	23	16	118	421
Public holding	6	7	1	0	12	3	1	120	150
With foreign investment	8	2	0	0	3	0	2	1	16
Total	*529*	*702*	*1,357*	*181*	*1,613*	*113*	*139*	*914*	*5,548*
1995									
State	23	36	45	24	18	20	17	691	874
Municipal	26	12	6	8	56	6	0	284	398
Private	223	255	522	43	804	87	9	103	2,046
Mixed	76	51	7	14	60	29	3	72	312
Public holding	1	1	0	0	4	3	0	111	120
With foreign investment	10	2	0	0	4	1	1	1	19
Total	*359*	*357*	*580*	*89*	*946*	*146*	*30*	*1,262*	*3,769*

SOURCE: GOSKOMSTAT-Sakha, 1995a, p. 51; GOSKOMSTAT-Sakha, 1996a, p. 11.

Table 5.3. Number of newly registered companies by industry and ownership for 1994 and 1995.
Newly registered companies include existing firms that are re-registered.

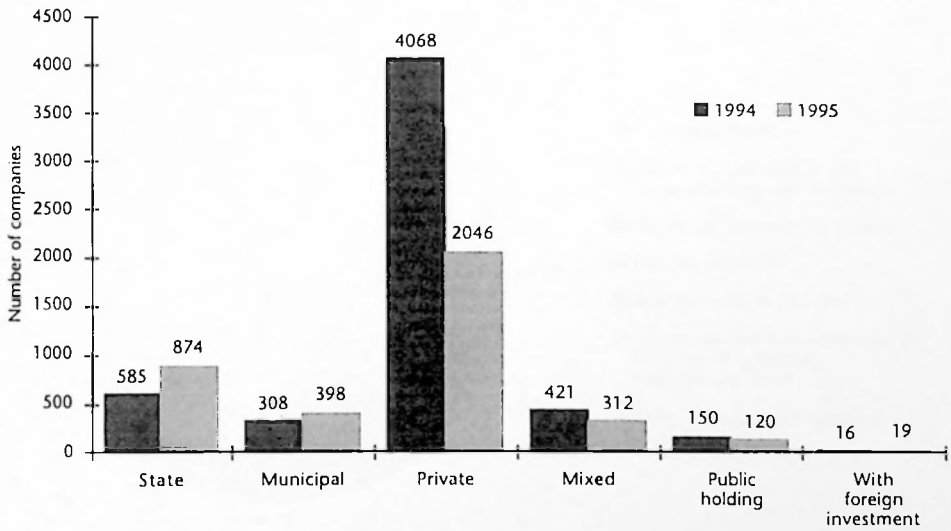


Figure 5.5. Newly registered companies by ownership for 1994 and 1995.

The Russian privatization program of 1992 allowed three options for distributing shares of privatized firms, with the choice of options to be approved by two-thirds of the employees. (OECD, 1995, pp. 72–73) The three options are summarized in the left hand column in Table 5.4.

Option one gave away 25 percent of the shares to the employees who can buy ten percent more of the firm at closed subscriptions. Management can buy five percent of the shares. Ten percent of the shares were mandated as an employees' employment fund. Twenty-one percent was retained by the government property fund and could be kept, sold (at auction or to the government) or transferred (usually to the government or a fund created by the government). Twenty nine percent of the shares were required to be sold at voucher auctions.

At the beginning of the privatization process, all Russian citizens, for a nominal fee of 25 rubles, received a single privatization voucher that had a nominal value of 10,000 rubles. (OECD, 1995, p. 72–74) About 150 million vouchers were issued. (OECD, 1995ùxP. 72) The vouchers were fully tradeable and could be used for purchase of shares of companies at auctions, and for buying small scale businesses and housing. (OECD, 1995, p. 72–74) The people living in Sakha received about 1,070,000 vouchers. As of June 1994, the five investment funds operating in Sakha accumulated about half of the vouchers within Sakha (528,200 vouchers). (Lishenyuk, 1995, p. 66) The largest investment fund in Sakha is Sakhainvest, created and managed by the Sakha government, and Investalmaz owned by Diamond Russia Sakha Company (see Figure 5.6.). (Lishenyuk, 1995, p. 66) Vouchers used at voucher auctions within Sakha (these would be vouchers with which private citizens directly acquired ownership in enterprises) only accounted for seven percent of all vouchers issued in Sakha. (Lishenyuk, 1995, p. 66)

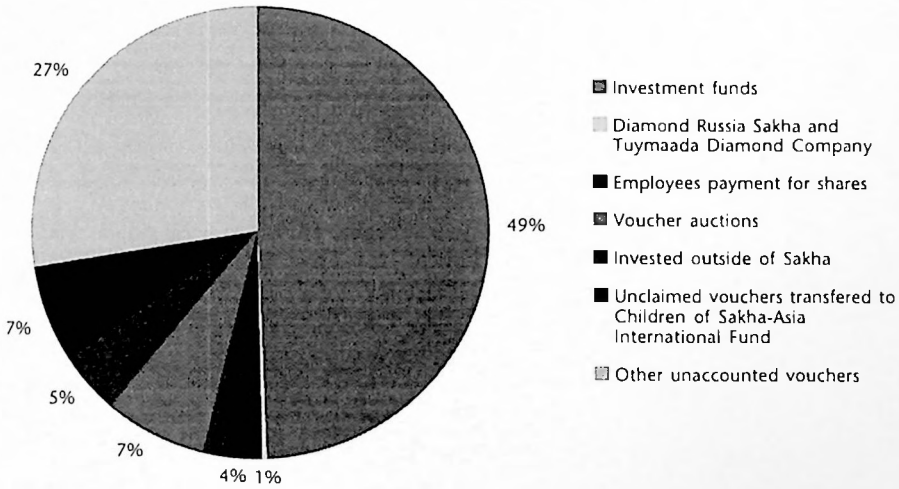


Figure 5.6. Distribution of vouchers allotted within the Republic of Sakha as of June 1994.

Option two sold 51 percent of the shares at voucher auctions, sold 29 percent to employees for cash or vouchers, gave five percent to the employees' shareholder fund and left 15 percent with the government property fund (see Figure 5.6). The third option was the most market oriented, with over 50 percent of the shares sold at voucher auctions and to privatization groups (see Table 5.4.). (OECD, 1995, p. 73) This third option was not used at all in Sakha. According to the Sakha statistical office, option three was not implemented because of "... the difficult financial situation of the firms, and the lack of active entrepreneurs among the managers and specialists in the Republic." (Goskomstat-Sakha, 1996a, p. 20)

Comparing the goals of the 1992 Russian Federation privatization program with the realities of the Republic of Sakha'a privatization (voucherization) program shows that in Sakha, the minimum amount of shares allowed were expended in the private domain (see Table 5.4.). From 1993 to 1995, Sakha did transfer the target goal of 40 percent of total shares, under option one, and 51 percent of the shares, under option two, to employees and management. Sakha sold well below the target of 29 percent at voucher auctions set by the Russian government under options one and two. Only in 1993, under option one did Sakha's privatization program sell 22 percent of the stocks at voucher auctions. All other times the Sakha privatization program sold less than ten percent of the stock and in 1995, there were no shares sold at any kind of auction (vouchers expired in mid-1994). Instead, a large percentage of shares was kept by the Sakha Property Committee or transferred to other companies. This percentage of shares equaled from 39 to 61 percent of the total shares, under any option in any given year. In most cases, this is more than double the percentage targeted by the Russian government to be under government control. When Sakha's voucher privatization occurred, no shares were transferred to an employees' or shareholders' fund. Table 5.4. shows the gulf between Russian privatization program goals and the implementation of privatization in Sakha.

Russian Federation Privatization Program Goals		Republic of Sakha privatization			
Option 1		Option 1			
			1993	1994	1995
Free to employees	25%	Free to employees	25%	25%	0%
Sold to employees for cash or vouchers	10%	Sold to employees for cash or vouchers	10%	10%	0%
Sold to management	5%	Sold to management	5%	5%	0%
		Closed subscriptions for employees, management	0%	0%	39%
Total to employees and management	40%	Total to employees and management	39%	40%	39%
Sold at voucher auctions	29%	Sold at various auctions	22%	8%	0%
Remaining shares	21%	Remaining shares (held by Sakha Property Committee)	39%	37%	61%
		Transferred to other companies	0%	15%	0%
Given to Employees' Shareholder Fund	10%				
TOTAL Option 1	*100%*	*TOTAL Option 1*	*100%*	*100%*	*100%*

Russian Federation Privatization Program Goals		Republic of Sakha privatization			
Option 2		Option 2	1993	1994	1995
Free to employees	0%	Free to employees	3%	0%	0%
Sold to employees for cash or vouchers	51%	Sold to employees for cash or vouchers	48%	52%	0%
		Closed subscriptions for employees, management	0%	0%	51%
Total to employees and management	51%	Total to employees and management	51%	52%	51%
Sold to voucher auctions	29%	Sold at various auctions	5%	2%	0%
Remaining shares	15%	Remaining shares (held by Sakha Property Committee)	44%	3%	49%
		Transferred to other companies	0%	44%	0%
Given to Employees' Shareholder Fund	5%				
TOTAL Option 2	*100%*	*TOTAL Option 2*	*100%*	*100%*	*100%*

Table 5.4. A comparison between the 1992 Russian Federation privatization (voucherization) goals and actual Sakha privatization in 1993, 1994 and 1995.

Russian Federation Privatization Program Goals		Republic of Sakha privatization
Option 3		Option 3
Sold to employees for cash or vouchers	20%	Option 3 was not used in Sakha because: "... of the difficult financial situation of the firms, and the lack of active entrepreneurs amongst the managers and specialists in the Republic." (GOSKOMSTAT-Sakha, 1996a, p. 20)
Given to Employees' Shareholder Fund	10%	
Sold to voucher auctions	29%	
Sold to privatization group	30%	
Remaining shares	11%	
TOTAL Option 3	*100%*	

SOURCE: Russia: OECD, 1995, p. 72-73; GOSKOMSTAT-Sakha, 1994b, p. 75; GOSKOMSTAT-Sakha, 1995b, p. 57; GOSKOMSTAT-Sakha, 1996b, p. 15.

Table 5.4. (continued) A comparison between the 1992 Russian Federation privatization (voucherization) goals and actual Sakha privatization in 1993, 1994 and 1995.

The Sakha statistical office's conclusions about the privatization program for 1994 can be taken as a general synopsis of the results of the entire program.

> In all, the State Program for Privatization and De-governmentalizing [*razgosudarstvleniye*] of the Republic of Sakha (Yakutia) for 1994 was not completed in full. This is explained by, on the one hand, the winding down of the scale of privatization, the slowing down of the speed of privatization in all of Russia. On the other hand, the program adopted by the Republic, considering the outcomes of economic reform, was not completely realistic to implement. This is because it assumed that the transition to privatization and de-governmentalization would lead to qualitatively new plateaus and lead to the privatization of infrastructure, organizations involved in social and cultural activities, enterprises producing precious metals, oil products delivery enterprises, pipeline transport enterprises, timber enterprises, and publishing and other enterprises. This did not happen. (Goskomstat-Sakha, 1995a, p. 56)

While the number of firms in private hands dwarfs other forms of ownership (see Figure 5.1.), particularly in retail trade, construction and agriculture, the percentage of output by the private sector within the regional economy is small. Looking at the top grossing companies in the industry sector of the Republic of Sakha, the majority ownership is clearly not in the private sector. Of the top grossing industrial companies in 1994 and 1995, about 20 percent are directly owned by the state and over 75 percent are of mixed ownership (see Figure 5.7). In the final analysis, the change from government ownership of most industry to a mixed form of ownership still leaves industry under the firm authority of the Sakha government. Creating "mixed" ownership appears as no more than a tactic to appease the requirements of Russia's privatization program, and to leave business as usual.

The two chief resource producers in Sakha are good examples. The diamond company, "privatized" as a mixed ownership firm since 1992, has 32 percent shares owned by the Russian government, 32 percent owned by the Sakha Government, eight percent owned by the municipal governments of diamond producing regions, five percent owned by a retirement fund and 25 percent owned by the work force and management. Gold mining production is privatized as mixed ownership companies; 51 percent of the stock in Yakut Gold Company is owned by the Sakha government. (*Delovye Lyudi*, 1994, p. 27) The Yakut Gold Company, in turn, has a controlling interest in most gold mining operations in Sakha. The leadership of Yakut Gold Company claims that it wants the government percentage of equity to go down to 15 to 20 percent (*Delovye Lyudi*, 1994, p. 27), but this is unlikely. As the Sakha statistical office notes:

> In our Republic, the majority of mixed ownership enterprises have most shares of the company owned by the government. This leads to the problem of efficiently managing government property. It leads to problems of protecting the company from being robbed and being used efficiently ... [after] passing [management] function to certain ministries and government agencies. (Goskomstat-Sakha, 1995a, p. 58)

Only since 1995 have private, municipal and public owned firms together control more than one percent of the gross earnings, and that has only been in 1995. It is so little of a percentage that it can barely be seen in Figure 5.7. Viewed in terms of numbers, state and mixed ownership firms dominate the roster of enterprises that produce most of Sakha's industrial output. In 1995, private firms made a considerable dent in numbers, even if they continued to produce a small share of earnings (see Figure 5.8).

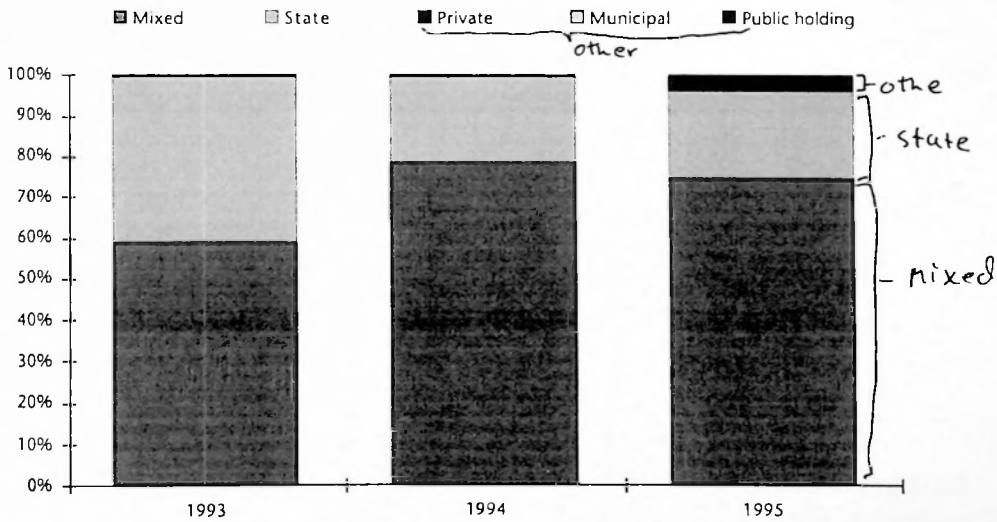


Figure 5.7. Top earning firms in industry and the gross industrial output they produced, by ownership, for 1993, 1994 and 1995. (Ownership of firms in industry. 1993: top 136 firms ($1.7 billion), 94% of total industrial output;1994: top 144 firms ($2.4 billion), 94% of total industrial output;1995: top 188 firms ($2.7 billion), 93% of total industrial output.)

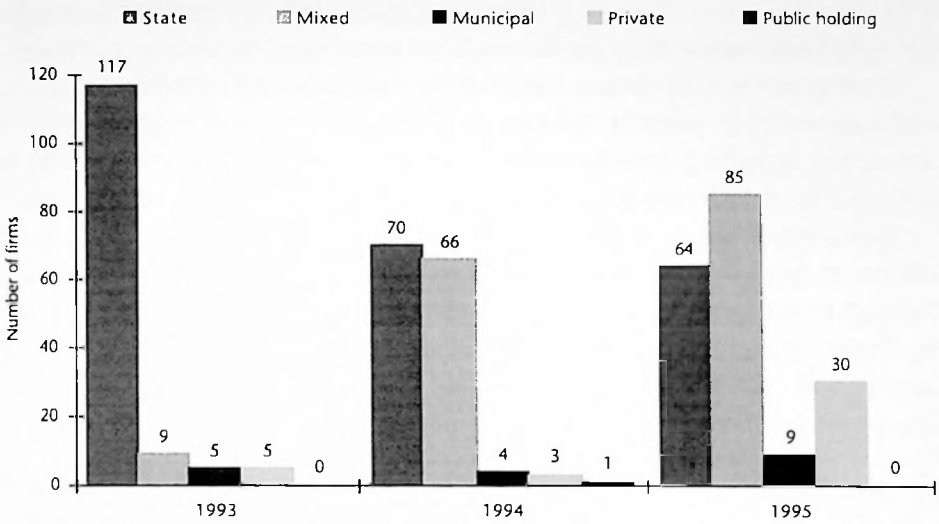


Figure 5.8. The number of top earning firms in industry, by ownership, for 1993, 1994 and 1995.

The fact that the land and the resources remain owned, or controlled, by the government sector is not the crucial problem Sakha industry is facing. Resources can remain in the public domain and be exploited efficiently. The problem lies in the perception held by the Sakha government that losing control over the means of production is equal to losing the benefits of resource exploitation. The privatization of resource exploitation could make the industry efficient and profitable and the Sakha government could still receive a handsome, and significantly large stream of revenue as a landowner without all the headaches of having to produce the resource. By choosing to expend a tremendous amount of effort to guarantee that the privatization process leaves the old way of producing resources in place, Sakha also chooses to continue the old problems. The Republic's statisticians note:

> An analysis of the economic activity of the privatized firms before and after privatization do not show any increased efficiency, rise in the quality of production, or increased material interests in the results of labor. The feeling of welfare dependency can not be thrown off. The situation is ruled by an expectation that the government will support [industry]. A significant difference [between a private and a] government owned enterprise can not be detected. This [situation] lends itself to the conclusion that privatization is simply "changing the sign" outside the firm. (Goskomstat-Sakha, 1995a, p. 58)

The structure of Sakha's industry is clearly changing. Whether these changes are simply cosmetic differences or the beginnings of fundamental changes, is still difficult to determine. The following section reviews structural and organizational changes in three of Sakha's most important industries: diamond mining, gold mining and oil and gas development. These three industries represent the present, past and future of Sakha's development.

5.2.2. Restructuring the Diamond Industry

In 1988, a production association for diamond and gold production, called by its acronym Glavalmazzoloto [literally, Head of Diamonds and Gold], was set up by the Gorbachev government to replace the control of the USSR Ministry of Nonferrous Metallurgy as part of the overall program to restructure the economy. (Kempton and Levine, 1995) From 1988 to 1991, Glavalmazzoloto became the lead organization in negotiating diamond and gold sales abroad. After 1991, with the break-up of the Soviet Union, Glavalmazzoloto also broke apart. (Guseinov, 1994) A large part of the regulatory functions for the diamond and precious metals trade was delegated to a newly formed Russian Committee for Precious Metals and Precious Stones of Russia, known as Roskomdragmet. (Guseinov, 1994) The committee also took over the functions of the State Depository [Agency] of the USSR, known as *Gokhran* [sic], responsible for transporting precious metals and stones from the place of production and storing them in Moscow. (Guseinov, 1994) The Russian Committee of Precious Metals and Precious Stones ostensibly remains the main governmental agency overseeing production and distribution of precious metals and stones. Export of diamonds is an important part of the Committee's work and according to the Committee itself, the value of diamonds represents half of the value of all its other exports of gold, platinum, rare-earth metals and other precious stones. (Makarchev, 1995, p. 1) The committee recently lost considerable prestige and power with the forced resignation of the chairman of the Russian Committee of Precious Metals and Precious Stones, Evgenii Matveevich Bychkov, over a drawn out corruption scandal. The details of the battle for control over diamond sales are discussed in detail in Chapter 6.

Although the current system for exporting diamonds from Russia is now in flux, an understanding of the system that developed by 1996 is useful to identify the players who can influence the system in the future. The Russian Committee of Precious Metals and Precious Stones until mid-1996, was the main controlling agency of the diamond industry and had the following responsibilities:

- coordinating the activities of all Russian firms, private and government owned, that produce and process precious metals and precious stones, including diamonds; (Makarchev, 1995, p. 1)
- planning and authorizing the sale and release of precious metals and stones to firms operating in Russia and planning and authorizing export of precious metals and stones; (Makarchev, 1995, p. 1)
- storing gold reserves of Russia, and other precious metals and diamonds; (Makarchev, 1995, p. 1)
- providing for the "rational use of precious metals and stones in the national economy; and (Makarchev, 1995, p. 1)

- providing oversight for quality by the "issue [of] government certificates for every product made out of precious metals [and stones], and in particular, jewelry created in Russia." (Makarchev, 1995, p.1)

The agency made its decisions in concurrence with the Ministry of Finance and the Ministry of External Economic Affairs and coordinated its decisions with the Ministry of Economics and the Customs Committee of the Russian Republic. The chairman of the Committee for Precious Metals and Precious Stones was also on the oversight board of the Ministry of Finance. Both of these agencies were "in the portfolio" of Alexander Shokhin, a vice-premier in the Chernomyrdin-Yeltsin government. (Makarchev, 1995, p. 1) The oversight board also consulted with the Diamond Russia Sakha Company. (Makarchev, 1995, p. 1) But all important decisions, it turns out, were made by the Russian President's cabinet and signed by the Prime Minister Chernomyrdin. This includes, for example, the setting of export quotas for diamond sales. (Makarchev, 1995, p. 1) When Mr. Bychkov was asked if Yeltsin ultimately participates in decisions regarding diamond sales he replied:

> Without a doubt, this is an important part [diamond exports] of Russia's export and foreign trade, and, naturally, it needs to be in the field of view of the President and his administration. (Makarchev, 1995, p. 1)

Bychkov, before he was fired as Chairman of the Committee for Precious Metals and Precious Stones, stated in 1995 that his agency's policy for diamonds rests on two principles that "lie at the base of all Moscow's decisions." (Makarchev, 1995, p.1)

- "... to support a stable world diamond market;
- "... to defend the national economic interests of Russia, which is one of the world's leading diamond powers." (Makarchev, 1995, p. 1)

Bychkov stressed that, "these two principles do not contradict each other, which makes the Russian policy on the world market not only logical, but fair and forward looking. In no way is it an egoistical policy." (Makarchev, 1995, p. 1) Bychkov and his deputies were referred to as the "Diamond Patriots," and used extremely vocal, pro-Russian nationalistic rhetoric to state their views. (Kempton and Levine, 1995) I shall discuss in detail in Chapter 6 how the Republic of Sakha reacts to a core group of people within the Russian government who are intent on maintaining strong central control of the diamond industry from Moscow.

The Diamond Russia Sakha Company, a quasi-private joint-stock company, was created at the end of 1992 by President Yeltsin in consultation with the Sakha government, under fierce opposition from the Russian Parliament. (Kempton and Levine, 1995) Diamond mining, diamond sorting and sales were united under Diamond Russia Sakha Company. Diamond Russia Sakha Company was an amalgamation of Yakutalmaz, the state controlled mining firm, and the sales and sorting enterprises of Moscow, formerly under Glavalmazzoloto. Diamond Russia Sakha Company is technically a private company, but its

owners are mostly governments. It is not clear how much of the 23 percent owned by workers is in the hands of management or whether it is common or preferred stock. When Diamond Russia Sakha Company's president was asked if there was to be a rumored sale of company stock to private buyers, he replied, "No ... we will stay under state ownership." (Schietz, 1995, p. 60) Distribution of company ownership is as follows:

- 32 percent—the government of the Russian Federation held by the Russian State Property Fund;
- 32 percent—the government of the Republic of Sakha held by the Yakut Property Fund;
- 23 percent—workers of the Diamond Russia Sakha Company (about 50,000 workers);
- eight percent—the governments of eight local counties (*ulus*) where the Diamond Russia Sakha Company operates; and
- five percent—social security fund for Russia's military servicemen. (*Delovye Lyudi*, 1994, p. 30; Khalip, 1996a, 04 March)

According to the leadership of the Diamond Russia Sakha Company, two percent of the income from the company is going to the development of the eight local diamond mining counties (*ulus*). (Borisov, 1994, p. 2)

In a publication commissioned by the Sakha government it states that:

> Pursuant to a Russian presidential decree, Almazy Rossia-Sakha [Diamond Russia Sakha] is to be the only seller of rough diamonds. The company will also have the authority to negotiate the sale of diamonds on the external market and is expected to be much more demanding than government bureaucrats. (*Delovye Lyudi*, 1994, p. 30)

It seems unlikely if both the profits and ownership of a monopoly company are controlled by government that there will be incentives sufficient to motivate the Diamond Russia Sakha Company management to run an efficient operation over the long term. The management of Diamond Russia Sakha Company are relatively well paid bureaucrats, and the role of political incentives is significant. The clearest example of government intervention in the activities of the company is the fact that the new president of Diamond Russia Sakha Company, Vycheslav Shyterov, still maintains his post as Vice President of the Republic of Sakha.

There are now some tensions built into the system that give it a dose of competitive spirit. Russia and Sakha are natural competitors within the system. The Russian Committee for Precious Metals and Precious Stones wants to maintain complete control over all negotiations with De Beers and the export monopoly over diamonds, as does the Diamond Russia Sakha Company. The Committee's role has been weakened with the removal of Chairman Bychkov. For a while, it seemed that the cutting enterprises in Sakha and Russia would have

the right to sell their production independently to any domestic or foreign buyer, but the new agreement between Russia and De Beers makes it clear that Diamond Russia Sakha Company is the monopoly exporter of diamonds. This is not necessarily "bad for business," but it certainly contradicts the stated policy that the Diamond Russia Sakha Company is not an extension of the government interests of Russia and Sakha.

Diamond Russia Sakha Company is really made up of three entities:

- the Moscow subsidiary of Diamond Russia Sakha Company which is made up of the Moscow Diamond Center and the Almazexport (Diamond Export Company);
- the Yakutsk Production and Technical Association in Yakutsk which deals directly with The Sakha Republic Committee of Precious Metals (an analog of the Russian Committee); and
- the Mirnyy Production Units which include all the diamond mines and assorted production facilities, the Diamond Sorting Center and the Yakut Technical Diamond Unit.

The flow of diamonds from Sakha to the world market is complicated (see Figure 5.9.).

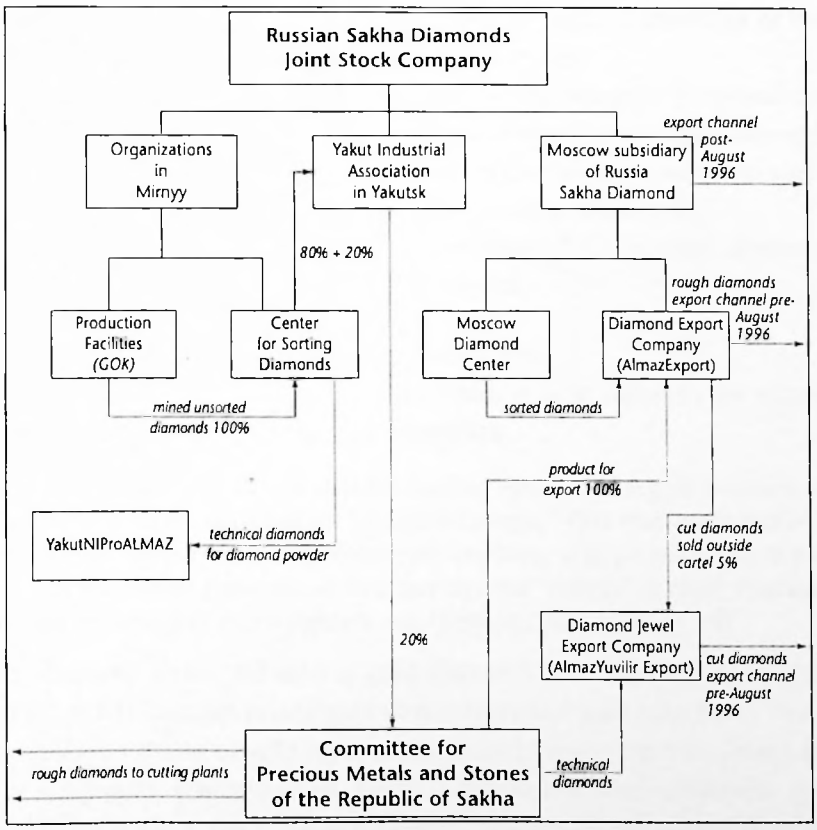


Figure 5.9. Structure of Sakha's diamond industry

There are four mining production complexes in the Republic of Sakha. In Russian, such a production facility is known as a *Gorno-Obogotitelnyy Kombinat* and often referred to by the acronym, *GOK*. The *GOK* (I shall use the Russian acronym) is a structure that was developed under the Soviet system. Previously, the *GOKs* were operated by Yakutalmaz (Yakut Diamond) a Soviet production behemoth that controlled all aspects of production. The *GOK* was the local master organization that ran all the production facilities, contract services and infrastructure associated with the mine and the mining town. Diamond Russia Sakha Company's activity in Sakha is basically a reorganized version of Yakutalmaz. (Borisov, 1994, p. 1)

Diamonds are produced by the *GOKs* and handed over to the Diamond Sorting Center which does preliminary sorting. Technical diamonds and diamond powder is handled by the Yakut Industrial Diamond Unit. The Diamond Sorting Center hands 20 percent of all diamonds to the Republic of Sakha Committee of Precious Metals and gives 80 percent of all diamonds to the Moscow Diamond Center.

The Republic of Sakha's Committee of Precious Metals exports all its rough diamonds through Almazexport and all industrial and cut diamonds through Almazyuvelir Export. Almazyuvelir Export (Diamond Jewel Export Company) is owned by the Committee for Precious Metals and Precious Stones. The Republic of Sakha Committee of Precious Metals also distributes diamonds to the local cutting centers.

The 80 percent of the diamonds handed over to the Moscow Diamond Center are sorted and distributed to cutting centers in Russia or exported as rough diamonds (the majority value of diamonds) through Almazexport. Industrial diamonds and pieces left over after cutting diamonds in Russia are sold through Almazyuvelir Export.

In short, any export must go through Almazexport if it is a rough diamond and Almazyuvelier Export if it is a cut or technical diamond.

5.2.3. Restructuring the Gold Mining Industry

Gold mining in all of Russia, with few exceptions, is in ruins. In the words of one of Russia's leading English-language business monthlies:

> The situation is so dire that the leading figures in the gold business are inclined to blame the situation on "Western lootage." This reaction is rather typical of the Russian mentality. Whenever anything fails, people begin to point fingers at the enemy. However, in this case the real "enemy" is clear: Russia's own carelessness and short-sightedness. (*Delovye Lyudi*, 1995, p. 14)

Russia produces about 100 tons of gold despite a plan to produce 149 tons. (Guseinov, 1995, p. 84) Russian production of newly mined gold may be as low as 85 tons of gold, since at least 12 tons of gold reported in the first seven months production figures were remelted scrap gold. (*Delovye Lyudi*, 1995, p. 84) Sakha produces about 21–25 percent of Russia's gold. There are many general problems that are all connected with the gold mining industry's inability to operate efficiently within the Ministry of Precious Metal and

Precious Stones' strict control over the industry and the Russian government's bungled attempt at reforming the industry.

Russian law allows private gold production, but the government remains the monopoly purchaser of gold in the country. Producers can send gold only to certain Russian refineries and then receive payment through government channels. Refineries may be set up by producers, which is being done. Russia restricts the import and export of gold and gold bars. Sales are made by the Russian government, through banks holding appropriate licenses. Only 150 banks are licensed to handle gold operations, and the Russian government is planning to review these licenses in 1996. (Guseinov, 1995, p. 86) The gold that the Russian government "gives" regions and republics is given as their share of the resource (Sakha receives 20 percent of the gold it produces), and it cannot be sold outside the official government channel. The Russian government has a plan for creating gold-backed securities in 1996 and these securities may be used as an instrument for exporting gold in the future. (Guseinov, 1995, p. 85)

The purchase price of gold is also set by the Russian government. Before 1993 Russia would pay producers significantly less than the world market price for gold, but prices of inputs (labor, capital, energy) were also priced extremely low. Now the state price of Russian gold is indexed to the world price of gold, but the costs of energy, materials and labor have rocketed. In 1994–1995, domestic gold prices have gone up 2.2 times, while fuel prices increased seven to eight times. (*Delovye Lyudi*, 1995, p. 14) In 1993 and 1994, the Sakha government received between $250–$267/oz., according to my estimates, based on gross earnings. *Delovye Lyudi* reported that in 1995, the Russian government was paying about $370/oz. (60,000 rubles/gram) and at the end of 1995, dropped its price to $332/oz. (54,000 rubles/gram). The price of gold was about $385/oz. in mid-July 1996 (64,150 current rubles). In order to put the gold industry's balance sheet in the black, the government would have to pay $536/oz. (87,000 rubles/gram) according to *Delovye Lyudi*. (*Delovye Lyudi*, 1995, p. 14) Domestic jewelry production has dropped its demand for Russian gold to a mere eight percent of its previous demand. (Guseinov, 1995, p. 86)

The Russian government extends credits to mining enterprises, but usually with long delays (up to nine months). (*Delovye Lyudi*, 1995, p. 14) The Russian government budgeted 10 trillion rubles (about $2 billion) to purchase gold from Russian producers, but only paid out about 1.1 trillion rubles ($240 million) in 1995. In December 1995, the Russian government owed producers 390 billion rubles ($85 million) for gold it received. (Guseinov, 1995, p. 84) The gold enterprises, left with little or no working capital and located in remote areas, often cannot pay for the fuel, energy and supplies they need for the summer working season, when 85 percent of the gold is produced. In the Russian Far East, it was reported that private prospectors, illegally, began to pay themselves in gold nuggets. (*Delovye Lyudi*, 1995, p. 14) In Magadan, gold prospectors were arrested at the port for attempting to smuggle gold from Russia. (*Delovye Lyudi*, 1995, p. 14) The prospectors defended themselves by stating that after two years of delivering gold to the government without any

compensation they decided to pay themselves. (*Delovye Lyudi*, 1995, p. 14) Unmanageable debt means that the companies only operate the most accessible and most profitable deposits and have laid off thousands of employees.

Starting in 1994, Yakutsk Gold Company in Sakha fired 7,000 out of 30,000 workers within a year and a half. At the same time, independent prospectors also operate under extremely difficult financial regimes. Prospectors spend on the average, 25 percent of gross income on direct costs and 65 percent on taxes, leaving about ten percent for wages (which is taxed at an additional 12%), only then leaving profits. (*Delovye Lyudi*, 1995, p. 14) Kular Gold Company, a company of 2,000 people, was officially declared bankrupt in 1994, and was re-organized as five independent prospector groups (known as *artels* in Russian). (Goskomstat-Sakha, 1995a, p. 17) In 1996, Kular Gold Company was no longer listed as a company on the statistical bulletins top industrial companies. In 1996, a new company was created, Sakha Gold Company, in order to "solve the problem of stabilizing and developing the gold mining complex. (Goskomstat-Sakha, 1996a, p. 33)

Two companies (Aldan Gold Company and Gold of Dzhugzhura) made a profit in both years, while all the other companies (Nezhdansk Gold Company, Deputask Tin Company, Indigir Gold and Kular Gold) all went from profits of two or more million dollars in 1993 to losses that jointly exceed 100 million dollars in 1994.

Gold mining companies can not use their production to collateralize foreign loans. (*Delovye Lyudi*, 1995, p. 16) Since non-refined metal cannot be used as collateral. The Russian Parliament is considering legislation which would give tax incentives for mining in the Russian North, lift restrictions on using profits to finance capital investment in production, and give gold companies customs' waivers for importing equipment. The producers pay a federal value-added tax on all inputs, but the government sets the gold price and is the only buyer. In this way, the companies cannot pass these additional costs to the consumer.

Meanwhile, in the beginning of 1995, the chairman of the Russian State Committee of Precious Metals and Stones expected investments of $10 billion dollars and a 50 percent increase in production by the year 2000. (*Delovye Lyudi*, 1995, p. 14) In late 1995, the plan was for Russia to open 21 new mines and rehabilitate seven mines at the cost $5.4 billion. (*Delovye Lyudi*, 1995, p. 86) The same year the Russian government only came up with one-tenth of the money it promised the industry, a mere $240 million. (Guseinov, 1995, p. 85) Other problems simply relate to the non-competitiveness of an industry that was overcapitalized under the command and control economy of the Soviet Union. The elaborate infrastructure of the old Soviet Union can no longer be maintained for the remote mining regions.

Russia has gone from the number two world gold producer to number five within ten years.[5] Many of the accessible and low-cost placer[6] mining deposits have been exhausted. Sergey Vokhomskiy, chief engineer at Siberia's Sibgiprozoloto Institute, estimates that the total existing gold reserves in Chukotka, Magadan Region and the Republic of Sakha will last only ten years. (BBC Monitoring Service, 1996, 23 February) In Russia, 70 percent of gold production comes from placer mining, even though Russia's lode[7] reserves

are 80 percent of all reserves. (Chomchoyev, 1996, February, personal communication) The available lode deposits require large up-front investments that cannot be financed by the Russian market. Foreign investors are wary about investing in projects in Russia that have the time scale of seven or more years' return on investment which a lode mine project requires. Foreign investors have no interest when there are difficulties in exporting gold and setting up collateral for investment. Although various joint ventures in lode mining have been in operation in the past two years, there is no evidence of actual investment and production.

One example is a 1995 report that two major mining companies, Lonrho (UK) and Gencore (South Africa) were considering using bacterial leaching on two lode mines in Sakha, the Nezhdaninka deposit, estimated at 480 tons of gold, and the Kyuchus deposit, estimated at 178 tons. (*The Financial Times*, 1995, 17 August) A Gencor consulting geologist noted in an interview that he did not know whether the gold could be extracted economically and that the company was worried that Russia taxed revenue, rather than profit. (*The Financial Times*, 1995, 17 August) Another example, in 1996, is the Kuranakh Deposit in southern Sakha, where a mine operated by Aldan Gold has formed a joint venture with Sakha Gold Company and Echo (Bay) Minerals Co. of Canada to improve the productivity of an existing operation. (*Izvestiya*, 1996, 16 January) The partners hope the mine will produce seven to eight tons of gold a year (about 25 percent of Sakha's current production) over the next 15 years, rather than the current five tons per year. (Klamann, 1996, 08 April) The Canadian Company hopes to receive a 50 percent stake in the project, with a 30/20 holding by Aldan Gold and Sakha Gold Companies. (Klamann, 1996, 08 April) In addition, the joint venture is hoping to operate under a production-sharing agreement, where the Sakha Republic will receive five percent of net profits and, at the same time, reduce profits' tax by 50 percent. (*Segodnya*, 1996, 09 April) The Canadian Company representative made it clear in April 1996, that not everything was assured and that a construction decision was going to be made in early 1997. (Klamann, 1996, 08 April) Most foreign mining companies will probably look at the experience of the Magadan lode operation at Kubaka, where the US Cyprus Minerals Company was plagued with problems of promised payments in gold that took years to arrange. (*Novecon*, 1995, 03 November)

5.2.4. Restructuring the Oil and Gas Industry

Currently, all activities are carried out under the umbrella of the Sakha Oil and Gas National Company (Sakhaneftegaz), which oversees and controls a network of about 20 companies that employ about 6,000 people. Formerly, the industry was dominated by Yakut Gas Industrial Company (Yakutgazprom). Sakha Oil and Gas Company was formed in 1992 as a national oil company that would coordinate the entire industry and carry out all negotiations with foreign companies on behalf of the government. In reality, they have very little autonomy. The Sakha Oil and Gas Company was privatized in 1996 with most of its stock remaining under the control of the Sakha government. Further evidence of the close

ties with the government is that Ruslan Shipkov, the original president of Sakha Oil and Gas Company, was appointed in 1995 as deputy in charge of energy to the Prime Minister of Sakha. This appointment squashed rumors that Shipkov was planning to run for president against the incumbent Nikolaev.

The entire oil and gas industry, like the diamond industry, is under the control of the Sakha government. There are about 20 different oil and gas industry related firms (production companies, geophysical companies, distribution companies, etc.), but they have no real independence. Sakha Oil and Gas Company was originally created to act as a holding company for the majority blocks of stock or controlling blocks of stock from privatized enterprises within the oil and gas industry. Sakha Oil and Gas Company has an octopus-like control over every company in the entire industry.

Yakut Gas Industrial Company continues to be the largest company and carries out most development in the field. Yakut Gas Company (Yakutgaz), is a different company that carries out delivery to municipalities and industry. In Yakutsk, a municipal gas distributor takes over from Yakut Gas Company. Newer, smaller firms such as Lena Oil and Gas Company and Tass-Yuryakh Oil Company were set up and given specific fields and are mostly involved in preparing for oil production. Several geophysical companies work as contractors to the development firms.

There is little current activity or interest by foreign developers and investors in participating in local energy supply projects or any foreign exchange earning projects conceived by Sakha business and government entities. The only foreign involvement is either direct purchases of foreign equipment or initial contract work related to the Korean and Japanese interests in the Sakha-Japan pre-feasibility study for exporting Sakha gas to Asian markets. The reason is twofold. These foreign companies lack knowlege of entities like the Sakha Oil and Gas Company and the Republic government lacks knowledge about the structure, objectives, behavior and culture of the international petroleum industry and international capital markets. (Tussing, 1995) This in turn affects Sakha's ability to conceptualize projects which are economically viable by international standards, identify promising participants or communicate necessary information. Several oil and gas specialists in the Sakha Republic realize that:

> ... an overall evaluation of the [Sakha energy] projects is that they are interesting and sufficiently supported with adequate resource reserves. Nevertheless, one must not anticipate, in the near future, the execution of these projects, even with the partnership of such economically developed countries like Japan. (Keller, 1994. p. 39)

Although several American businessmen and consultants attempted to put together an investment package and line of credit for the Sakha Oil and Gas Company, they were perpetually foiled by bureaucrats within the various ministries who are not eager to see any independent activities on behalf of the company itself. (Fischer, 1995, personal communication)

Understanding the natural gas pricing practice within Sakha reveals how far it is removed from market pricing and is an example of the pricing problems facing the entire Sakha energy industry. The pricing structure is turned on its head, with the producer receiving the largest price per unit and the retailer the lowest price per unit. The pricing structure is also fixed. The management of the local natural gas distributor in Yakutsk, Yakut Gas Company, is currently contesting the Sakha government's price-fixing policy. In early 1996, gas prices were fixed by the Sakha government at 202,000 rubles (about $42.53) per 1,000 cubic meters at the wellhead to benefit Yakut Gas Industrial Company, the producer. Out of the total Yakut Gas Industrial Company receives, 174,000 rubles (about $36.63) per 1,000 cubic meter goes to Lena Gas Company, the trunk pipeline operator, and 28,000 ($5.89) per 1,000 cubic meter goes to Yakut Gas Company, the local distributor. This equals about $2.95, $2.54, and $0.41 per million BTU, respectively. For comparison, in 1994, European Union CIF (cost + insurance freight) gas was $2.4 per million BTU, US wellhead gas was $1.8 per million BTU and crude oil averaged at $2.7 per million BTU. The Sakha price is about 20 percent more than the average price of European delivered gas. This price is also substantial at the rate of $2.52 per million BTU or 86 percent of the total price. In addition, local gas distribution does not even manage to recover 14 percent share of the price from the consumer. The Sakha government does not allow Yakut Gas Company to cut off houses or companies for non-payment. When Yakut Gas Company turned off a major commercial consumer for non-payment, the President of Sakha merely ordered the valves to be re-opened.

Simultaneously, the government is pushing Yakut Gas Company to start up a facility that will allow lorries and cars to operate on natural gas. The facility was purchased for $10 million in the early 1990s. The government, however, will not provide funds for an additional facility to "dry out" (take out water and heavier hydrocarbons that are present at Yakut winter temperatures) the existing natural gas supply. It was discovered that without this facility it is impossible to get the proper "dryness" of gas so vehicles can operate. Moreover, in order to bring down the price per unit to convert the vehicles to burn natural gas it would require legislation that requires all government-owned cars to convert. But almost all the main government companies have received waivers from the government and are not required to convert. The main motivation for converting to natural gas power is to improve air quality and reduce diesel and gasoline (petrol) emissions from November through February. At temperatures below -40 degrees (F or C) a phenomenon known as ice fog (a temperature inversion that traps all the vehicle emission) blankets the city of Yakutsk. The ice fog is so thick that from November to February it is virtually impossible to see buildings across the street. At its worst, visibility is not more than ten feet within Yakutsk, while several miles outside the city the sun may be shining brightly.

Map 2.4. showed the major gas pipelines in Yakutsk, in addition to the oil and gas areas of the Republic of Sakha. The delivery system from the western oil and gas fields is used for the diamond producing town of Mirnyy for power generation, central heat and

household use (cooking). The gas generated power is tied into the power grid that relies heavily on the Vilyui River hydropower station.

Developing Sakha's internal market for petroleum products is focused around two basic goals:

- To unify the central gas pipeline network with the western gas pipeline network and provide gas to the small communities between the two areas.[8] This includes extending the existing pipeline north to the diamond mining towns of Aikhal and Udachnyy; and
- to develop crude-oil reserves in southwest Sakha[9] and possibly to construct a 1,500 kilometer (932 miles) crude-oil pipeline to a refinery at Angarsk (near Irkutsk, 1,500 kilometers from Yakutsk) for the Russian domestic market or for the construction of a local refinery.

Sakha Oil and Gas Company is planning to build two refineries that have a combined capacity of 400,000 tons a year. (Sakha Oil and Gas Company, 1993, p. 2) The proposal for developing the Talakan oil field [Western Sakha] plans to produce 75,000,000 tons (525,000,000 barrels) of oil at the rate of 2,500 tons (17,500 barrels) of oil a year. The cost of the project is estimated at $3.5 billion by the Sakha government which anticipates a revenue of $15 billion for the life of the project. A consortium (with a production sharing agreement) of the Sakha Oil and Gas Company, the Diamond Russia Sakha Company and foreign investors (who can receive 32.3 percent of the revenue) or a joint stock company with the same partners (with 18.2 percent of the revenue share of the foreign investor) is proposed for the project, depending on the anticipated tax structure. The proposal for developing the Middle Botuobin field plans for the production of about 50,000,000 tons (350,000,000 barrels). (Sakha Oil and Gas Company, 1993, p. 2)

5.3. Industrial Performance

In comparing the performance of the economic sectors, we see that only the industry sector and the construction sector made a profit from 1992 to 1995. (Goskomstat-Sakha, various years) Industry profits, as we shall see later on, were largely due to the profitability of diamond mining. The transport sector suffered losses after 1994. The retail sector and the utilities and public services sector have not been in the black since 1992 and lost over $70 million each in 1995. The encouraging trend is in the wholesale supply sector, which showed a recovery in 1995 almost as great as its loss in 1994, from minus $51 million to plus $43 million.

The performance of the main industrial firms in Sakha between 1993 and 1995 shows that the three years between 1993 and 1995 are the watershed between firms that were successful only under the old system and those firms that were able to adapt to the new market conditions. Market conditions left a few resource extraction companies, as well

as the construction industry, extremely profitable. For most of the economy, despite heavy government support for some firms, 1994 was the beginning of financial disaster.

The following analysis is based on Tables 5.5. through 5.7. which review and compare basic financial information for principal enterprises in the industrial sector, as selected by the Sakha statistical office, for the years 1993, 1994 and 1995. Table 5.5. is a ranking of the enterprises based on the size of gross earning, from largest to smallest. Table 5.6. is a ranking of enterprises based on the size of profit/loss, from largest to smallest. Table 5.7. is a ranking of enterprises of profit to earnings ratio from largest to smallest. The profit to earnings ratio is profit or loss divided by gross earnings.

Gross earnings in 1993				Gross earnings in 1993			
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	952,842	$ 931.36	14	Yakut Cement	4,581	$ 4.48
2	Yakut Coal	211,930	$ 207.15	15	Aldan mica	4,134	$ 4.04
3	Yakut Energy	173,962	$ 170.04	16	Yakutsk Construction & Design	3,975	$ 3.89
4	Indigir Gold	107,036	$ 104.62	17	Zhatai Operation & Repair	2,784	$ 2.72
5	Aldan Gold	100,710	$ 98.44	18	Bestyakh Reinforced Concrete	2,627	$ 2.57
6	Sakha-As (food processing)	45,881	$ 44.85	19	Sewing of the North	2,235	$ 2.18
7	Gold of Dzhugdzhura	32,232	$ 31.51	20	Sakha Furniture	1,810	$ 1.77
8	Kular Gold	28,435	$ 27.79	21	Peleduisk Operation & Repair	1,412	$ 1.38
9	Deputask Tin	20,459	$ 20.00	22	Sardaana	1,350	$ 1.32
10	Yakut Gas Industry	16,363	$ 15.99	23	Yakut Timber Fuel Industry	815	$ 0.80
11	Ministry Agriculture of Sakha	11,439	$ 11.18	24	Tabaginsk Timber Plant	781	$ 0.76
12	Nezhdansk Gold	7,987	$ 7.81	25	Yakut Construction Material	308	$ 0.30
13	Timber Construction Plant	5,778	$ 5.65	26	East Quartz and Color	303	$ 0.30

Table 5.5a. Gross earnings of selected companies 1993.

		Gross earnings in 1994				Gross earnings in 1994	
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	2,546,617	$ 1,147.24	25	Lena	5,035	$ 2.27
2	Yakut Coal	781,310	$ 351.98	26	Sardaana	4,320	$ 1.95
3	Yakut Energy	652,188	$ 293.81	27	Markhinsk Construction & Design	4,140	$ 1.87
4	Aldan Gold	244,834	$ 110.30	28	Pokrovsk Construction	3,788	$ 1.71
5	Indigir Gold	204,751	$ 92.24	29	Balyksit (fish processing)	3,717	$ 1.67
6	Sakha-As (food processing)	148,222	$ 66.77	30	Yakut Timber Fuel Industry	3,681	$ 1.66
7	Gold of Dzhugdzhura	66,085	$ 29.77	31	Yaroslav Timber Plant	3,658	$ 1.65
8	Bread Factories	64,123	$ 28.89	32	Leather shoe Industry	3,576	$ 1.61
9	Yakut Gas Industry	61,222	$ 27.58	33	Mechanical Repair Shop	2,442	$ 1.10
10	Deputask Tin	45,051	$ 20.30	34	Sewing of the North	1,840	$ 0.83
11	Kular Gold	40,554	$ 18.27	35	Tabaginsk Timber Plant	1,348	$ 0.61
12	Ministry Agriculture of Sakha	25,519	$ 11.50	36	Iss-Uss	979	$ 0.44
13	Timber Construction Plant	22,111	$ 9.96	37	Yakut Construction Material	835	$ 0.38
14	Yakut Cement	21,208	$ 9.55	38	East Quartz and Color	773	$ 0.35
15	Nezhdansk Gold	15,985	$ 7.20	39	Khandiga Construction	617	$ 0.28
16	Yakutsk Construction & Design	13,707	$ 6.17	40	Luch	537	$ 0.24
17	Zhatai Operation & Repair	13,585	$ 6.12	41	Aldan Construction Industry	507	$ 0.23
18	Bestyakh Reinforced Concrete	13,540	$ 6.10	42	Uran-Uus	485	$ 0.22
19	Yakut Timber	12,529	$ 5.64	43	SangarConstruction	446	$ 0.20
20	Yakutsk Factory	12,257	$ 5.52	44	Maya Furniture	321	$ 0.14
21	Aldan mica	10,132	$ 4.56	45	Timber Production	312	$ 0.14
22	Peleduisk Operation & Repair	7,662	$ 3.45	46	ONTIP	174	$ 0.08
23	Sakha Furniture	7,079	$ 3.19	47	Churapchin Timber Combine	170	$ 0.08
24	Typography	5,370	$ 2.42	48	Namsk Timber Combine	148	$ 0.07

Table 5.5b. Gross earnings of selected companies 1994.

		Gross earnings in 1995				Gross earnings in 1995	
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	5,731,750	$ 1,250.33	20	Sakha Furniture	16,076	$ 3.51
2	Yakut Coal	1,710,054	$ 373.03	21	Diamond [Cutting] Company	15,280	$ 3.33
3	Yakut Energy	1,199,691	$ 261.70	22	Typography	14,711	$ 3.21
4	Aldan Gold	405,101	$ 88.37	23	Sardaana	9,099	$ 1.98
5	Indigir Gold	400,049	$ 87.27	24	Sewing of the North	8,174	$ 1.78
6	Sakha-As (food processing)	358,933	$ 78.30	25	Balyksit (fish processing)	7,708	$ 1.68
7	Yakut Gas Industry	207,007	$ 45.16	26	Pokrovsk Construction	7,606	$ 1.66
8	Deputask Tin	98,906	$ 21.58	27	Sakha-Oiuur (legal services)	6,976	$ 1.52
9	Yakut Cement	65,475	$ 14.28	28	Yakut Construction Material	3,000	$ 0.65
10	Timber Construction Plant	51,753	$ 11.29	29	East Quartz and Color	2,016	$ 0.44
11	Ministry Agriculture of Sakha	38,847	$ 8.47	30	Berdigestyakh Diamond Cutting Plant	1,528	$ 0.33
12	Yakutsk Construction & Design	38,094	$ 8.31	31	Pokrovsk Diamond Cutting Plant	774	$ 0.17
13	Bestyakh Reinforced Concrete	32,842	$ 7.16	32	Borogonsk Diamond Cutting Plant	485	$ 0.11
14	Zhatai Operation & Repair	31,917	$ 6.96	33	Vekhneviluisk Diamond Cutting Plant	348	$ 0.08
15	Gold of Dzhugdzhura	28,936	$ 6.31	34	Sangara Diamond Cutting Plant	322	$ 0.07
16	Nezhdansk Gold	27,733	$ 6.05	35	Namsk Diamond Cutting Plant	277	$ 0.06
17	Yakut Timber Fuel Industry	26,211	$ 5.72	36	Amginsk Diamond Cutting Plant	124	$ 0.03
18	Yakut Timber	26,211	$ 5.72	37	Tattinsk Diamond Cutting Plant	88	$ 0.02
19	Aldan mica	17,068	$ 3.72	38	Khandiga Diamond Cutting Plant	44	$ 0.01

SOURCE 5.5a–c: GOSKOMSTAT-Sakha, 1994b, p. 49, 84; GOSKOMSTAT-Sakha, 1995b, p.8-9, 13-14; GOSKOMSTAT-Sakha, 1996b, p. 22, 25.

Table 5.5c. Gross earnings of selected companies 1995.

	Profit/Loss in 1993				Profit/Loss in 1993		
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	222158	$ 217.15	24	Lena	69	$ 0.07
2	Yakut Coal	63595	$ 62.16	25	Leather shoe Industry	68	$ 0.07
3	Indigir Gold	42346	$ 41.39	26	Balyksit (fish processing)	62	$ 0.06
4	Aldan Gold	10891	$ 10.65	27	Typography	50	$ 0.05
5	Gold of Dzhugdzhura	5800	$ 5.67	28	Khandiga Construction	37	$ 0.04
6	Yakut Energy	4422	$ 4.32	29	Mechanical Repair Shop	36	$ 0.04
7	Kular Gold	4108	$ 4.02	30	Markhinsk Construction & Design	36	$ 0.04
8	Sakha-As (food processing)	2263	$ 2.21	31	Iss-Uss	30	$ 0.03
9	Deputask Tin	2202	$ 2.15	32	Bestyakh Reinforced Concrete	22	$ 0.02
10	Nezhdansk Gold	2127	$ 2.08	33	Uran-Uus	8	$ 0.01
11	Yakutsk Construction & Design	797	$ 0.78	34	Maya Furniture	3	$ 0.00
12	Timber Construction Plant	655	$ 0.64	35	Churapchin Timber Combine	2	$ 0.00
13	Yakut Cement	622	$ 0.61	36	ONTIP	1	$ 0.00
14	Yakutsk Factory	600	$ 0.59	37	Luch	-1	$ 0.00
15	Yakut Gas Industry	480	$ 0.47	38	SangarConstruction	-5	$ 0.00
16	Bread Factories	411	$ 0.40	39	Timber Production	-6	-$ 0.01
17	Sakha Furniture	408	$ 0.40	40	Namsk Timber Combine	-6	-$ 0.01
18	Sewing of the North	382	$ 0.37	41	Yakut Construction Material	-10	-$ 0.01
19	Sardaana	239	$ 0.23	42	East Quartz and Color	-11	-$ 0.01
20	Ministry Agriculture of Sakha	222	$ 0.22	43	Aldan mica	-30	-$ 0.03
21	Pokrovsk Construction	200	$ 0.20	44	Yakut Timber Fuel Industry	-71	-$ 0.07
22	Zhatai Operation & Repair	160	$ 0.16	45	Yaroslav Timber Plant	-170	-$ 0.17
23	Yakut Timber	131	$ 0.13				

Table 5.6a. Profit and loss for selected enterprises for 1993.

		Profit/Loss In 1994				Profit/Loss in 1994	
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	1279471	$ 576.40	24	Balyksit (fish processing)	-65	-$ 0.03
2	Yakut Coal	48108	$ 21.67	25	Uran-Uus	-102	-$ 0.05
3	Aldan Gold	27382	$ 12.34	26	Yaroslav Timber Plant	-131	-$ 0.06
4	Yakut Energy	6955	$ 3.13	27	Markhinsk Construction & Design	-148	-$ 0.07
5	Gold of Dzhugdzhura	6118	$ 2.76	28	Mechanical Repair Shop	-300	-$ 0.14
6	Yakut Cement	3295	$ 1.48	29	Sewing of the North	-431	-$ 0.19
7	Bestyakh Reinforced Concrete	2916	$ 1.31	30	East Quartz and Color	-437	-$ 0.20
8	Yakutsk Factory	2800	$ 1.26	31	Leather shoe Industry	-540	-$ 0.24
9	Yakutsk Construction & Design	2643	$ 1.19	32	Luch	-790	-$ 0.36
10	Sakha Furniture	984	$ 0.44	33	Lena	-835	-$ 0.38
11	Yakut Timber	596	$ 0.27	34	Sakha-As (food processing)	-914	-$ 0.41
12	Pokrovsk Construction	560	$ 0.25	35	Timber Construction Plant	-925	-$ 0.42
13	Sardaana	348	$ 0.16	36	Nezhdansk Gold	-1162	-$ 0.52
14	Typography	292	$ 0.13	37	Bread Factories	-1292	-$ 0.58
15	Khandiga Construction	107	$ 0.05	38	Yakut Timber Fuel Industry	-1381	-$ 0.62
16	Aldan Construction Industry	54	$ 0.02	39	Peleduisk Operation & Repair	-1961	-$ 0.88
17	Iss-Uss	19	$ 0.01	40	Ministry Agriculture of Sakha	-2875	-$ 1.30
18	Aldan mica	13	$ 0.01	41	Zhatai Operation & Repair	-3104	-$ 1.40
19	Maya Furniture	1	$ 0.00	42	Deputask Tin	-19753	-$ 8.90
20	Yakut Construction Material	-6	$ 0.00	43	Yakut Gas Industry	-34245	-$ 15.43
21	Churapchin Timber Combine	-7	$ 0.00	44	Indigir Gold	-34788	-$ 15.67
22	Timber Production	-9	$ 0.00	45	Kular Gold	-157458	-$ 70.93
23	SangarConstruction	-29	-$ 0.01				

Table 5.6b. Profit and loss for selected enterprises for 1994.

	Profit/Loss in 1995				Profit/Loss in 1995		
		millions of rubles	millions of dollars			millions of rubles	millions of dollars
1	Diamond Russia Sakha Company	2,802,428	$ 611.33	18	Pokrovsk Diamond Cutting Plant	-18	$ 0.00
2	Yakut Coal	148,334	$ 32.36	19	Pokrovsk Construction	-90	-$ 0.02
3	Yakut Energy	55,446	$ 12.10	20	Namsk Diamond Cutting Plant	-116	-$ 0.03
4	Indigir Gold	34,361	$ 7.50	21	Berdigestyakh Diamond Cutting Plant	-198	-$ 0.04
5	Aldan Gold	31,969	$ 6.97	22	Tattinsk Diamond Cutting Plant	-211	-$ 0.05
6	Zhatai Operation & Repair	25,967	$ 5.66	23	Maya Diamond Cutting Plant	-312	-$ 0.07
7	Yakut Gas Industry	15,577	$ 3.40	24	Amginsk Diamond Cutting Plant	-392	-$ 0.09
8	Yakut Cement	6,473	$ 1.41	25	Khandiga Diamond Cutting Plant	-461	-$ 0.10
9	Yakutsk Construction & Design	4,586	$ 1.00	26	Balyksit (fish processing)	-711	-$ 0.16
10	Timber Construction Plant	4,131	$ 0.90	27	East Quartz and Color	-910	-$ 0.20
11	Typography	3,182	$ 0.69	28	Yakut Timber Fuel Industry	-919	-$ 0.20
12	Sakha Furniture	3,012	$ 0.66	29	Sewing of the North	-959	-$ 0.21
13	Yakut Construction Material	2,026	$ 0.44	30	Ministry Agriculture of Sakha	-1,934	-$ 0.42
14	Diamond [Cutting] Company	1,936	$ 0.42	31	Sakha-As (food processing)	-1,976	-$ 0.43
15	Bestyakh Reinforced Concrete	1,800	$ 0.39	32	Gold of Dzhugdzhura	-2,010	-$ 0.44
16	Sardaana	172	$ 0.04	33	Nezhdansk Gold	-2,150	-$ 0.47
17	Aldan mica	165	$ 0.04				

SOURCE 5.6a–c: GOSKOMSTAT-Sakha, 1994b, p. 84; GOSKOMSTAT-Sakha, 1995b, p. 13–14; GOSKOMSTAT-Sakha, 1996b, p. 25.

Table 5.6c. Profit and loss for selected enterprises for 1995.

Profit to earnings ration (profit or loss/gross earnings) in 1993			Profit to earnings ration (profit or loss/gross earnings) in 1993		
1	Indigir Gold	39.56%	14	Deputask Tin	10.76%
2	Yakut Coal	30.01%	15	Zhatai Operation & Repair	5.75%
3	Nezhdansk Gold	26.63%	16	Sakha-As (food processing)	4.93%
4	Diamond Russia Sakha Company	23.32%	17	Yakut Gas Industry	2.93%
5	Sakha Furniture	22.54%	18	Yakut Energy	2.54%
6	Yakutsk Construction & Design	20.05%	19	Ministry Agriculture of Sakha	1.94%
7	Gold of Dzhugdzhura	17.99%	20	Bestyakh Reinforced Concrete	0.84%
8	Sardaana	17.70%	21	Aldan mica	-0.73%
9	Sewing of the North	17.09%	22	Yakut Construction Material	-3.25%
10	Kular Gold	14.45%	23	East Quartz and Color	-3.63%
11	Yakut Cement	13.58%	24	Yakut Timber Fuel Industry	-8.71%
12	Timber Construction Plant	11.34%	25	Peleduisk Operation & Repair	-59.77%
13	Aldan Gold	10.81%			

Table 5.7a. Profit to earnings ration (profit or loss divided by earnings) for 1993.

Profit to earnings ration (profit or loss/gross earnings) in 1994			Profit to earnings ration (profit or loss/gross earnings) in 1994		
1	Diamond Russia Sakha Company	50.24%	24	Timber Production	-2.88%
2	Yakutsk Factory	22.84%	25	Markhinsk Construction & Design	-3.57%
3	Bestyakh Reinforced Concrete	21.54%	26	Yaroslav Timber Plant	-3.58%
4	Yakutsk Construction & Design	19.28%	27	Churapchin Timber Combine	-4.12%
5	Khandiga Construction	17.34%	28	Timber Construction Plant	-4.18%
6	Yakut Cement	15.54%	29	SangarConstruction	-6.50%
7	Pokrovsk Construction	14.78%	30	Nezhdansk Gold	-7.27%
8	Sakha Furniture	13.90%	31	Ministry Agriculture of Sakha	-11.27%
9	Aldan Gold	11.18%	32	Mechanical Repair Shop	-12.29%
10	Aldan Construction Industry	10.65%	33	Leather shoe Industry	-15.10%
11	Gold of Dzhugdzhura	9.26%	34	Lena	-16.58%
12	Sardaana	8.06%	35	Indigir Gold	-16.99%
13	Yakut Coal	6.16%	36	Uran-Uus	-21.03%
14	Typography	5.44%	37	Zhatai Operation & Repair	-22.85%
15	Yakut Timber	4.76%	38	Sewing of the North	-23.42%
16	Iss-Uss	1.94%	39	Peleduisk Operation & Repair	-25.59%
17	Yakut Energy	1.07%	40	Yakut Timber Fuel Industry	-37.52%
18	Maya Furniture	0.31%	41	Deputask Tin	-43.85%
19	Aldan mica	0.13%	42	Yakut Gas Industry	-55.94%
20	Sakha-As (food processing)	-0.62%	43	East Quartz and Color	-56.53%
21	Yakut Construction Material	-0.72%	44	Luch	-147.11%
22	Balyksit (fish processing)	-1.75%	45	Kular Gold	-388.27%
23	Bread Factories	-2.01%			

Table 5.7b. Profit to earnings ration (profit or loss divided by earnings) for 1994.

Profit to earnings ration (profit or loss/gross earnings) in 1995			Profit to earnings ration (profit or loss/gross earnings) in 1995		
1	Zhatai Operation & Repair	81.36%	17	Aldan mica	0.97%
2	Yakut Construction Material	67.53%	18	Sakha-As (food processing)	-0.55%
3	Diamond Russia Sakha Company	48.89%	19	Pokrovsk Construction	-1.18%
4	Typography	21.63%	20	Pokrovsk Diamond Cutting Plant	-2.33%
5	Sakha Furniture	18.74%	21	Yakut Timber Fuel Industry	-3.51%
6	Diamond [Cutting] Company	12.67%	22	Ministry Agriculture of Sakha	-4.98%
7	Yakutsk Construction & Design	12.04%	23	Gold of Dzhugdzhura	-6.95%
8	Yakut Cement	9.89%	24	Nezhdansk Gold	-7.75%
9	Yakut Coal	8.67%	25	Balyksit (fish processing)	-9.22%
10	Indigir Gold	8.59%	26	Sewing of the North	-11.73%
11	Timber Construction Plant	7.98%	27	Berdigestyakh Diamond Cutting Plant	-12.96%
12	Aldan Gold	7.89%	28	Namsk Diamond Cutting Plant	-41.88%
13	Yakut Gas Industry	7.52%	29	East Quartz and Color	-45.14%
14	Bestyakh Reinforced Concrete	5.48%	30	Tattinsk Diamond Cutting Plant	-239.77%
15	Yakut Energy	4.62%	31	Amginsk Diamond Cutting Plant	-316.13%
16	Sardaana	1.89%	32	Khandiga Diamond Cutting Plant	-1047.73%

SOURCE 5.7a–c: Goskomstat-Sakha, 1994b, p. 49, 84; Goskomstat-Sakha, 1995b, p. 8–9,13–14; Goskomstat-Sakha, 1996b, p. 22, 25.

Table 5.7c. Profit to earnings ration (profit or loss divided by earnings) for 1995.

First, the information presented in Tables 5.5. through 5.7. illustrates the importance of the diamond industry to the Sakha economy. The Russia Sakha Diamond Company stands out as the largest and most profitable industry in Sakha. From 1993 to 1995, the Russia Sakha Diamond Company had a larger gross earning ($931 million in 1993, $1,147 million in 1994, $1,250 million in 1995) than the sum of all the other firms listed in any given year. The Russia Sakha Diamond Company's profit is also larger than the combined profit of the other firms listed by a factor of 1.5 in 1993, a factor of 12.4 in 1994 and a factor of 8.3 in 1995. Moreover, if it was not for the profit generated by the Russia Sakha Diamond Company, the industry sector would have had a $48 million loss in 1994 and a $45 million profit in 1995, instead of a $682 million profit in 1995.

Diamond cutting is a new industry mandated by the Sakha government in 1992, ostensibly to create jobs and to generate the greatest value-added income from diamonds mined in Sakha. The 1995, gross earnings for ten out of the 16 diamond cutting companies and profits/losses for eight out of 16 companies were published for the first time in 1996. The results are clear. Seven of the diamond cutting plants lost about $410,000 on about $880,000 in gross earnings (see Tables 5.5c and 5.6b). Only one diamond cutting company, earning $3.3 million in gross earnings, also earned $420,000 in profit (see Tables 5.5c and 5.6b).

Yakut Coal Company is clearly the second most important company after the Russia Sakha Diamond Company. Yakut Coal Company has the second largest gross earning and the second largest profit from 1993 to 1995. In 1994 and 1995, this was 30 percent of the gross earning of the diamond industry, between $350 and $370 million.

The gold and tin mining enterprises taken together were slightly larger than the coal industry in 1993. In general, gold and tin mining in Sakha, while profitable in 1993, was in a precarious position in 1994. Out of the original six gold and tin mining enterprises, only one firm, the Aldan Gold Company, continues to show a consistent profit. One firm, Kular Gold Company, was liquidated by bankruptcy in 1994 when profits plummeted. Nezhdansk Gold Company also lost money in 1994 and 1995, and went from the 12th largest company to 16th, in terms of gross earnings. The Gold of Dzhugzhura Company was able to hold a $2.76 million profit in 1994, but showed a loss of almost half a million in 1995. At the same time, the Gold of Dzhugzhura Company's gross earnings dropped from about $30 million to $6.3 million. The Indigir Gold Company is the most unusual in the group of precious metals mining companies. Indigir Gold Company went from profits of over $41 million, to losses of more than $15 million between 1993 and 1994. Between 1994 and 1995 the Indigir Gold Company rebounded with a profit of $7.5 million. The Deputask Tin Mining Company continues to gross about $20 million dollars, but continues to lose millions with the collapse of the tin industry within Russia. There is significantly diminished demand for tin in Russia. Interestingly, the Sakha statistical office did not report Deputask Tin Company losses for 1995.

This comparison shows that tin and gold mining companies lost over a quarter of their gross earning from 1993 to 1995. The combined losses in 1994 of Nezhdansk Gold Company, Deputask Tin Company, Indigir Gold and Kular Gold were about $96 million, or 35 percent of the value of gross earnings. It is evident that the gold industry is stabilizing and that it is likely that Aldan Gold Company will survive. It is possible that Indigir Gold, Gold of Dzhugzhura and Nezhdansk Gold companies may survive. Certainly the Deputask Tin Company will not survive without government intervention.

The Yakut Energy Company is the third largest firm in Sakha, and it operates the entire electrical and heating infrastructure for the Republic of Sakha. Its major piece of infrastructure is the Vilyui Hydropower Station, which provides much of the energy for the diamond mining operations. The Yakut Energy Company has the richest and most stable customer in the Republic of Sakha. There is little optimism for quick growth for the Yakutsk Energy Company. The company estimates that 70 percent of their electric transmission lines need to be replaced soon, some are over 30 years old. (Borisov, 1995, p. 2) A plan to expand the Vilyui Hydroelectric Station by building a third dam along the Vilyui River was stopped because the Russia Sakha Diamond withdrew over a dispute about contributions to a joint venture[10] between the diamond company and Yakut Energy that was formed to take on the construction of the dam. (BBC Monitoring Service, 1996, 02 February) The project is currently $26 million in debt and another $134 million is required to finish the dam. (BBC Monitoring

Service, 1996, February 02) The Sakha government closed down a subsidiary of the Russian national energy grid (Unified Energy System Company) operating in the Republic that made a bid to take over the dam project. (BBC Monitoring Service, 1996, 02 February) According to a BBC report, the Sakha government accused the company of "trying to acquire ownership of an incomplete facility, instead of pursuing its stated aim of looking for investment." (BBC Monitoring Service, 1996, February 02) Most likely the Russian Sakha Diamond Company is using market forces to their advantage and playing the hydroelectric company against the gas company. Yakut Gas Company moved from tenth place in gross earnings to seventh place, and turned around losses of $15 million to profits of $3.4 million between 1994 and 1995. The gas company is in trouble primarily because it provides gas and fuel even to customers who cannot pay, like the gold companies. Yakut Gas Company has one captive market, the city of Yakutsk, that relies on gas for all electric power and central heating, as do the villages due north and south on the gas pipeline network. Like the Yakut Energy Company, Yakut Gas is competing to provide the Mirnyy diamond mining area with additional energy needs required if several new kimberlite deposits are opened for mining.

Construction and related companies either failed, or barely survived 1994 and the survivors became profitable. A few construction companies and construction materials companies made excellent profits in the construction boom fueled by Sakha government expenditures on several large construction projects. Consumer goods and services, and most timber-related companies, lost money in 1994. Two firms, the Timber Construction Plant and the Sakha Furniture Company survived to make profits in 1995 of $900,000 and $600,000, respectively. For Sakha Furniture this is a 19 percent profits to gross earnings ratio. In addition, in 1994, Yakut Timber brokered several export timber deals and earned $200,000 profit. Most other industrial enterprises are in trouble, particularly firms involved in food production. A number of reasons can explain why food production is doing poorly, including people's preference for buying foreign imported goods, the cheaper basic food stuffs that can now be purchased through the more competitive small business and individuals and the Sakha government's policy through 1995 to keep bread, tea and butter prices stable.

The Russia Sakha Diamond Company is an all-round success. The company had the fourth biggest profit to earnings ratio of 23 percent in 1993, increasing to the leading ratio of 50 percent in 1994. Although the company dropped to third place in the profit to earnings ratio in 1995, this was not because of a significant drop in its ratio (less than two percent), but the large profits relative to gross earnings that the Zhatai Operation and Repair Company[11] (81 percent return on gross earnings) and the Yakutsk Construction Material Company (68 percent return on gross earnings) earned. At the same time, the Russia Sakha Diamond Company had the lowest percentage of costs to gross earnings of any company in Sakha, as low as 12.5 kopeks (one hundredth of a ruble) per ruble in labor and operating capital costs in 1993 (see Figure 5.10). Russia Sakha Diamond Company's cost estimates exclude disbursement to shareholders (including the Sakha and state government), taxes and capital cost depreciation.

High costs are the main reason that companies struggle with profitability. Low costs are precisely the advantage that the Diamond Russia Sakha enjoys over other companies. Figure 5.10. depicts a Sakha government indicator that shows how many kopeks selected companies pay in costs relative to each ruble they receive in income. In this figure anything greater than 100 means that the company pays out more money than it receives. Figure 5.11. compares gross costs with gross earnings measured in kopeks. In both cases, it is again evident that the diamond industry has some of the lowest costs in Sakha.

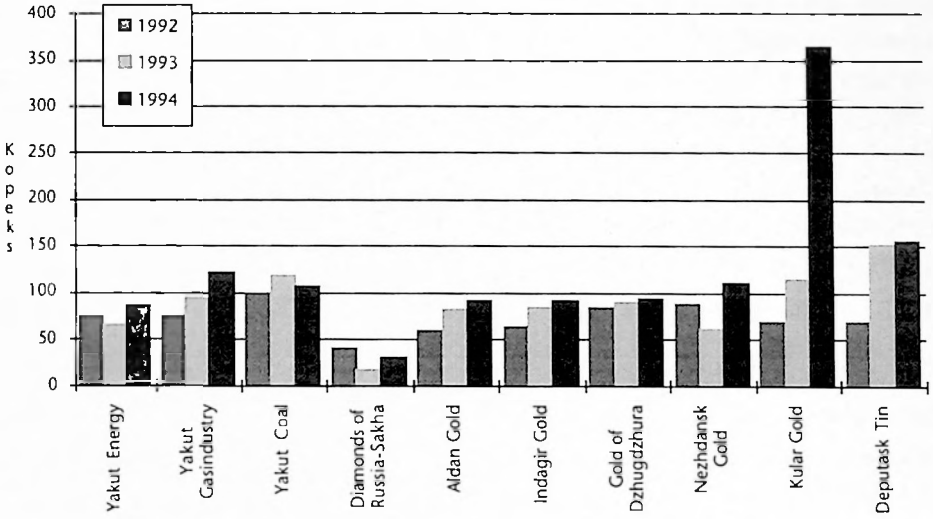


Figure 5.10. Costs measured in kopeks per ruble for selected firms

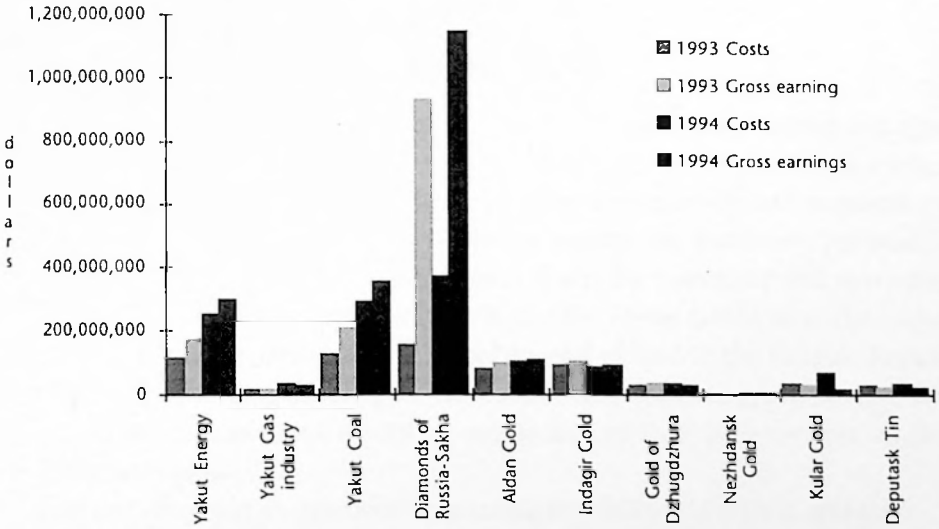


Figure 5.11. A comparison of gross costs to gross earnings for selected firms

In general, there were no great changes between the rank of gross earnings in 1993 and 1994, but the changes were evident in profitability. The gold and tin mining industry were hit the hardest. Out of six mining companies involved in gold mining (five) and tin mining (one), only two companies made a profit (Aldan Gold and Gold of Dzhugdzhura) and only one company increased its profit (Aldan Gold). The remaining gold and tin mining companies lost a combined total of $97 million in 1994, although the same companies made a profit of $49 million in 1993.

The Yakut Coal Company and Yakut Energy (electrical) Company remained profitable, while the Yakut Gas Company lost $15 million in 1994. The Yakut Coal Company probably maintained its profitability because of sales of coal to Japan, which generated over a third of all of its gross earnings. Yakut Energy's main customers are the diamond industry, the coal industry and the gold mining industry, so that profitability is directly dependent on those industries paying their electrical bill. The Yakut Gas Company gains its main revenue from providing gas to the many users in the city of Yakutsk and many companies did not pay their gas bills. The Republic government prohibits the Yakut Gas Company from turning off the gas on anyone. The Yakut Gas Company is currently negotiating with the government for compensation of its losses.

In short, the Russia Sakha Diamond Company makes up the lion's share of the industrial sector, in terms of gross earnings and profit. In a distant second place is the coal industry, which remains profitable. Close behind are the enterprises of the gold and tin mining industries in terms of their combined gross earnings, but in a significantly weaker financial position. Finally, the energy industry, whose profits depend on primary enterprises and the government as its chief customers are performing poorly. While only 20 percent of the top 45 companies lost money in 1993, 58 percent of the top companies lost money in 1994.

5.4. The Hope of Land Privatization

In the late 1980s, seventy years of absolute state-ownership of land and tight control over the use of land by the Soviet centrally planned economic bureaucracy unraveled under Gorbachev's policy of restructuring (*perestroika*) the economy and democratization (*demokratizatiya*) of the society. Before Gorbachev's reform, the economic, political and social system was virtually a singular juggernaut under the command and oversight of the Communist Party of the USSR. The disintegration of the Soviet Union after the August 1991 coup devolved the issue of land ownership and control of land to the Russian Republic. President Yeltsin, demanding sovereignty for Russia, was not as eager to devolve further power-sharing with autonomous republics, provinces and local governments, as he was in asserting Russia's rights.

Russian Parliament's opposition to passing legislation on reform and land privatization was the biggest wedge between Parliament and President Yeltsin in the days leading up to Yeltsin dissolving Parliament in October of 1993. This issue was exacerbated

by the legislators from the northern regions of Russia. A significant lobby against land privatization in the Russian parliament were legislators from northern rural districts, loyal to the current state farm system, and Native legislators who believe that land privatization is simply a ploy for non-Natives to take land away from the indigenous people. (Barsukov, 1992, personal communication)

This northern, anti-privatization of land ownership lobby has a disproportionately large representation in the Russian Parliament, compared to legislators from the more populated western regions of the country, primarily because of an old quota system for northern autonomous provinces and districts. Liquidating the old parliament did not change the fundamental issues. Nobody in the Russian government wants to tackle the issue of land ownership. It is politically advantageous for legislators to slow or stop land privatization and claim they protect the people's land against the threat of theft by new capitalists. At this time the sweeping planned general economic reform for privatization, land ownership and control of resources associated with democratization and westernization of Russia fizzled. The executive branch of government focused only on privatization of the means of production, side-stepping the more fundamental issues of land ownership.

Land privatization within Sakha is extremely stunted by the general inertia of the issue within the Russian Federation. Starting in 1991, the Republic of Sakha was extremely quick to claim land ownership of the entire territory of the Republic and all the resources within its borders. For the most part, the Sakha government's greatest land transfers were to municipal governments. (Goskomstat-Sakha, 1994a) Private land still represents a tiny fraction of Sakha's territory. The only real private ownership of property, in the western sense, is private ownership of individual apartments and personal agricultural plots.

A small amount of land permitted for private ownership would have a great influence on the issue of land ownership. The northern lawmakers and government who count on resources as a chief source of revenue see holding land in public ownership as a top priority. During the Sakha Parliament land privatization debates of 1993, a reformist legislator asked how I would counter the argument that only one percent of the land in capitalist Alaska was in private hands.[12] The reform-minded legislator was extremely amused when a simple calculation showed that one percent of Sakha's territory would be equivalent to an area 40 times the territory of Yakutsk, the capital city. In other words, even a small amount of land privatization can be of significant consequence.

5.4.1. Restructuring the Agricultural Sector

The state farm remained the backbone of the animal industry from 1991 until 1993, in Sakha. The first changes introduced in agriculture were related to the nation-wide policy of "self-financing,"[13] significant cuts in central subsidies, privatization rights and the ability to access world markets. (Minakir, 1994, pp. 61–62) The issue of private or even collective ownership of grazing pasture is not resolved and is tied into the promised single Russian radical national law on land privatization that has yet to materialize. The resolution of the

issue of ownership of the actual animals and other capital goods associated with herding (corrals, tractors, all-terrain vehicles) progressed at a snail's pace. To be fair, the state farms did acquire greater local control beginning in 1991, since most of the government decision-making about the industry now occurs on a provincial (in Sakha's case Republic) level through the local, county (*ulus* or *raion*) level. (Tichotsky, 1993, p. 9b)

In the agricultural sector, from about 1989 to 1992, the role of indigenous people's control of the land was integral to the debate on how land privatization in the Russian North might be carried out. (Tichotsky, 1993, p. 96) Native people, in collaboration with environmentalists, made the first successful protest against the Russian gas industry's unchecked development plans in 1989 and called attention to the continuing issue of industry taking over and using lands generally occupied by Native people. The industry's proposed plans for development of gas fields in the Yamal peninsula were delayed and modified because of objections by environmentalists, many of whom were from the scientific community, with some input from the indigenous people. (Vitebsky, 1990, p. 19) Local government historically was excluded from any land use policy decisions and, in this case, the interests of the indigenous people and environmentalists were united with the local government against the powerful resource ministries. (Vitebsky, 1990, p. 19) The unity of interests helped the issues become headlines in the national press. (Vitebsky, 1990, p. 19)

Continued economic crises diminished the interest of the provincial, regional and local governments in environmental and social issues after 1993. The Russian and foreign press, once the most effective weapon of the indigenous people and environmentalists, no longer considers these issues front page news. Local and regional government is again realigned with the industrial groups and resource ministries. In general, indigenous rights and environmental concerns are classified as issues that current resources and conditions cannot address.

In the early 1990s, not all of the local control was equally distributed and Native state farm administrators aligned themselves with their former superiors to create a reasonably profitable business in the face of a crumbling economic system. (Tichotsky, 1993, p. 98) Although most animal herding state farms continued to produce meat, many reindeer herding state farms were able to secure relatively large sums of hard-currency and consumer goods through the sale of reindeer antler to the Asian aphrodisiac market until 1993. (Tichotsky, 1993, p. 98) Life for the nomadic reindeer herder in the field remained the same or worse, since salaries were devalued and transportation costs rose by at least a factor of five. (Alekseev, 1993, lecture) Agricultural administrators did not part easily with their windfall gains. A standard black joke at the time was that in exchange for reindeer antlers, herders received flashlights and "death for the reindeer herder" sleeping bags. (Alekseev, 1994, personal communication) The administrators bought the cheapest polyester sleeping bags in Korea, which were too hot to use in summer (because they did not "breathe"), and too cold for use in winter for these sleeping bags. Hence, the nickname for these sleeping bags. (Alekseev, 1994, personal communication)

In some places local Native leaders are struggling to convince local governments to pass land legislation despite opposition from state farm officials. Many non-Native administrators are unsympathetic to the concerns of the indigenous people. One non-Native administrator in Chukotka felt privatization should be delayed because, "[o]ur Native people are not educated enough to own reindeer privately." (Bosunovsky, 1993, personal communication)

Another obstacle to privatizing the reindeer industry is the corruption associated with the reindeer antler business. Many of the state farm administrators and local officials, encouraged by the opportunity to earn hard currency from sale of reindeer antler to the Asian market, built up black market networks. (Tichotsky, 1993, p. 98; Crow, 1992, personal communication) In one case, in the Russian Northeast, reindeer herders rebelled against crooked state farm administrators and asked American partners in the state farm's antler business to, "... help them [the herders] take control of their herds and ancestral lands." (Bernton, 1993, p. 6) The state farm administrators, in turn, claimed that they had been cheated by Korean and American antler dealers. (Bernton, 1993, p. 6) The antler industry completely collapsed in 1993 when the Korean government prohibited any Russian antler from entering their country. Some antler was exported in 1994, mostly to the United States for Koreans in America. In 1995, over a $1 million in antler products were sold abroad. There are no data on the value of the antler products exported before the antler industry collapsed, but today's trade is considered a shadow of the former sales. Therefore, it can be assumed that a several million dollar industry was destroyed through incompetence and mismanagement.

From 1992 to the present, the adaptation of Sakha's agricultural sector to the market economy is reminiscent of collectivization in the 1920s and 1930s in that it has been contradictory, slow and eclectic. Before collectivization, all agricultural land was in private ownership. The policy of collectivization removed control of the land from private hands by 1940. In the 1950s, this land was largely transferred to the state farms and state centralized control. The state farms dominated Sakha's agriculture until 1993. Earlier, in Chapter 3.2 there was a discussion about collectivization and state control of agriculture. In short, agricultural land used for growing crops changed from private to government ownership from 1913 to 1940 and stayed almost completely in state control until 1993.

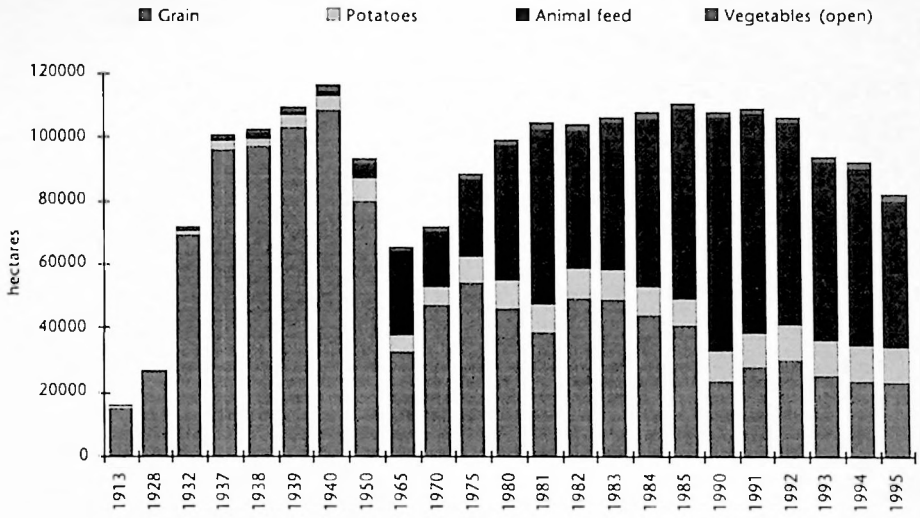


Figure 5.12. Distribution of agricultural lands (excluding grazing pastures) 1913 to 1995.

The changes in the structure of land management also changed agricultural land-use patterns (see Figure 5.12). Farming crops is most important in the southern half of Sakha where grains, potatoes and cabbage are the main products. The supply system in Sakha makes an attempt to provide a large portion of food for regional markets. Land-use for grain and vegetable farming is decreasing since 1991. Since 1980, producing animal feed became the principal use for agricultural land. Since 1975, there has been a growth in land used for potato farming, even though potato production is decreasing (see Figures 5.13a. and 5.13b.).

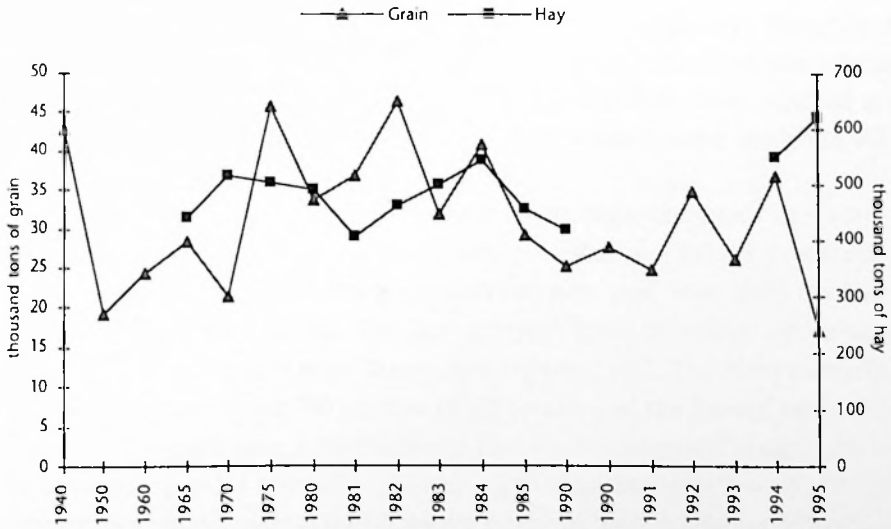


Figure 5.13a. Grain (left hand scale) and hay (right hand scale) production in Sakha 1940 to 1995.

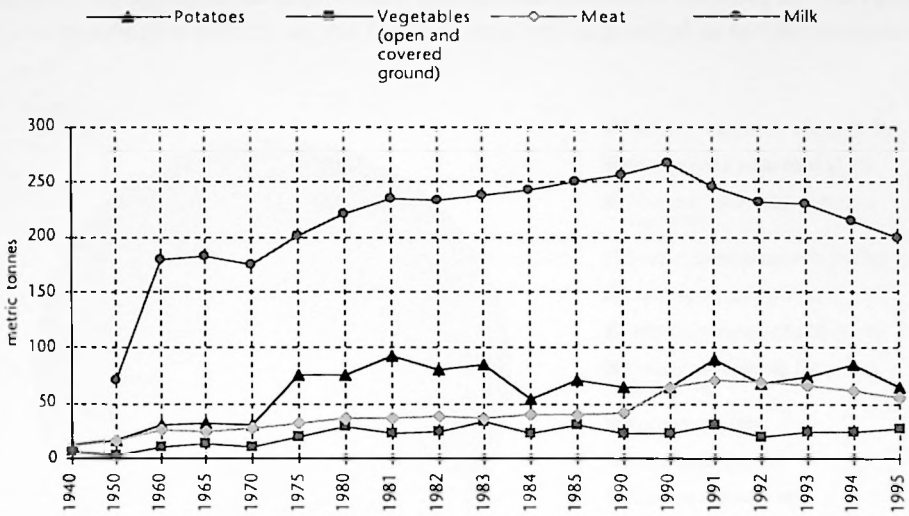


Figure 5.13b. Productlèn of the four main agricultural products (meat, milk, potatoes, vegetables) from 1940 to 1995.

In general, production of milk, meat and potatoes has slightly decreased since 1980. The exception is the increase of vegetable production. Hay production is increasing, probably to compensate for decreased production of animal feed. (Goskomstat, various years) Hay is a substitute for animal feed (usually turnips) and commercial feed (*kombikorm*) which is shipped into Sakha in much smaller volumes. Grain production is very volatile (see Figure 5.13a.).

Pasture land for animals during the Soviet period was completely removed from private hands. Much of the pasture lands, particularly those used by nomadic reindeer herders, were never "owned," but individual or community rights were recognized before the Russian Revolution. The Soviet government took control of the nomadic reindeer herders, controlled their movement and changed family life. Children were required to go to school in settlements and female members of a herder's family were settled in villages and given employment. (Vitebsky, 1992, pp. 232–234)

In 1993, there was a huge transformation in the organizational-legal form of agricultural enterprises. Every agricultural entity was re-registered. Where previously 176 state farms controlled most of the agricultural production, now over 1000 different kinds of units were created from these state farms. Thirteen different kinds of official agricultural units now exist. Only 39 units remain state farms (see Figure 5.14.). The most numerous unit became the farmer's household (70 percent of all units), and the limited company (12 percent). In all, there were over 3,600 farmer's households involved in agriculture in 1993. In the reindeer herding areas nomadic-aboriginal communities were 5 = t up to take over reindeer herds. In addition, over 6,000 summer pastures were issued to individuals and families, for hay growing, herding and potato and vegetable production. Less than 18

percent of all the agricultural land in use (about 300 thousand hectares or 740 thousand acres) was transferred directly to the farmers and into individual or family ownership in 1994.

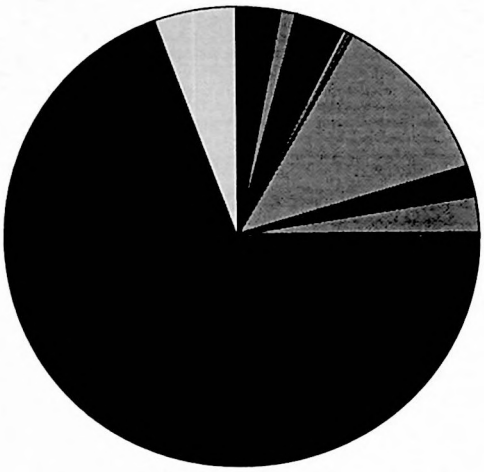


Figure 5.14. Kinds of ownership of agricultural firms after the 1992 reorganization.

	Number of units		Average size (hectares)		Total land transferred (hectares)	
	1995	1996	1995	1996	1995	1996
Farmer households	3,349	3,698	57	44	191,600	162,712
Nomadic herders and trappers	2	10	34,555	5,326*	32,000	53,260
Tribal communities	178	194	252	232	44,800	45,008
Summer pastures/land	6,068	6,194	1.60	1.87	9,756	11,590

*In 1995 the Anabar hunting land grant was taken back by the government.

Size distribution of farmer houshold land (1995)		
	20 or less hectares	between 21-50 hectares
Farmers households	50%	31%

SOURCE: GOSKOMSTAT-Sakha,1995b, p. 54; GOSKOMSTAT-Sakha,1995б, p. 18

Table 5.8. Newly created individual, family and communal agricultural units from 1992 to 1996.

In general, government officials view the re-structuring of the agricultural sector as a failed policy, compared to what they had intended. The official conclusion by the Sakha statistical office in 1993 was that "re-organization of agricultural enterprises in essence merely meant a change in name (collective enterprises became limited partnerships)." (Goskomstat-Sakha, 1994b, p. 17) Despite government efforts to re-organize and assist the agricultural sector, particularly the larger enterprises, production fell for the large agricultural

enterprises while production rose more on the smaller and least subsidized private enterprises and personal plots. In 1994, the Sakha statistical office reported that "[i]n the agricultural sector the reorganization process, which occurred in the two previous years, was stabilized. There were no significant changes in the structure of the agricultural sector. Reorganization amounted to the break-up of a few agricultural enterprises which were turned into farmers' enterprises." (Goskomstat-Sakha, 1995a, p. 33) Figure 5.15. shows that, by 1994, over 78 percent of the land directly used in agricultural production is still in state, municipal or "corporatized" state structure. The commercial units control 54 percent of the agricultural land and the state directly controls about a quarter of the agricultural land. The majority of commercial units, former state farms, represent state firm owned agricultural units or ministry owned agricultural units. Farmers' households, although numerous, control only 14 percent of the land in 1996.

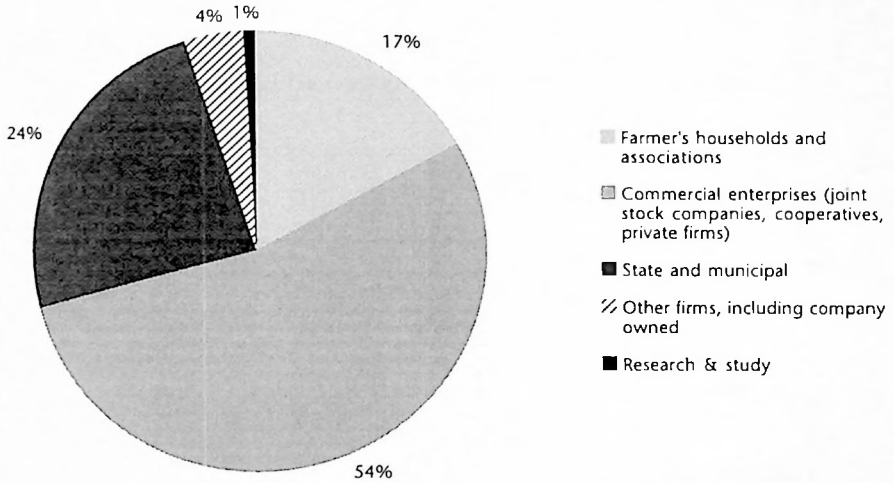


Figure 5.15. Distribution of land used directly in agricultural, by form of ownership.

Ownership of animals between 1991 and 1996 changed significantly for meat cattle and milk cows, changed moderately for horses and reindeer, and changed little for pigs. (see Figures 5.16a.–5.16c.) Cattle and cows were moved into the most extreme form of private ownership. Between 1991 and 1996, farmers and private citizens went from owning virtually nothing to owning 64 percent of all meat cattle and milk cows. The ownership of horses and reindeer was also privatized to a relatively lesser extent than cattle. The extent of government control over reindeer herding is evident from the general data presented in Figure 5.16c. The transfer of reindeer to tribal communities is a very superficial attempt to change the status quo, although local people in reindeer villages were extremely hopeful in 1994 about the success of the tribal communities program. This issue is discussed in greater detail based on the example of the creation of a nomadic-aboriginal community program. Interestingly, reindeer data for Sakha, by ownership, was not made available in 1996. One could speculate

that the government has a vested interest in suppressing the poor showing in privatization, or that the situation is so confused they were not able to classify the reindeer by ownership.

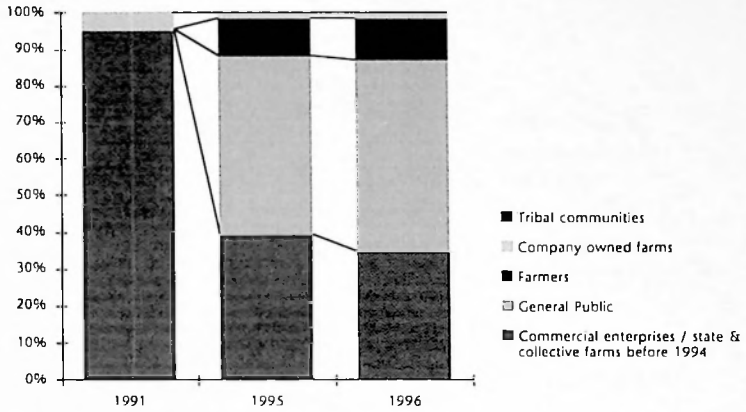


Figure 5.16a. Ownership of cattle in the Republic of Sakha.

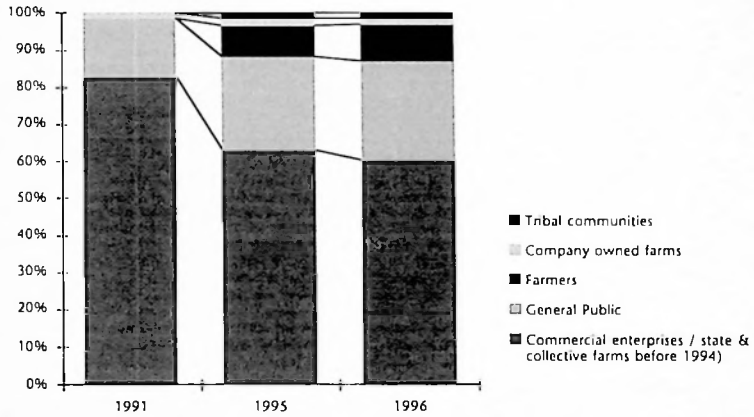


Figure 5.16b. Ownership of horses in the Republic of Sakha.

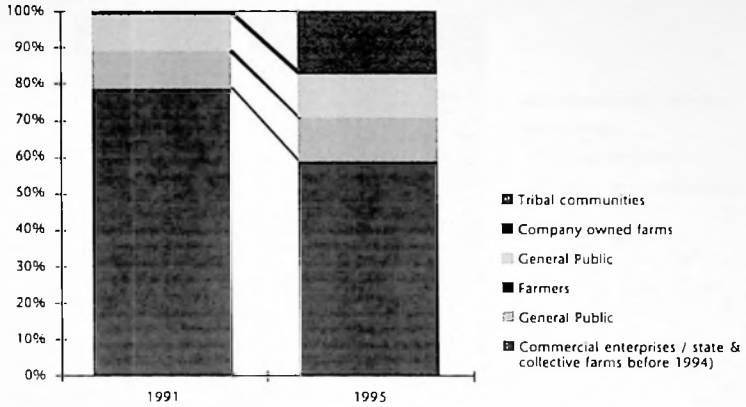


Figure 5.16c. Ownership of reindeer in the Republic of Sakha.

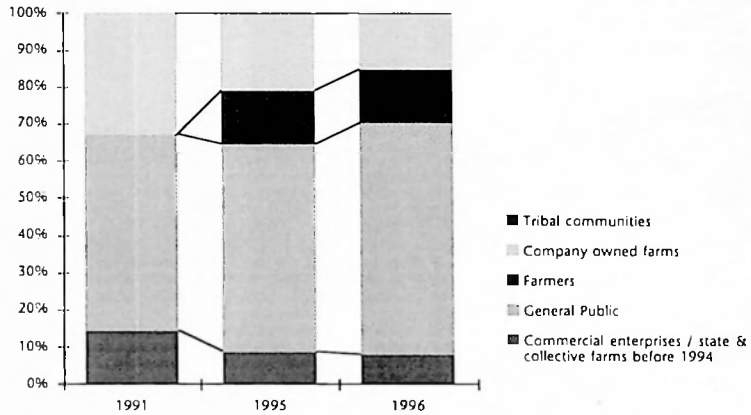


Figure 5.16d. Ownership of pigs in the Republic of Sakha.

The state and commercial enterprises' main market is the government system of distribution. Figure 5.17.a–d. shows the percentage of four staple agricultural products (meat, milk, potatoes and vegetables) sold to the government, an indicator of government support. Meanwhile, the producers firmly in the private sector, produce more and more of the share of staple agricultural products, while the larger enterprises, where government support was focused, has been declining. Figures 5.18.a–d show production of the four staple agricultural products, by form of ownership, and further illustrate that small, private forms of production are taking over the production of the basic products, despite the government's support of the larger enterprises.

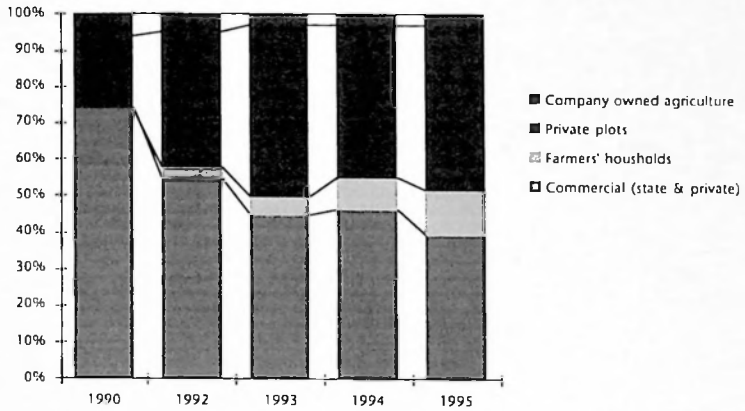


Figure 5.17a. Sales of meat to the government, an indicator of government support.

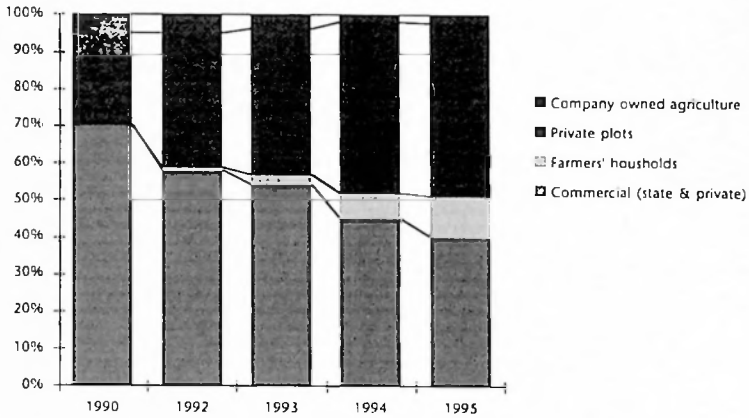


Figure 5.17b. Sales of milk to the government, an indicator of government support.

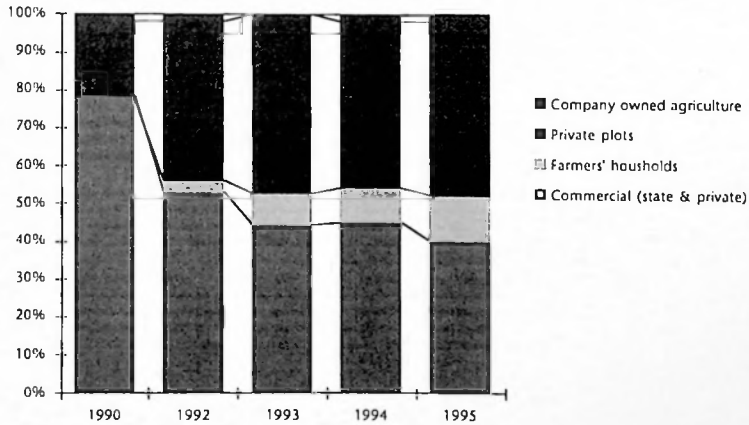


Figure 5.17c. Sales of potatoes to the government, an indicator of government support.

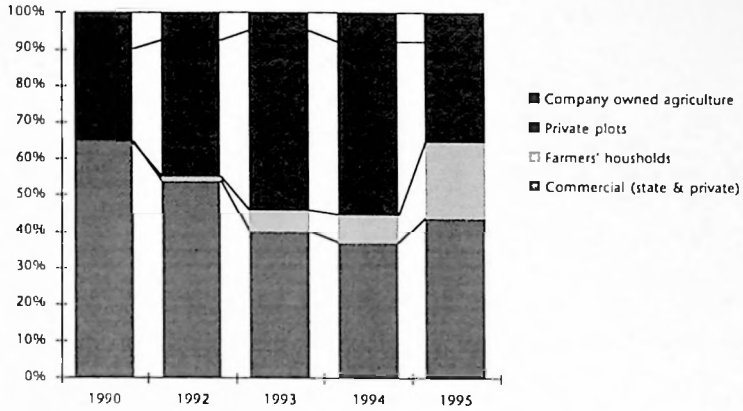
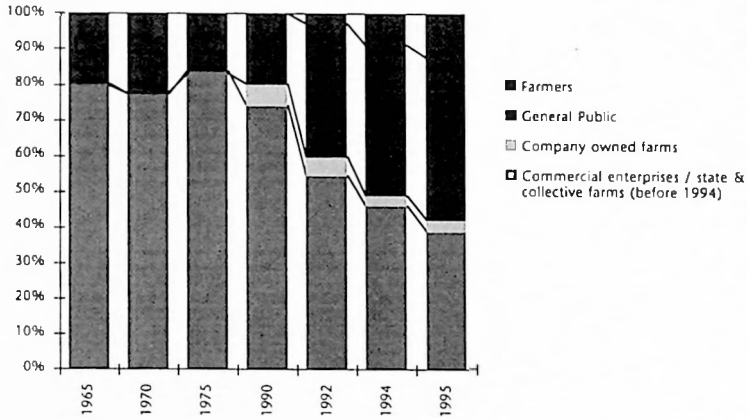
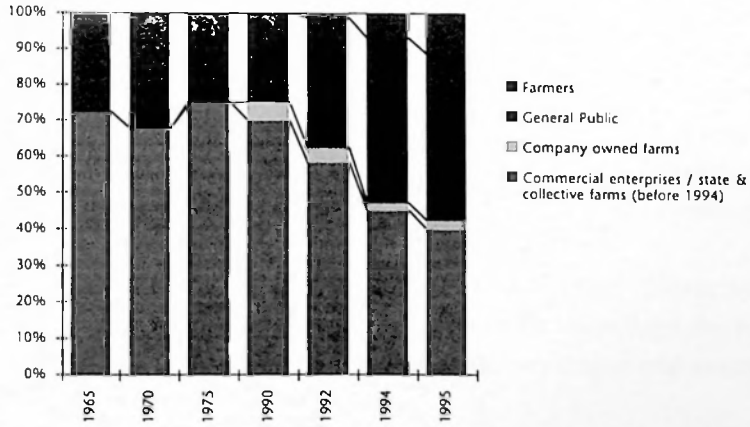


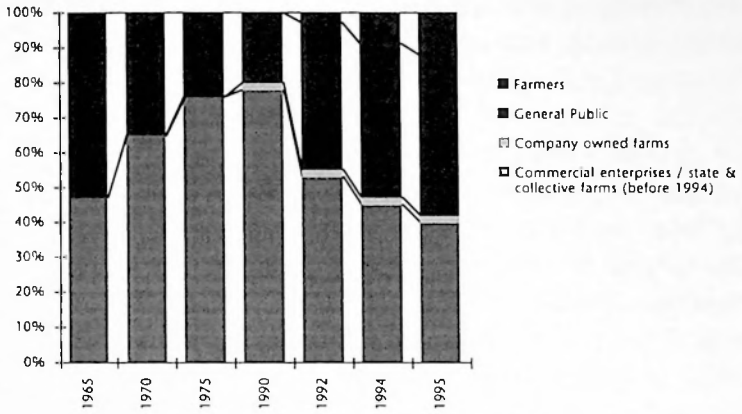
Figure 5.17d. Sales of vegetables to the government, an indicator of government support.



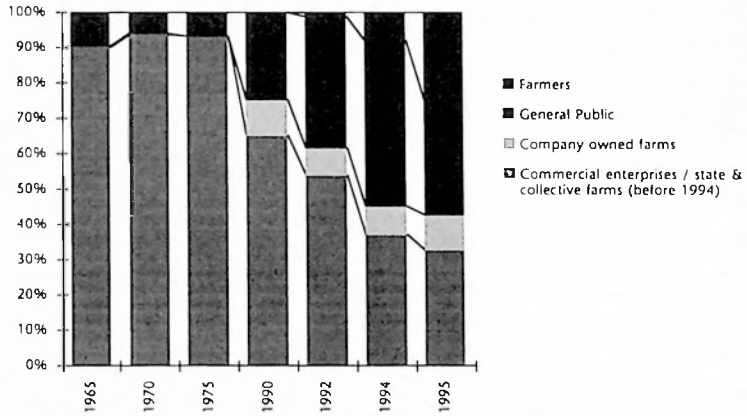
Figures 5.18.a. Production of meat (one of the staple agricultural products), by ownership.



Figures 5.18.b. Production of milk (one of the staple agricultural products), by ownership.



Figures 5.18.c. Production of potatoes (one of the staple agricultural products), by ownership.



Figures 5.18.d. Production of vegetables (one of the staple agricultural products), by ownership.

After the disintegration of the old centralized system of financing and the monopolistic domination of the state farms, to some extent the Republic of Sakha's government has assumed some of the burden of maintaining the agricultural sector. In some instances market forces are making significant structural changes to the overall system. In 1995, bureaucrats realized that although most of their intended attempts to restructure agriculture failed, new features of the agricultural sector develop out of the rubble of the old system.

In 1995, the Sakha statistical office rather dryly noted that "[s]tructural change in the agricultural sector is characterized by its persistence. In the village the process of reorganization and creation of new and varied forms of ownership and enterprise continues." (Goskomstat-Sakha, 1996a, p. 58)

Reindeer herding is probably the area where the least progress in privatization is being made. There are over 290,000 reindeer in the Republic of Sakha, yet today it is impossible to find reindeer meat for sale in the grocery stores of the major settlements and cities of Sakha. The problem is that the price of petrol has made the 200 to 300 mile trip from reindeer village to city prohibitive for the private reindeer herder. Of course, there is competition from beef and horse farms that are closer to the city markets and stores. More significantly, the government meat-buying channels are supplied by meat and meat products shipped into Sakha from Australia, Korea, Japan, Europe and the United States. The foreign meat is available in the cities for much higher prices than it would cost to transport and sell reindeer meat. The state supported system that provides the foreign meat is subsidized by low interest credits from the Russian government through the Sakha government for "supplying the North" programs and provide lucrative "hard currency" transactions and kickbacks for bureaucrats who control the city's supply channels. In addition, food purchases provide a legal and "politically acceptable" opportunity to use hard currency.

The collapse of the old system and the existence of subsidized competitors leave the reindeer herders and village administrators in the remoter regions of Sakha unable to put together simple systems of meat delivery from the village to the city. Several people in the reindeer herding industry (including reindeer herders, village entrepreneurs, indigenous reindeer owners) have been sent to Alaska in the United States for training in meat processing. The missing element is that the villagers and herders need money to start a non-governmental meat marketing association or cooperative to collect meat in the reindeer herding villages, pack the meat and deliver the meat by lorry to towns and cities.

There is at least one success story. A reindeer herder from the village of Cherskii, near the coast of the Arctic Ocean, took the set of meat knives and meat saws that he received as part of a US training program and started butchering meat the way he learned in the US. Within several months the reindeer herder had a thriving business that was competing with the two local state stores. Most people preferred to pay extra for the attractive cuts of meats the reindeer herder provided, rather than buy a Hobson's choice cut filled with bone chips, carelessly hacked off with an ax at the state shop.

In Sakha, a significant factor in the development of non-government ownership in the agricultural sector, especially reindeer herding, is the Sakha government's ethnic policy. The Republic of Sakha is often used as a case study for nationalism or inter-ethnic relations by Western social scientists. (Argounova, 1995; Smith, 1996; Balzer and Vinokurova, 1996) "Indigenousness" is an important concept in the current dialogue about economic and political rights in Sakha. In Sakha the concept of indigenousness takes on a remarkable complexity, not cast simply in the more usual indigenous versus non-indigenous dichotomy. As seen in Chapter 2.4. there are at least four possible identifiable categories of indigenousness. These are the Even, Evenki, Chukchi and Yukagir who have lived on the land for thousands of years; the Sakha (Yakut) people who arrived sometime in the 12th–15th century; the Russian "old-timers" who have settled the area since the 17th century; and

the modern Soviet non-Natives (mostly Russians and Ukrainians, generally called "Russians" for short) who began emigrating in the 1920s and arrived in the thousands in the 1970s and 1980s.

Relations between the Russians and the Sakha were and are, to varying degrees, a relationship of colonizers and colonialized. This issue is an active current theme of research and discussion in both the Sakha and Western press. What is a more important subtley of ethnic relations relevant in the agricultural sector, is the relationship between the Sakha people and northern indigenous groups. For the most part, the non-Sakha indigenous groups live in rural communities or nomadic reindeer camps. For the Sakha people, the post-Soviet period brought a chance for expressions of nationalism, ethnic awareness, and the benefits of a partial sovereignty. The northern indigenous people, in some ways, are treated more as the colonialized in the new Sakha, than they were under the Yakut Autonomous Soviet Socialist Republic.

On the surface, the President of Sakha (half ethnic Sakha and half Russian) supports the cultural revival of all indigenous peoples under his regime. The text of Nikolaev's speech at an international colloquium in Paris in 1993 on the "Peoples of Siberia: Cultural Revival in the Context of a New Russia," showcases the achievements of indigenous peoples under his regime, related in the language of Brezhnev. (Nikolaev, 1994, pp. 90–94) The socio-economic reality is much worse than Nikolaev describes. (Nikolaev, 1994, pp. 90–94) One of the first signals from the Nikolaev government in dealing with indigenous people's affairs was to reorganize the Ministry of Minority Peoples of the North as the Ministry of Peoples of Sakha, under the premise that all people (including Russians, Ukranians, Georgians, etc.) should be treated equally under the law. (Nikolaev, 1994) The Sakha people, although they occupy a relatively northern area, under the Soviet system of categorizing nationalities, were too numerous (over 300,000) and therefore, never included under the heading of "Minority People of the North." The Sakha were classed in a category of "autonomous nationalities," like the Tartars, Buryats or Chechens. Being considered a northern indigenous community has certainly played well politically for the Nikolaev regime, especially in the international community, that has recently focused many meetings and issues on the problems of Northern indigenous peoples. Certainly, there would be nothing wrong with this approach, if it were not done at the expense of other indigenous groups in Sakha.

The Ministry of Peoples of Sakha, with a small department for the Minority Peoples of the North, effectively muffles a very valuable political platform for non-Sakha indigenous groups. On a local level, and particularly relevant to the economic restructuring of rural agricultural development, it could be argued that ethnically Sakha people took over the role of the Russian "colonial oppressor."

I traveled in Spring 1994 to an Even indigenous village, with an Even business man and Native speaker of the Even language. We arrived when this village was conducting a meeting to turn its state farm into a nomadic-tribal community. The meeting was run by a board of directors.

All the members of the board of directors were administrators at the state farm and were all ethnic Sakha. In fact, the chairman was a well-known career ethnic Sakha state farm administrator with the nick-name of "little Stalin." At one point, the meeting considered a particular clause in the charter documents of the nomadic-aboriginal community. The clause stated that the nomadic-aboriginal community would receive all the assets and future profits of the community, but that only current employees of the state farm, recently laid off employees of the state farm, pensioners having worked for the state farm and workers of the "hospital, house of culture, and library working with the community ... based on individual applications," were eligible to be members of the nomadic-aboriginal community, regardless of ethnicity. (State farm Tompo, 1994, p. 2)

At this point, my Even colleague got up and said, in Russian, words to the effect that this clause would exclude some the Even elders, the old women and men who served the community; some of the wives and husbands of the state farm workers; and the children of the village should automatically become members of the tribal community and not have to apply for membership. Furthermore, he stated the Even teachers and doctors who serve the community, outside the state farm structure, should also automatically be made members of the nomadic-aboriginal community. My Even colleague concluded that the clause under discussion concentrated all the assets and villages' wealth only in the hands of the people, including non-Even, who worked for the state farm. My colleague concluded by asking, "What kind of a nomadic-aboriginal community would we be creating?" The chairman replied that this was the way this process of becoming a community was carried out everywhere else, otherwise the monetary shares of the "nomadic-tribal community" are not big enough if you include members of the community outside the original state farm. The chairman then asked an ethnic Russian lawyer, who was present as a technical expert and was responsible for the draft charter documents, to explain that this was how this process was carried out throughout Sakha and added it would be unwise to change the clause under discussion. I would note that this position clearly contradicts the original law which plainly states that any Native person living a traditional life-style and members of their family were eligible community members and that, in addition, "[u]nder-aged children, non-working pensioners, and non-working invalids, who live on the territory are considered members of the tribal community without any documentation necessary. (Ivanov, 1992, p. 1)

The lawyer's comments were followed by comments by the ethnic Sakha deputy chairman, speaking in Russian, on the importance of moving on, and ignoring the criticisms of 'outsiders,' referring to my Even colleague. At this point my colleague jumped up and began an impassioned speech in the Even language, which I later found out, was to "... beg the people to oppose being rail-roaded by the Sakha and Russian outsiders." At this point, the chairman, who also spoke no Even, jumped up and declared a recess.

During the recess while my colleague was swamped by local Even villagers asking him what should be done about the clause, the chairman rounded up all voting delegates in the meeting. Apparently, although anyone could attend the meeting, only about half of the

people present had the right to vote on amendments. The voting delegates all appeared to be under the control of the chairman. Immediately after recess, a vote was called for and carried out—the clause remained. My colleague commented afterwards, that he understood that the Bolshevik party was formed using very similar principles.[14]

There was another side to the entire affair. The meeting about reorganizing the state farm was held during the annual reindeer race festival. This was the real reason so many people were present at the reorganization meeting. Many reindeer herders had come in from the pastures and camped near the village to attend the festival and arrived as spectators to the reorganization meeting. The mothers and grandmothers came to request the state farm director to allow all the children of reindeer herders to leave school early with the school teachers, and send them out to the taiga to help with the spring reindeer herding. The potential loss of control threatened during the general meeting put the board of directors on the defensive and they agreed to send the children and teachers out with their nomadic parents during the spring.

This example about the relationship between the Sakha people and other indigenous groups that live in the Republic of Sakha is not to condemn the Sakha people. To a large extent, the state farm leadership is motivated by bureaucratic incentives as much as ethnic considerations. This examples does illustrate a potential large-scale problem and barrier for socio-economic development of northern rural areas that non-Sakha indigenous people occupy. Certainly, when Russia received the sovereignty it demanded from the Soviet Union, Yeltsin was extremely unwilling to let the power devolve downward. It is likely that at each governmental level the battle for rights must be engaged in a similar way. In the words of one Sakha specialist on Sakha ethnicity, "[t]he Yakut learned government from the Russians, who, as it becomes clearer, have extremely weak democratic tendencies for organizing the life of civilian citizens." (Vinokurova, 1994, p. 79) This example supports the argument that economic restructuring may very well become held up on the Republic level and this, in turn, will interfere with market driven re-structuring within the rural economy.

5.5. Conclusion

Within Russia many changes in the structure and organization of the economy have come about in the last several years. Sakha is striking for resisting most internal change, while aggressively pursuing regional economic and political sovereignty (see Chapter 2.5.). In the area of regional sovereignty, Sakha is a leader among all of Russia's political units.

Although the government of Sakha is beginning to enjoy the freedoms it wrested from Russia, it may stifle its own victory by not sharing these political and economic freedoms with the municipalities, enterprises and people.

Ownership of land remains an unresolved issue throughout Russia, and is, to a large degree, out of Sakha's hands. Sakha's government is not actively pursuing giving its citizens property rights outside of agricultural plots and apartments. This reluctance to transfer property rights into private hands is extended to control and ownership of the means of

production and distribution. Any sector of the economy that is considered essential to the region is controlled completely or partially by the Sakha government. This includes the energy sector, the mining industries, virtually all transport, staple foods, a large portion of the housing market and the communications sector.

Privatization in Sakha is a mixture of success and business as usual. A process of privatization, including stock issues and restructuring forms of business organization, at least on paper, is the groundwork necessary to develop a market economy. The Sakha government, however, spent most of its effort during privatization ensuring that it retained control of the resource producing sector. The resource producing sector probably could have benefited most from private ownership and reform. The agricultural sector has been given many concessions on paper, the rural economy within a country facing economic crisis is left without capital or markets to take advantage of any freedom. The call to re-exert state control over the rural economy has its supporters. This view may lead the villages back to a Soviet-style economy.

A major goal of any market oriented reform is to promote efficiency in the performance of enterprises, and provide for increased economic productivity. To create the conditions for efficient markets requires some basic conditions. Markets, it is generally accepted by most western economists, need decentralized price signals to efficiently allocate resources. (Lipsey, 1992, pp. 71–76; Leftwich, 1973, pp. 343–358) The development of markets in the context, within the Republic of Sakha, is suppressed by a region-wide policy of price control. Many prices in the Republic of Sakha, including significant parts of the retail and wholesale trade of consumer goods and food, are still controlled by the Sakha government. To a large extent, the demand for resources that earn the greatest revenue are largely beyond Sakha's control. This demand is controlled by world market forces. If the control of prices of inputs of the resource producing sector remains unchanged, it will certainly affect Sakha's profitability in the long run.

The resolution to decentralize, promote democracy and pursue a market based economy within Sakha remains uncertain. If privatization and decentralization are allowed to continue this will most likely lead to a greater distribution of social, political and economic benefits for many of the parties involved, although not without liabilities. Economic benefits and liabilities seem to be the greatest concern for all the players in Sakha, especially in the face of the current economic crisis. The major opposition to the existing government is a Communist Party committed to greater state ownership and stronger ties with the federal center. (Izbekova, 1995, p. 8) Advocates for reform are either working within the existing government, or are operating independently in an extremely weak position. A take-over of the government by conservative forces is possible and could reverse many of the minimal changes that have occurred in the last five years. Such a reversal would try to increase the economic benefits to the state, likely at the price of efficiency within industry, and of the personal economic and political freedom of Sakha's citizens. With an understanding of the internal condition of the Republic of Sakha, we can now look at how Sakha interacts with the global economy through the role of exports.

CHAPTER 6

NATURAL RESOURCE EXPORT FROM THE REPUBLIC OF SAKHA AFTER 1991

6.1. INTRODUCTION: WHAT SAKHA EXPORTS

This chapter will address the Sakha economy's chief engine of economic development—exports. In particular, the chapter will look at the existing diamond industry as an export industry and its role in the Sakha economy. Although gold and coal are exported, the present and short term future of the Sakha export economy depends largely on the revenue making diamond industry. The only other potential industry that can match or surpass the diamond industry is the export of oil or gas. Currently, the Republic of Sakha does not export any oil or gas, but possibilities of future exports involve interesting issues of geopolitics and changing demand schedules from the East Asian market.

Like the rest of the Russian Far East, the Republic of Sakha is extremely outward looking in its economic policy and expectations. For Sakha, the foreign market and exports are not merely an interest, but a matter of survival.

The diamond market is by far the largest contributor to the Sakha economy and added over $2 billion to the Russian economy in 1994 and 1995. This is about 3 to 5 percent of Russia's gross export earnings. Within Sakha, the diamond industry's earnings are over 93 percent of all gross foreign earnings from Republic exports. Figure 6.1. shows the diamond industry's contribution to all foreign exports from Sakha. Over 75 percent of the Sakha regional budget is generated by diamond revenues. A large amount of the support and service sector activity is either directly dependent on the diamond industry or indirectly funded by the industry through the Republic coffers.

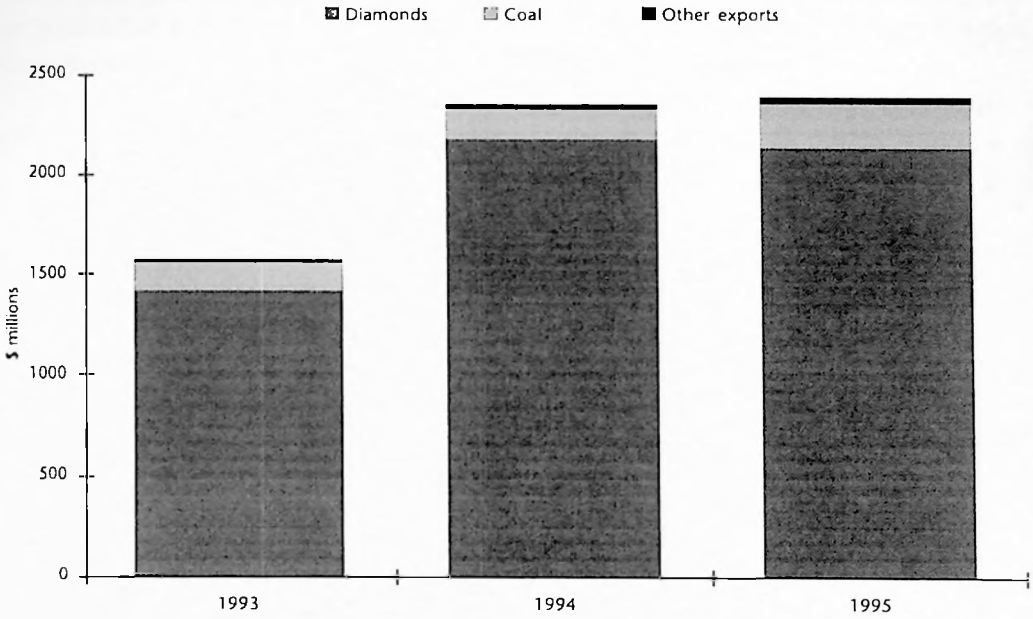


Figure 6.1. Diamond exports as part of all exports for the Republic of Sakha.

Most of Sakha's foreign earnings are "overlooked" when comparisons are made with other provinces in the Russian Far East and other areas in Russia. In almost all official publications earnings on diamonds and gold (Sakha's principle exports), are not included for strategic purposes in the export statistics.

The distribution of foreign earnings between the Republic of Sakha and the Russian central government is a great source of contention. In fact, these earnings were one of the main issues of discussion at negotiations between Russia and Sakha. The relationship intensified as between the federal executive branch and the Russian Parliament clashed over legislation dealing with the extraction, production and sale of precious metal and stones. (Kempton and Levine, 1995)

A law was finally passed that left the Russian government with control over the sale of gold and diamonds, but also gave Sakha a percentage of their own production. (Kempton and Levine, 1995) Since 1992, the Republic of Sakha increased its involvement in the direct negotiations of diamond sales with foreign partners, and its control over the export of diamonds and distribution of subsequent foreign currency revenue.

In 1996, after a prolonged struggle with various government agencies, the Diamond Russia Sakha Company, jointly owned by the Sakha and Russian governments, gained the monopoly right to export rough diamonds. (Helmer, 1996, 26 February)

Gold production, from the 1920s until the start of diamond production at the end of the 1950s, was the principal economic activity for the Republic of Sakha. Under the Soviet

Union all gold was under the strict control of the central government. Moscow received gold from Yakut ASSR and most of it became a part of the USSR gold reserve. The sale of Yakut gold on the world market brought little for the region that produced it.

With the fall of the Soviet Union, Sakha, after the same struggle that won them significant rights in marketing diamonds, also became a partner in the profits of gold sales. By the time Moscow and Yakutsk worked out a new system of sharing the benefits of gold sales, costs of production sky-rocketed.

Selling gold served as a method for turning the Russian "wooden" (or worthless) ruble into foreign currency for buying desired foreign imports for both the Sakha and Russian government. By 1994, the ruble became more and more convertible and Russia's trade balance relied more and more on commodities whose costs did not exceed their income. The Sakha gold industry is earning the successful gold companies about $15 million a year, but the industry overall lost more than $95 million between 1994 and 1995. These amounts represent less than a tenth of the diamond mining profits.

Selling coal to the Japanese has also been a part of the Sakha export economy since the 1970s. The coal industry exports about a quarter of its production to Japan,[1] 3 to 4 million tons out of 14 million tons of high quality and coking coal produced in Sakha. Since 1992, Sakha controls all the foreign currency earnings from coal production.

Coal earns Sakha between $140 million and $148 million in exports, almost half of the gross earnings of the coal industry. Sakha is one of the larger coal exporters of Russia, and Sakha's coal production equals about 17 percent of Russian's coal export by amount and 23 percent by value. This seemingly significant contribution to the Sakha economy is dwarfed in comparison to the contribution of diamond exports. Coal holds second place among Sakha exports, but coal exports are less, by more than a factor of 10, than the contribution of the diamond industry to Sakha exports (see Figure 6.1). The timber industry used to be part of the export economy, but has not played a significant role in exports since the collapse of the USSR.

Exporting Sakha's resources is closely aligned with earning foreign currency. Russia's ruble is "quasi-convertible" and inflation makes foreign currency attractive relative to the unstable ruble, especially during the period of rapid inflation between 1992 and 1994. In January 1992, Russia experienced inflation of 245 percent within one month. (OECD, 1995, p. 13) Russia's inflation averaged 20 percent per month in 1993. (OECD, 1995, p. 13) In 1995, inflation declined but stayed above 5 percent per month. (OECD, 1995, p. 13) The fall in the rubles exchange rate, relative to the US dollar from 1991 to 1996, is a good indicator of the overall inflation within Russia and demonstrates the advantage of dollar earnings for the Republic of Sakha (see Figure 6.2). The foreign currency diamond earnings, therefore, could be used on the world market and lost little value relative to the high rate of inflation of the ruble. Moreover, since some of Sakha's foreign earnings are banked in New York, they probably between 1991–1994, provided additional dollar revenue. Currently, the role of foreign currency as a hedge against the ruble is diminishing,

as the ruble stabilizes, but only slightly. A large amount of dollars can still purchase goods abroad that rubles cannot buy.

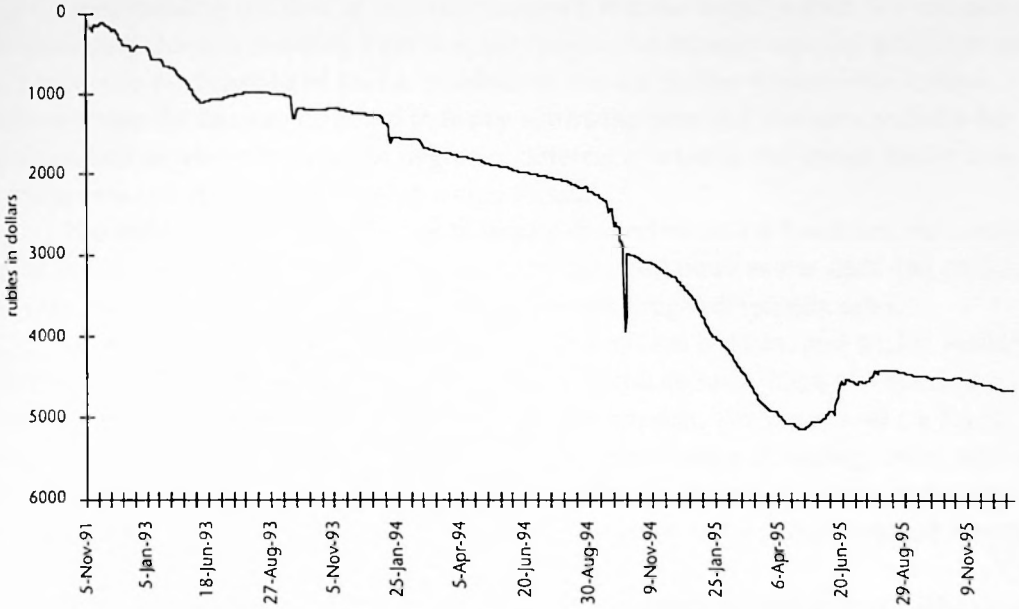


Figure 6.2. Nominal exchange rate between the Russian ruble and US dollar (rubles to dollar, inverted scale).

6.2. Export of Diamonds

Sakha's diamonds are important not only for the Republic of Sakha. Russia is interested in diamonds, because they account for between three and five percent of Russia's hard currency earnings and produce relatively easily controlled revenues. Sakha diamonds are also of interest to De Beers,[2] the South African company that has been in charge of the world diamond cartel for almost 60 years.

6.2.1 The world diamond market, Sakha and Russia

Since 1993, Russia and Sakha both changed the Soviet-styled avenue between the producer and the end market. This, in turn began to destablize the world's raw diamond market. Sakha diamonds represent a large enough share of the world diamond market to make the market vulnerable to the actions of both the Russian Federation and the Republic of Sakha. As a local journalist in Yakutsk notes:

> Maybe this sounds a bit strange, that there are people sitting around in an out-of-the-way Province [Sakha] discussing the regulation of the world diamond market, and raising the influence of the local company. This is

really the case. They need to consider us [Sakha] on the world market.
(Borisov, 1994, p. 1)

Understanding the flow of Russian diamonds into the world market is a valuable tool for illustrating changes resulting from Russian reform and Russian regional economic policy as it applies to the Republic of Sakha. In addition, the interaction between the various factions within the Russian diamond industry shows the potential avenues available for local resource development and the degree of difference between the former Soviet command system and the evolving system within Russia.

The outlet for Sakha's diamonds is largely dependent on De Beers and its London-based Central Selling Organization, known in the diamond trade as the CSO. The CSO runs the cartel that controls 75 to 80 percent of the world's rough[3] diamonds sales.

De Beers sold $4,366 million in 1993, $4,250 million in 1994, and $4,531 million in 1995 worth of rough diamonds through its CSO (nominal dollars). (Ogilvie Thompson, 1993, p. 3; Ogilvie Thompson, 1994, p. 3; Ogilvie Thompson, 1995, pp. 3–4) De Beers claims to control 80 percent of the world's rough diamond sales. (Gooding, 1994, September 2; *The Economist*, 1994) De Beers also directly controls about 50 percent of the world's rough diamond production through mines it owns in South Africa, Botswana and Namibia. (Ogilvie Thompson, 1995, pp. 10, 26, 62)

Diamonds produced in other countries such as Tanzania, Sierra Leone, Ghana and Zaire, are also primarily sold through the De Beers cartel. (Higgins, 1994, 13 November) Australia marketed 80 percent of the value that it produces through the CSO,[4] until the single Australia producer dramatically quit the cartel in June 1996. (Gooding, 1996, 12 April; Tait and Gooding, 1996) Finally, Canada is likely to become a diamond producer within the next several years, and will have to decide whether to join the CSO's marketing system. (Miller, 1995, p. 15) De Beers will need to determine how the CSO might accommodate a new producer. (Miller, 1995, p. 15)

Rough diamonds are judged on their weight (caratage, a carat is equal to 0.2 grams or 5000 carats equal one kilogram of diamonds), clarity (purity or flawedness), color (completely translucent, yellow, brown, violet, green red, pink or black), and cut (potential type of shape of cut). De Beers has 5,000 different classifications for rough diamonds, which are sorted individually, mostly by hand by trained specialists.

Diamonds are classified as industrial, near-gem or gem, depending on size and quality. Industrial diamonds are either mixed together with gem diamonds or produced synthetically.[5] Synthetic diamonds represent 90 percent of the industrial diamond market. Industrial diamonds (synthetic and natural) make up 85 percent of diamonds sold by weight, but less than 15 percent of the value of all rough diamonds sold. (NWT, 1993, pp. 6–7) Industrial diamonds bring in about $600 million a year on the world market. (NWT, 1993, p. 6)

Since most of the money is made on gem and near-gem diamonds, the mix of diamonds from a specific deposit is extremely important. Russia's kimberlite deposits are said to produce, on average, 20 percent gems, 40 percent near gems and 40 percent indus-

trial diamonds. (NMT, 1993, p. vi; Marshintsev, 1995, personal communication) Russia's untapped deposits are rumored to have a richer mix of diamonds, than the previous deposits. As a comparison, most of the kimberlite deposits in Botswana produce 25 percent gem quality diamonds, 55 percent near-gem and only 20 percent industrial diamonds. (NWT, 1993, p. ii) The Australian lamporite deposit, produces the greatest volume of diamonds, five percent gem quality, 45 percent near-gem quality and 50 percent industrial quality. (NWT, 1993, p. i) Australia is, therefore, the largest producer of rough diamonds, but has less than eight percent of the market.

The De Beers diamond cartel, through the CSO, sells its diamonds through a system of ten sights (sales) a year. These sales are held simultaneously in London, England, Lucerne, Switzerland and Johannesburg, South Africa. To all their sights, the CSO invites about 160 sightholders (buyers). These buyers are given a cardboard box of diamonds, which do not necessarily contain the buyers' requested selection, and sightholders must take or reject the entire box. Rejecting the CSO's cardboard box and its contents does not endear the buyer with the CSO, and is rarely done. The sightholders in turn either produce jewelry or resell the rough diamonds to other dealers or jewelers.

Antwerp (Belgium) distributes about 32 percent of the rough diamonds sold through the De Beers CSO sight system to wholesale buyers, cutters and jewelers. (Lauwers, 1996) Most diamonds not sold through the CSO generally come into the market through Antwerp. (Lauwers, 1996) Antwerp is the largest center for the sale of rough diamonds outside the CSO. Antwerp re-exports most of its rough, cut and polished diamonds, functioning as the world's largest clearing house for diamonds. (Lauwers, 1996)

The world market for rough diamonds is estimated at between $5 and $6.5 billion a year. (NWT, 1993; Miller, 1995, p. 6) The market for wholesale cut and polished diamonds is estimated at about $9 billion a year. (NWT, 1993; Miller, 1995, p. 6) The final retail market for diamonds, after the diamonds are set as jewelry, is estimated at sales of $40 billion dollars a year. (NWT, 1993; Miller, 1995, p. 6)

Maintaining a widely-held belief that diamonds can never lose their value is considered the most important aspect of the success in marketing diamonds. (Ogilvie Thompson, 1994, p. 12–13; Behrmann and Banjerjee, 1995) The belief in the stability of the diamond is the cornerstone of De Beers' 50-year advertising campaign and its slogan that "a diamond is forever." (Ogilvie Thompson, 1994, p. 12–13; Behrmann and Banjerjee, 1995) In De Beers' own words:

> Diamonds are not a necessity and have no functional worth. Their value has been established over the centuries based on their rarity, natural beauty and the myth, magic, mystery and symbolism that surround them. An image that has, in the last fifty years, been carefully nurtured by advertising, promotion and public relations. (Ogilvie Thompson, 1995, p. 14)

To maintain the image of value and price invincibility of diamonds, De Beers buys up the excess supply in the world market. (Miller, 1995, p. 9) Unadjusted for inflation, the

CSO diamond prices have never fallen. (Miller, 1995, p. 9; Behrmann and Banjerjee, 1995) Instead, the sales of rough diamonds from the CSO contract and expand depending on the condition of the market. (Miller, 1995, p. 13)

Within the last 20 years, De Beers has weathered several crises in the market by storing supplies during periods of diamond gluts. One crisis, in the early 1980s, was started by a large increase in production in Botswana and the Soviet Union, coupled with the Soviet Union's need to finance the Afghan War. The market for large diamonds was "over supplied" and specialists speculated whether the CSO cartel would hold together. (*The Economist*, 1987, 10 January) By the end of the 1980s, the diamond market recovered to even higher levels, and the CSO was able to report record diamond sales. (Miller, 1995, p. 10)

The trend of increasing sales continued until 1992, when Angola, on the eve of elections and on the verge of civil war, lifted most restrictions on diamond mining to raise the ruling party's popularity. (Miller, 1995, p. 13) An extremely dry rainy season, aided thousands of people in a large-scale diamond rush. These diamonds were smuggled out of Angola and flooded the European diamond market. At that time, the mining correspondent for *The Financial Times*, described the following situation.

> At one time an estimated 50,000 private enterprise diggers were picking up diamonds from dried-up river beds in Angola. The stones were smuggled out mainly to Antwerp where De Beers, which controls 80 percent of world-wide rough diamond sales, attempted to keep the market stable by buying them for its stockpile.
>
> At the height of the rush, De Beers' buyer in Antwerp mopped up nearly $40 million worth in one week and the group estimates about $500 million of stones were smuggled out of Angola this year, representing a sudden 10 percent addition to world supply. (Gooding, 1993, 11 January)

In 1992, the De Beers rough diamond sales fell to $3,147 million, the lowest since 1987, and once again De Beers focused on buying up an unplanned increase in supply. (Gooding, 1993, 11 January) In mid-1992, it seemed like the De Beers cartel might not be able to continue to absorb the supply of diamonds from Angola. The cartel was saved in September by renewed civil war and rain that brought mining in Angola to a halt. (Miller, 1995, p. 13)

The Soviet Union was generally considered a relatively stable partner for the De Beers cartel, since the Soviet Union generally followed the rules set out by the CSO for sale of rough diamonds.

Soviet cut diamonds were an entirely different case. Soviet cut diamonds were not covered by any agreements between the USSR and De Beers, and were always an unknown factor that could affect the market at any time. The Soviet government sold cut and polished diamonds whenever it needed hard currency. *The Economist* noted this chaotic nature of the supply of diamonds from the USSR:

> Russia always adds uncertainty to the diamond market. Its rough-diamond exports flow through the De Beers system and can therefore be regulated. But Russia's direct exports of best-quality polished diamonds are another matter. Dealers say they fear nothing more than sudden, cheap sales from Russia in that part of the market. At the moment Russia appears to be 'tamed,' and is not a heavy seller of polished diamonds, but the Russians have not put up their prices to De Beers's new levels. The significance of Russian supply lies in the quality and value of the diamonds it produces. The top end of the market is always of much greater concern to De Beers than the bottom end, because that is where the real profits are made. (*The Economist*, 1987, 10 January)

The chaotic nature of the sale and export of diamonds from Russia increased when the Russian government and Parliament started to restructure the entire industry at the end of 1992. Previously only the Communist Party directed the industry. The Communist Party's collapse within the Soviet Union meant the end of Russia as a stable supplier of rough diamonds. After restructuring, the Russian diamond industry underwent a struggle for control among government bureaucrats in the committees and state enterprises that previously administered the diamond industry: the Sakha government, the mining and commercial interests in Sakha, the former Soviet diamond cutting centers in Moscow, Ukraine and Georgia, and nationalist parliamentarians. While internal struggles were going on within the Russian diamond industry, externally the Russians attempted to continue the diamond export policy forged under the Soviet government.

Like the Soviet Union, Russia continued to sell diamonds through De Beers' London-based CSO, the diamond industry's cartel controller. The agreement between the Russian government and De Beers, signed in 1993 and operative until the end of 1995, was an almost unchanged extension of the agreement originally signed by the Soviet Union in May 1990. (Kempton and Levine, 1995) Under the agreement, Russia sold the CSO 95 percent of its rough, gemstone diamonds. In addition, Russia was restricted to selling the CSO a maximum amount of diamonds equal to 26 percent of the total value of all CSO sales of gem rough diamonds. In 1993 and 1994, this share was worth a little over a billion dollars. The new Russia did not keep the agreement with the same reliability as the USSR.

To keep within the supply quota, Russia publicly agreed, since 1992, to limit its export of diamonds. (Kempton and Levine, 1995) Russia also agreed that the De Beers cartel with its single channel to sell diamonds was advantageous to both parties. In 1993, the chairman of De Beers reported on its relationship with Russia in its annual report:

> These relationships ensure that the CSO and leaders in the cutting centers have opportunities to discuss the sales policy with the appropriate Russian authorities, and we have good reason to believe that stability in the diamond market, and co-operation between the De Beers/Centenary group and Russia, as the world's two major producers, are widely recognised as being the common interest—indeed that has been the Russian approach to

> diamond export for over thirty years. The Russian authorities continue to state that they have no wish to destabilise the diamond market, and we are confident that co-operation will extend beyond the life of the present contract. (Ogilvie Thompson, 1993, p. 3)

At the beginning of 1993, after the crisis with Angolan diamonds came to an end, the condition of the diamond market again reversed itself in favor of the De Beers cartel. The CSO announced record sales of $2,543 million in the first half of 1993. (Ogilvie Thompson, 1993, p. 3) There was strong year round demand from the USA and Japan, and Indian manufacturers began to buy more diamonds after the Indian government relaxed exchange regulations. (Ogilvie Thompson, 1993, p. 10) In addition to all these factors, the Russians reduced the sales of their diamonds and this "led to a distinct improvement in market sentiment early in 1993." (Ogilvie Thompson, 1993, p. 3) Some analysts in the West suspected that Russia's reduced sales were due to "bureaucratic bungling." (Gooding, 1993, 07 July)

This particular interruption in delivering rough diamonds to the market was the consequence of a breakdown in Russia's traditional internal diamond export system and was related to the restructuring of the Russian diamond industry. The restructuring was a result of infighting among the Russian Parliament, government committees, various factions within the diamond industry and the Sakha government.

First of all, in the late 1992, the Russian government officially recognized the newly formed Diamond Russia Sakha Company as the successor of Yakutalmaz, the mammoth Soviet state diamond production enterprise. (Borisov, 1994, p. 2)

Second, in November, 1992, the Diamond Russia Sakha Company was allowed to form a subsidiary company, called Almazexport [Diamond Export] which took over the task of chief exporter of rough diamonds. (Borisov, 1994, p. 2) As part of Russia's privatization efforts, additional Russian federal legislation was created in the beginning of December, 1992 to extend Diamond Russia Sakha Company authority to become the exclusive exporter of diamonds. Diamond Russia Sakha Company gradually replaced the state run Almazyuvelirexport [Diamond Jewelry Export] Company, which was under the Russian Committee of Precious Metals and Precious Stones.

Officials within the existing system of oversight were not eager to lose control over diamond exports and in late December 1992, an alternative plan was pushed through Parliament by Leonid Gurevich, then head of the parliamentary Committee on Precious Metals and Precious Stones. The alternative plan approved by Parliament proposed the creation of a "Federal Diamond Center," that would place the diamond industry and all exports under the control of the Russian Parliament. (Boulton, 1992, 22 December) Many of the Federal Diamond Center project supporters within the Russian government saw the plan as a way to re-centralize power over the diamond industry, weaken the Sakha government's new influence and create an entity that could market diamonds world-wide completely independent of the De Beers CSO. After Yeltsin dissolved Parliament in October,

1993, Gurevich reappeared as the deputy head of the Russian Committee of Precious Metals and Precious Stones, in charge of diamond policy.

From the beginning, a major aspect of the power struggle within the diamond industry was based on old personal rivalries between Soviet government departments. The head of the Soviet diamond and gold monopoly (Glavalmazzoloto), Evgeny Bychkov, became the head of the Russian Committee of Precious Metals and Precious Stones, while Valery Rudakov, the former head of the State Depository of the USSR (Gokhran), became the president of the Diamond Russia Sakha Company. (Boulton, 1993, 02 March)

The internal Russian struggle in the first quarter of 1993 created a situation where only a minimal amount of any kind of diamonds, cut or rough, were allowed out of Russia. According to Andrei Kirillin, the president of Diamond Russia Sakha Company:

> [d]uring ... [1993] we lived through a difficult time. This related to organizational problems: no quick authorization of the export quota, hold-up of license approvals, and a delay determining appropriate customs tariffs on rough diamonds and polished stones. (*Uspekh*, 1995b, p. 1)

Clearly, bureaucrats within the system who despised the creation of the Diamond Russia Sakha Company tried to slow down any export permits or licenses. In addition, bureaucrats who were not certain about the new process to export diamonds, preferred to wait, rather than be accountable for an error.

Therefore, the real reason the CSO had an opportunity to increase sales in the first half of 1993 was the internal confusion within Russia rather than a planned market strategy by the Russian/Sakha side. Taking advantage of Russian sales decreasing to a trickle. De Beers increased the sale of stones it stockpiled over the previous year and introduced a 1.5 percent price increase for the first time in several years (Ogilvie Thompson, 1993, p. 3). The news of De Beers increased sales of stockpiled Russian-sized diamonds[6] was broadcast on local Sakha television programs in early 1993, with a commentary on 1) how much money Sakha was losing through Russia's bureaucratic incompetence, and 2) how quickly the West was willing to earn a profit from Sakha's "misfortune."

At the end of December 1993, representatives of De Beers shared their suspicion that between $40 and $80 million worth of rough diamonds from Russian stockpiles had been sold directly in Antwerp, avoiding the CSO. (Gooding, 1993, 21 December) The *Financial Times* reported that "[t]he Russian government, desperate for hard currency, is selling uncut gem diamonds from its Treasury stockpile directly to dealers in Antwerp." (Gooding, 1993, 21 December)

The Russian Committee for Precious Metal and Precious Stones almost immediately denied that it was selling diamonds in breach of contract (Reuters, 1993, 24 December), but the Committee was also quick to point out that Russia "was losing at least 30 percent of its potential profits in diamond sales because of the agreement." (Reuters, 1993, 24 December)

The CSO was forced to decrease its sales to $1,823 million in the second half of 1993 (Ogilvie Thompson, 1993, p. 3), and to increase CSO diamond stocks from $3,663

million to $3,962 million. (Ogilvie Thompson, 1993, p. 59) By this time, De Beers recognized that Russia was playing a role in disrupting the diamond market. In addition to blaming reduction in sales in the second half of 1993 on an increased sale of Russian polished diamonds, on rough diamonds from Angola and Ziare and on releases from United States' stockpiled diamonds (Ogilvie Thompson, 1993, p. 3), De Beers also blamed Russia for selling unpolished diamonds.

> A further, unforeseen factor in the second half of 1993 ... [is] Russia's sale of gem [rough] diamonds from stockpile, and from within its industry in contravention of our agreements ... (Ogilvie Thompson, 1993, p. 3)

From the point of view of a cartel manager, the Russian situation worsened in 1994 and De Beers' annual report noted:

> Trading in rough diamonds, however, was disrupted by massive sales of Russian diamonds, often at discount prices, by-passing the CSO, which impaired market confidence and the CSO's own sales. (Ogilvie Thompson, 1994, p. 3)

In September 1994, De Beers openly accused the Russians of "cheating" the cartel and "leaking" diamonds outside the single channel at a value of over $500 million. (Lloyd, 1994, September 10; *The Financial Times*, 1995, 18 August) Cheating is the recognized terminology to describe the actions of cartel members that violate a cartel agreement. (Caves, 1979) De Beers believes there were 1,000 unauthorized Russian diamond sales in 1994, all in violation of the joint agreement. (Atkinson, 1994)

The issue of Russia cheating the cartel was first raised in 1992. (Boulton, 1992, 22 December) At the time, representatives of De Beers said that, although they believed diamonds without the sanction of the government were smuggled from Russia, the volume was small compared to the problem De Beers faced with smuggling from Angola. (Boulton, 1992, 22 December) In 1994, there was considerable evidence that relatively large volumes of rough diamonds were coming out of Russia.

In spite of the overwhelming evidence, the Committee for Precious Metals and Precious Stones of the Russian government continued to deny reports that large amounts of diamonds were leaking and dismissed De Beers' accusations as "propagandistic." (Behrmann and Banjerjee, 1995) Evgeny Bychkov, Chairman of the Committee of Precious Metals and Precious Stones, strongly denied the De Beers' estimate that $500 million worth of diamonds leaked out of Russia in 1994 and that $600 million leaked out in 1993 (Lloyd, 1994, 29 September; Higgins, 1994, 13 November) Instead, Bychkov insisted Russia had only sold $120 million, adding that:

> Everything else sold is just small change. We know who is dealing illegally in diamonds here and what they are selling is very little, (Lloyd, 1994, 29 September)

The Diamond Russia Sakha Company also denied selling diamonds in breach of the agreement with De Beers. (Brasier, 1994) When a reporter asked the President of Diamond Russia Sakha Company whether the Committee of Precious Metal and Precious Diamonds, rather than his company, violated the agreements he responded with a "no comment," and added that he was "neither a [polite] investigator nor a [legal] prosecutor." (Schietz, 1995, p. 59)

6.2.2. The truth about Russia "cheating" the cartel

Is there any truth about Russia cheating the cartel? The agreement that Russia signed with De Beers, which extended the agreement De Beers had with the Soviet Union, in its simplest interpretation agreed that 95 percent of Russia's rough, gemstone diamonds are to be sold through the CSO until 1995. The remaining five percent of the rough diamonds, according to the agreement, could be sold independently by Russia. Russia could also sell all of its cut and polished diamonds independently of De Beers. This explains De Beers' concern about polished goods in the 1980s through 1993.

The reason that five percent of rough, gemstone diamonds for independent sale were included in the agreement allowed the Russian side to "test the price level for [Russia's] own resource," (Makarchev, 1995, p. 1) to discover if De Beers was giving Russia a fair deal.

Throughout negotiations with De Beers, Russia and Sakha representatives continued to express an interest in increasing sales outside the cartel from five percent to 20 percent, even though this obviously defeats the purpose of having a cartel in the first place. (Donovan, 1995) Since 1992, raising the percent of diamonds sold outside the cartel has certainly been the position of the Committee for Precious Metals and Precious Stones, publicly stated by the committee's former chairman, Yevgeny Bychkov, and also the position of the parliamentarian, Leonid Gurevich. (Boulton, 1992, 22 December) Vyachelsav Shterov, the current president of Diamond Russia Sakha Company, also stated that Russia needs additional proof to see if the difference between the price Russia receives for rough diamonds from De Beers and the price De Beers receives from selling to cutters is justified. (Schietz, 1995)[7]

Some players within Russia understand that increased sales outside the cartel weakens the existing marketing structure. Sergei Ullin, marketing director for Diamond Russia Sakha Company, argued that rather than hold out for any percentage of independent sales Russia would receive the highest price for its diamonds if it completely supported the "single-market channel" of the cartel. (Boulton, 1993, 07 April) To be assured that De Beers was selling Russian diamonds at the highest price and passing the full value to the Russians, Sergei Ullin suggests that Russia send representatives to attend the CSO sales. (Boulton, 1993, 07 April) The evidence available suggests that the Russians are certainly engaged in many activities that can be construed as contrary to the spirit of the De Beers contract.

Russian exports, by value per quarter, compared to the half yearly sales of the CSO, when compared, also illustrates the dynamic struggle between De Beers and Russian exports (see Figure 6.3). The figure depicts how the CSO consistently attempts to compensate for changes in Russian sales. As Russian diamond exports increase, De Beers follows with a decrease in sales. As Russian diamond exports decrease, De Beers follows with an increase in sales.

Comparing Russian diamond sales on an annual basis is a way to check whether Russia is cheating the cartel. By agreement, Russia is to sell no more than 27.3 percent of De Beers total sale (26 percent of De Beers market share plus five percent above Russia's total sales). Figure 6.4 shows at a glance 26 percent of De Beers' CSO sales, the maximum amount Russia can sell in the market. Russian export statistics demonstrate that Russian is indeed cheating the cartel. Between 1993 and 1995 nearly $2.3 billion dollars of diamond sales circumvented the CSO cartel.

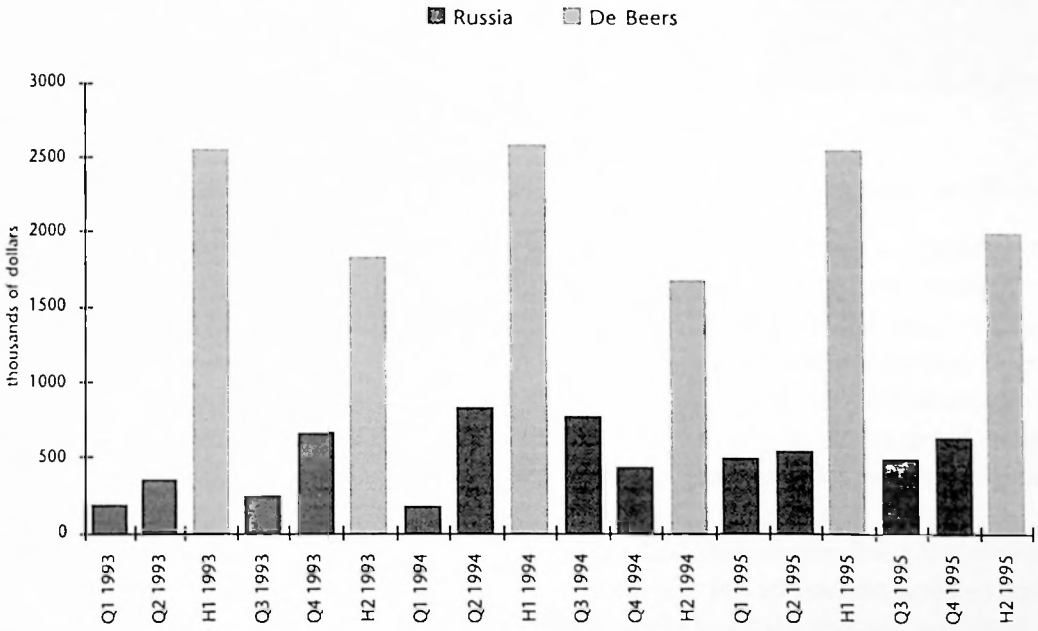


Figure 6.3. Russia (Sakha) export of rough diamonds by quarter, and De Beers CSO sale of rough diamonds. (Q = Quarter of year; H = Half of year)

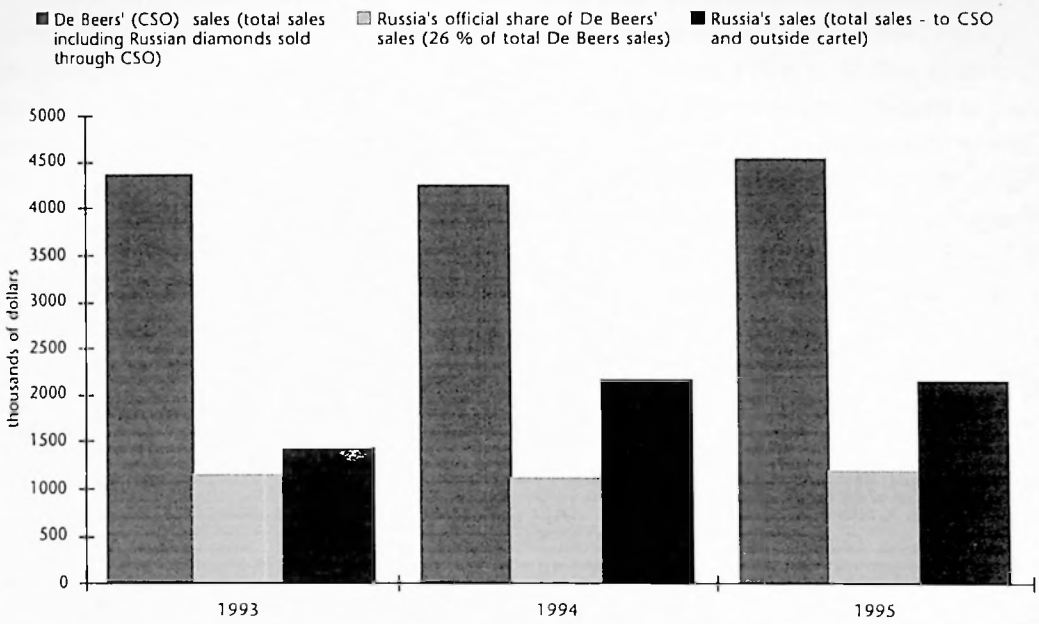


Figure 6.4. Russian exports, CSO sales and 26 percent of the CSO market share target for Russia.

All information about Russian diamond exports in Figures 6.3 and 6.4 comes from the Russian government. The Russian government releases quarterly Russian diamond export figures in a publication supported by the European Union funded through the London School of Economics. (LSE, various years)[8] The Russian government's diamond export figures give no information about the source of diamonds (produced or from stockpile) and stores no information about the quality of diamonds (percent of gem stones to industrial stones). The Russian government only supplies information about gross export volumes and values of rough diamonds.[9]

Therefore, it was the Russian sales outside the CSO that caused the volatility. For example, the world retail diamond market rose four percent in 1994 in CSO sales overall, but CSO's sales fell by three percent to $4.25 billion. If the Russians had not sold $500 million worth of diamonds outside the CSO then it is estimated that "... CSO sales probably would have crashed through the $5 billion record level, rather than languish at $4.35 billion, against 1993's $4.4 billion." (Atkinson, 1994)

The CSO could not announce a price rise for its other producers or increase the quota that the CSO purchased from other producers. Production for CSO producers was only around 80 percent of possible production. (Pruwer, 1995) From official Russian published figures (see Figure 6.4.) it is clear that Russia sold over $2.1 billion per year in 1994 and 1995, or 51 percent and 47 percent of CSO sales, respectively. This is also over $900 million more than the upper limit of 26 percent of CSO (agreed) sales.

In its 1994 annual report, De Beers estimated that "... Russia sold seven to eight hundred million dollars' worth of rough diamonds directly to the market in 1994, mostly from stock rather than current production." (Ogilvie Thompson, 1994, p. 3) One source claimed that the Russians were selling 1.5 million carats of uncut diamonds valued at around $350 million directly to Antwerp and Israel in 1993 and $750 million worth of diamonds in 1994. (Fuhrman, 1995) In light of the information above, and with the power of hindsight, these estimates may even be considered conservative. In 1995, it was reported that "[n]ot surprisingly, with so much activity in 1995 contrary to the spirit of the agreement, De Beers 'cut off' several buyers suspected of purchasing diamonds directly from Sakha and Russia." (Gooding, Harding, Lloyd, 1995, p. 17)

It was difficult for De Beers to "pin down" the Russians on which specific diamond exports could be considered to contravene the agreement. To any specific accusation of cheating, Russian representatives always responded that a specific transaction was not covered under the De Beers agreement. There are several ways the Russians could technically claim that the exports were not covered by the agreement:

- Selling gem diamonds as "technical diamonds," since De Beers agreement covers only rough, gemstone diamonds. The distinction between gemstone diamonds and technical diamonds is often murky marginal diamonds. This is especially true since Indian and other Asian cutting centers now cut diamonds that formerly were considered too small to bother cutting;

- Selling rough gemstone diamonds outside the cartel from their stockpiles. This is not allowed under the agreement, but cannot be proved since the stockpile sales are kept secret by Russia;

- Selling cut diamonds from cutting centers operating in Russia and setting up new cutting centers in Sakha. This is allowed by the De Beers agreement;

- Sending rough diamonds abroad, through Russian or Sakha joint-ventures with foreign enterprises, to be cut by professional cutters, brought back to Russia and re-exported as cut "Russian" diamonds. This has been referred to by representatives of the Association of Diamond Producers [cutters] as "consignment selling." (Helmer, 1996, 26 February) This is technically illegal; and,

- Organizing bourses (sales) of Russian/Sakha own cut diamonds. This is allowed under the agreement, but not encouraged by De Beers.

The Russians often stress that the distinction between what can be classed as a gem or technical diamonds is difficult. De Beers is well aware of this argument and in its annual reports lambasted the Russians for:

> ... sale of gem diamonds from stockpile, and from within its industry, in contravention of our agreements, and the continued sale of "technical"

> diamonds in ways which also contravened the agreements. Concern was expressed by the CSO and in the cutting centers that these sales were destablising the rough market and detrimental to all producers. (Ogilvie Thompson, 1993, p. 3)

A look at the average price of diamonds that Russia exports supports De Beer's complaints that what the Russians are calling "technical" (generally known as "industrial" diamonds in English) are likely intended for the Indian and Asian jewelry market and not for industrial purposes at all.

The evidence would suggest that Russians have unusually high quality technical diamonds or the leadership of the Committee for Precious Metals and Precious Stones is understating how many gem diamonds it actually sells. For example, in 1993, according to *The Economist*, the Russians sold $1.14 billion diamonds through the CSO and another $680 million of technical diamonds. (*The Economist*, 1994) According to these figures, at least 37 percent, by value, of all diamonds sold, were industrial diamonds. This assumes all Russian diamonds (12 million carats) were sold as industrial diamonds for the sum of $680 million equal to $57 dollars a carat, in a market where industrial diamonds usually bring $1 to $2 a carat. (NWT, 1993, p. 7) In 1992, the Russian government reported a total export of 11.3 million carats with an average price of $125. In 1992, De Beers was paying an average of $110 per carat for Russian rough diamonds.[10] (Bond, 1992, p. 638)

The average Russian gem rough diamonds in 1994 fetched a little over $100 a carat, but this fell to $58 per carat in 1995. This would support the hypothesis that Russia was dumping from its stockpile and running out of quality diamonds.

The Russian stockpile of diamonds is one of the greatest unknown factors that can affect the world market. Estimates of Russian stockpiles vary from $1 billion to $8 billion worth of rough diamonds (Reuters, 1995, 22 May). For comparison, De Beer's own stockpile of diamonds was about $4.67 billion. (Chenry, 1996, 05 March) It is therefore likely that Russia and De Beers have roughly equal diamond stockpiles.

The Russians are known to be selling gem diamonds from their stockpiles outside the De Beers cartel. It was estimated that Russia sold from between $600 million and $1.2 billion rough diamonds from their stockpiles in 1994-1995. (Dowden, 1995) According to some sources the Russian reserves should be exhausted by 1997. (Dowden, 1995) Another source claims that De Beers estimates that Russian reserves will be exhausted in five years. (Fuhrman, 1995) A consultant from Antwerp warn that the West is underestimating Russia's "far more powerful position." (Behrmann and Banjerjee, 1995) If the estimate that Russia will exhaust its reserves within the next five years is true, then the long term viability of Russia as a potentially controlling player on the diamond market is very tenuous.

De Beers also accuses Russia of "high-grading" diamonds and trying to pass low quality goods onto De Beers. (*The Economist*, 1994) De Beers clearly does not want the finest diamonds sold directly to buyers in Antwerp while leaving them with a low-end product so that the, "CSO will turn into a dustbin for otherwise unsellable goods." (*The*

Economist, 1994) In 1994, De Beers turned down 100 million dollars' worth of Russian diamonds for the first time, claiming that the diamonds were below adequate quality. (*Sankt-Petersburgskoye D.O.*, 1994) Russians turned around the accusation and claimed that De Beers was trying to cheat them because Israeli cutters were willing to pay Russian prices 30 percent higher than De Beers' offer. (*Sankt-Petersburgskoye D.O.*, 1994) Russian representatives also pointed out that the average $110 per carat De Beers paid for Russian rough diamonds was less than the $350 per carat De Beers paid for Namibian diamonds. (Bond, 1992, p. 638) De Beers responded by claiming that Russia's diamonds were generally of lower quality. (Bond, 1992, p. 638) De Beers also reminded its producers, that De Beers paid for a "major marketing effort, mounted on behalf of the entire industry, carried out in 28 countries," (Ogilvie Thompson, 1995, p. 12) at the cost of over $175 million a year. (Miller, 1995, p. 10)

The sales of Russian cut diamonds was probably the greatest problem for the De Beers cartel. This activity was not covered under the 1993 agreement and led to plethora of various schemes under which Sakha raw diamonds could find a way into the world market. Russian cut diamonds are sold by Almaz [Diamond] Export Company, basically controlled by the Russian Ministry of Precious Metals and Precious Stones until March 1996 on behalf of the cutting centers in Moscow and Sakha. The Sakha cutting centers are under the control of the Diamond Russia Sakha Company.

The entire Russian diamond industry probably buys between $700 to $850 million in rough diamonds, and then sells from $800 million to $1,000 million worth of cut diamonds. Five Russian companies (centers) outside of the Republic of Sakha make up most of the Russian cutting industry. The cutting centers employ thousands of people. The existing cutting industry outside of Sakha is extremely powerful in Moscow, and is organized as an association.

Yevgeny Bychkov, after losing his job as the head of the Russian Committee of Precious Metals and Precious Stones, became the president of the Association of Russian Diamond Producers [cutters and polishers], a non-governmental union of cutting and polishing enterprises. (Reuters, 1996, 26 July) The association, basically a lobby group of cutters and polishers, has no formal relations with the Russian government or the Diamond Russia Sakha Company, but is tacitly supported, within the Russian government, by the deputy head of the Committee of Precious Metals and Precious Stones, Leonid Gurevich. (Reuters, 1996, 26 July)

The Association of Russian Diamond Producers is currently lobbying the Russian government to increase the amount of diamonds that are cut within Russia. The Association does not want to see any action taken by the Russian government or the Diamond Russia Sakha Company that might raise prices of diamonds internally. Another fear that the Association has is that a new agreement between De Beers and Diamond Russia Sakha Company would put an end to "consignment selling." Under this system Russian cutters send out raw or partially cut diamonds on consignment to lower cost" cutters in Antwerp,

Bombay or Tel Aviv. The cutters return the diamonds and they are sold as "Russian cut diamonds."

"Consignment selling" is precisely what the Diamond Russia Sakha Company gave up in their February 1996 agreement with De Beers, as one of the Russian concessions. (Khalip, 1996, 23 February) The cutting enterprises within Russia, especially outside Sakha, claim that the industry cannot survive without "consignment selling" of diamonds. (Helmer, 1996, 26 February) The exception within the De Beers contract that allowed the sale of Russian cut diamonds outside the cartel became an avenue to sell rough diamonds outside the cartel. Within the agreement with De Beers there is a large upper limit to the number of stones that Russia/Sakha can sell if they are cut domestically, but Russia does not have the ability to cut all these diamonds. More to the point, Russia cannot cut these diamonds profitably. In the 1990 contract with De Beers a domestic cutting quota was set at two million carats of cut diamonds out of 12 million carats of rough diamonds (Bond, 1994, p. 547). The reliance on the foreign "consignment cutters" is a virtual admission that cutting is not profitable in Russia and that it is merely a method for the Russian cutters to become middle-men and inrease their share of the profits.

The Republic of Sakha is also caught up with the dream of creating a new value-added activity for its diamond industry. (*Uspekh*, 1995a, p. 1) Sakha established 15 cutting companies in Sakha which in 1994 sold $30 million in cut diamonds, at a loss of $5 million. (Teslenko, 1995, p. 70) In 1995, the Sakha government reported that eleven cutting enterprises sold $5.9 million of cut diamonds and lost $400,000. (Goskomstat-Sakha, 1996a, p. 25) Cutting diamonds is touted by most Sakha politicians and Sakha's diamond industry representatives as the industry of Sakha's future. The activity has been relieved of most taxes by order of the Republic of Sakha's President. (Shadrin, 1995, p. 80)

Tyymaada Diamond Company[12] has established 15 cutting centers, several with foreign partners, and intends to hire about 2,000 people. The Tyymaada Diamond Company has a general license for 1995 to export $50 million worth of diamonds with the help of Diamonds Russia Sakha Company. (*Uspekh*, 1995a, p. 1)

The leadership of Tyymaada Diamond Company gives an unconvincing account of benefits that the diamond cutting industry might bring. When Georgi Yakovlev, the president of Tyymaada Diamond Company was asked whether creating a diamond cutting industry in Sakha was motivated by "patriotism, economics or social interests ...," he replied that first off, the newly created diamond cutting industry solves the problem of jobs, particularly in the rural areas.

> [C]ounty capitals are territories that do not produce anything and live only on subsidies from the Republic budget, ... and the diamond cutting industry is the solution to this problem. (Shadrin, 1995, p. 80)

Interestingly, Vladimir Teslenko, a Moscow journalist, noted in 1995 that the diamond cutting industry also receives sizable subsidies and "[t]he only thing between

Tyymaada Diamond and financial ruin is the support of the regional government." (Teslenko, 1995, p. 70)

Currently, there are two kinds of cutting centers in the world market. There are the traditional centers, New York, Antwerp and London, which are tied directly to the fashion industry and are the backbone of the industry. India and Thailand represent newly created centers that cut small, cheap diamonds previously not considered worth the effort. Cheap labor in India and Thailand, particularly child labor, make this low end of the industry viable. Israel is unusual because it is a relative newcomer to the diamond industry. Israel's industry was created by World War II refugee cutters from Holland and Belgium. Israel credits its success on the strong links with cutters (through family ties) and markets in New York, Antwerp and London.

Sakha has established a diamond bourse (a special kind of diamond sale), which presently is limited to the sale of cut diamonds. (*Delovye Lyudi*, 1994, p. 30)

The Republic of Sakha is not close to the pulse of fashion, nor is the Republic's labor cheap. In 1992, the Russian cutting industry needed subsidies and cutting diamonds was subtracting value rather than enhancing the value of rough diamonds:

> The unique situation of Russia is also in that it is the only one of the diamond producing nations which has a highly advanced [diamond] cutting industry. But, how absurd this sounds, this industry needed to be subsidized—a situation that is improbable in world practice! ... The lack of talent of the management, and the ignorance of international demands often lead to the situation where finished cut diamonds would fetch a lower price than the rough diamonds they were cut from. (Gendlin, 1993, p. 9)

The Economist, in discussing the creation of a diamond cutting industry noted that it made sense to pose two basic questions:

> Why do no diamond-producing countries have a significant cutting industry? (South Africa tried to develop one, but gave up.) (*The Economist*, 1994) How come Antwerp, Tel Aviv, Bombay and New York—the four big cutting centers-produce not a single diamond? (*The Economist*, 1994)

The Economist then focuses on the fact that diamond cutting can lead to loss of value in the raw material in a market that is extremely sensitive and fickle. The argument against creating a diamond industry in Sakha is compelling:

> The answer lies that diamond cutting is a fashion business dominated by small family-owned firms with a keen instinct for what the market wants. It is also a business which operates on fine margins: if an Israeli cutter loses half a percentage point more of a stone than he had planned to while cutting it, he makes no profit ...
>
> Russia's few existing cutting factories are sprawling, unproductive operations which employ thousands and are light years away from any kind of market. If Russia insists on developing its cutting industry, it will probably

> end up subtracting value from its diamonds and lose a fortune—all to stop being serfs to the Oppenheimer [founders and owners of De Beers] tsar. (*The Economist*, 1994)

The economic answer is extremely simple and is founded in the reasoning of David Ricardo: Sakha and Russia, while having an extremely great comparative advantage (see Chapters 1 and 7) in the production of raw diamonds, has no comparative advantage in cutting diamonds. Perhaps, Sakha and Russia, being "light years" away from markets geographically and from the point of view of fashion, could be said to have a negative comparative advantage in cutting diamonds. (*The Economist*, 1994)

It appears that the concept of comparative advantage is not understood by the Sakha and Russian governments and there is a belief that Sakha must merely find its "place in the sun" at any cost. (*Delovye Lyudi*, 1994, p. 30) Sakha believes unquestionably that exporting a finished product must be better, even if this takes away the value of the raw good.

> It is always bad for a country to get the raw materials and export them," says Mr. Safonov [vice president of Diamond Sakha Russia Company] in Mirnyy. "Israel does not have a single diamond mine, but it makes diamond jewelry worth $4 billion a year. (Higgins, 1994, 13 November)

Canadians, who are developing a diamond industry in the Northwest Territories understand their own situation in a way that takes in to account the concept of comparative advantage:

> ... [i]n the N.W.T. [Northwest Territories] BHP [mining company] and its Canadian partners believe diamond processing and manufacture is beyond the sale of rough diamonds [and] is economically unattractive, and [Canadians] do not plan to enter this part of the business.
>
> Virtually every diamond-cutting factory which has ever been created as a result of political pressure in black Africa, Russia, China or elsewhere has been closed, or operates at a substantial loss. (*Above and Beyond Magazine*, 1995, p. 34)

Of course, the diamond cutting industry is only economically illogical if it is judged on its proclaimed merits. The function of the cutting centers may be more complex than merely creating jobs and saving electrical energy.

> The bourse is expected to go through several stages in its development. "We are trying out the system on polished diamonds," says its president, Pavel Andreev. "Once a domestic market has formed, siteholders (*sic*) [sight holders] from Almazy Russia-Sakha will operate through an international network of bourses." (*Delovye Lyudi*, 1994, p. 30)

There may be other motives as Alan Campbell, deputy head of De Beers' Moscow office, notes,

> Some of those joint ventures are created without any intention of polishing [cutting] ... but as a way of laying hands on cheap rough [dia-

> monds], smuggling them out of the country and selling them illegally on the market. (Behrmann and Banjerjee, 1995)

Russian law prohibits the sale of Russian rough diamonds domestically or abroad, outside the De Beers agreement so the Sakha government passed a law allowing the sale of cut diamonds in the city of Yakutsk. As Yakovlev of Tyymaada Diamonds explains, "[f]rom Russia, and the Commonwealth of Independent States people come in hoards to buy everything [diamonds] available. We are not permitted to open our own store in Moscow. So we sell diamonds here without any problems." (Shadrin, 1995, p. 84)

The various parties that cut diamonds in Moscow and Sakha want to ensure the sales of their diamonds and each want the entire business to be under its own control. The Bychkov/Gurevich group is proposing a Moscow-based bourse called the Federal Diamond Center to sell diamonds. This concept is currently supported by the Association of Cut and Polished Diamond Producers, and by groups generally antagonistic to the Republic of Sakha and the Diamond Russia Sakha Company. Actual sale of diamonds through the Federal Diamond Center was promised by federal officials in 1995, but the decision was delayed indefinitely. (Makarchev, 1995, p. 1)

6.2.3. Why Russia "cheated" the diamond cartel

Relations between Russia and De Beers (from 1993 to 1996) is reminiscent of the politics among the European countries before the First World War. The relations appear extremely proper and on the surface everything is extremely correct. Subtle signals are sent from one side to another. For example, in 1994, during a particularly difficult period of a second round of talks both sides sent second-level people to negotiate and they "did not even hurl accusation at each other." (*The Economist*, 1994) Despite De Beers frustrations with the problem of Russia's cheating the cartel and Russia's destabilizing tactics, De Beers reported:

> It is widely recognised, and often publicly stated in Russia, that co-operation between De Beers and Russia is in the interest of both parties, and indeed of the diamond world generally. No doubt that is why Russia has co-operated so successfully with De Beers for over 30 years. Whilst we are not satisfied with the existing arrangement, we will continue to negotiate, being confident that cooperation will extend beyond the expiry of the current contract at the end of this year [1995]. (Ogilvie Thompson, 1994, p. 4)

The Russians followed a policy of officially denying any wrong-doing, usually followed by sales in violation of their agreement with De Beers. (Donovan, 1995) For example, the Russian Committee for Precious Metals and Precious Stones official leadership claimed that very few diamonds were being sold illegally in 1994. (Lloyd, 1994, 29 September) Western analysts and De Beers had little difficulty in exposing Russia's diamond sale outside the De Beers agreement. (Donovan, 1995; Fuhrman, 1995) These sales were widely reported in the western press:

> Russia is already thought to have broken the terms of the exclusive agreement by increasing direct diamond sales. Of the estimated $2 billion worth of rough and polished Russian diamonds sold last year, more than half are thought to have been in breach of the sales deal with De Beers. (Donovan, 1995)

Cheating De Beers is extremely easy to rationalize and politically popular, for parties within Russia. Internal posturing is well served by a belief held by some of the Russians who think that the De Beers cartel is not giving Russia full value for their diamonds. (*The Economist*, 1994) Politically, it is convenient for Russian nationalists to denounce an industry that needs contacts and cooperation with western partners to operate effectively. *Pravda*, the newspaper that represents the views of right-wing and left-wing nationalists, stated that Russia was becoming a "raw material appendage of the Oppenheimer empire." (*The Economist*, 1994) In addition, Russian parties selling outside the CSO see that they can cheat the cartel and that De Beers cannot really do much to punish Russia (*The Economist*, 1994). That is, De Beers' mechanism to punish cartel members that cheat is relatively ineffective (Caves, 1979). De Beers can only warn the Russians that the diamond market can collapse and prices of rough diamonds may fall if Russia contravenes its agreement with the cartel.

In the meantime, a sizable contingent of officials within the Russian system believe that Russia can do well without the help of De Beers:

> The belief in Russia that producers could achieve a higher return outside the cartel has been strengthened by the retirement of a generation of officials used to working with De Beers in the cartel system- and the rise of nationalist politicians hostile to the agreement on political and economic grounds. (Lloyd, 1994, September 10)

On the Russian side, competing groups seem in varying degrees to be "united by suspicion of De Beers, and jealous of its power." (*The Economist*, 1995, 19 August p. 65) The anti-De Beers faction has two unofficial spokespersons: Leonid Gurevich, the former head of the parliamentary Committee on Gold and Precious Metals and now deputy head overseeing diamonds at the Russian Committee of Precious Metals and Precious Stones (executive branch) (Lloyd, 1994, September 10); and Evgenyy Bychkov, the recently sacked head of the Russian Committee of Precious Metals and Precious Stones and now the head of the Association of Russian Diamond Producers.

Gurevich and Bychkov are also referred to as "the diamond patriots" because their opinions support a nationalist stance. (Kempton and Levine, 1995) A brief description of some of Gurevich's statements to the press show why he is considered a "diamond patriot" for the most part. Gurevich argues against working with De Beers and capitalizes on feelings of Russian nationalism by demonizing the western company (Donovan, 1995). Gurevich stated that the 1990 agreement with De Beers is too confining for Russia. (Lloyd, 1994 10 September) Gurevich often criticized De Beers in the press:

> The question is who is it [the agreement] profitable for? It is clear from the very beginning. The least interested party in our diamond cutting operations is the company De Beers. It doesn't need cut diamonds, it deals in rough diamonds. The basic profit for the company is that not one diamond producing country has a diamond cutting industry—open demagoguery. It is predicted that a break between Russia and De Beers will destroy the diamond market. This statement has no basis [in fact]. One thing is clear, the exit of Russia will hit the financial interests of the South African firm. (Gendlin, 1993, p. 10)

Gurevich had no specific alternative to the given situation except to say that "Russia is not just seeking the amendment of some provisions [of the agreement] but wants the whole strategy of dealing with the cartel to be reviewed." (Donovan, 1995) Gurevich stated that agreement could be reached only if De Beers "grants Russia the share of the stock in the CSO [the Central Selling Organization], which corresponds to the Russian share of diamonds sold [through the CSO]. Then Russians will be equal partners in managing the diamond trade and splitting its profits." (Guseinov, 1994) Otherwise, "Russia, if it desires, can knock-out De Beers by leaving the cartel and carry out over several years its own diamond trade." (Guseinov, 1994) Gurevich stated that he believed although the world diamond market would be temporarily destroyed, later, "no one would be able to serve Russia with ultimatums." (Guseinov, 1994) Gurevich also claimed that De Beers bribed all the officials in the, "upper echelons of the Russian bureaucracy." (Guseinov, 1994)

In the 1990, De Beers advanced the Soviet government a loan of $1 billion, in what De Beers described as a gesture of goodwill. (Ogilvie Thompson, 1993, p. 3) According to Gurevich, speaking as the deputy head of the Ministry of Precious Metals, De Beers received as collateral 13 million carats of Russian diamonds and an additional $258 million worth of diamonds De Beers held back in their stockpile from regular sales. (Guseinov, 1994) In 1994, De Beers reported that Russia was honoring the loan and the outstanding principal was fully repaid by the end of 1995. (Ogilvie Thompson, 1994, p. 3; Ogilvie Thompson, 1995, p. 5)

Instead of seeing this as genuine assistance on behalf of De Beers some Russians viewed this with suspicion. One Russian journalist wrote, " [De Beers made the loan] so we can be more reliant on the CSO. What kind of help is this? They [De Beers] organized international credit with [Russian diamonds as] collateral. ... [d]iamonds, that are evaluated in London at 4 to 5 billion dollars ... [rather than only 1 billion dollars]."(Shalnev, 1994) Gurevich accused De Beers of using the loan as a tactic to tie up the Russian diamonds in a scheme to pay "... ruinous interest payments." (Guseinov, 1994)

The "diamond patriots" not only see an enemy of Russia from without, but also an enemy from within. In this way, the Russian diamond situation is not merely a struggle between Russia and De Beers, but at least a three-sided struggle among De Beers, the Russian diamond patriots and the Sakha government (along with their Moscow-based

allies). Gurevich, for example, suspects that Russia is being cheated by the Republic of Sakha. Sakha, in Gurevich's opinion, is manipulated to be in league with De Beers:

> I have the grounds to announce that the politics chosen by the existing "diamond" leadership of Yakutiya-Sakha, carries great harm for Russia and Yakutia ... The fact is that a real war has started against creating a highly developed diamond cutting industry in Russia. In this war Yakutia is being used in the most dishonest and defeating manner, burning the national map and painting with grand words about the good of the people ... I can say one thing, that the national separatism in Yakutiya, for the most part was born out of "the diamond rush," which led to direct agreements with De Beers. (Gendlin, 1993, pp. 9–10)

Gurevich and the diamond patriots consider that the duped Republic of Sakha operates through the Diamond Russia Sakha Company:

> Today 20% of its own production Yakutia-Sakha exports directly. Moreover, the Republic has the right to 45 per cent on all profits from exporting diamonds, and 45 per cent on the profits of all sold cut diamonds. It would seem we should only be happy. Previously, diamonds were the monopoly of the Main Directorate for Diamonds and Gold [Glavalmazzoloto]. Now to replace that monopoly is a more dangerous monopoly—the joint stock company Diamond of Russia-Sakha. This organization is protected, as if with armor, by the Russian legislation on firms and firms' activities. And all the beautiful words about national sovereignty, worrying about the good of the people, can turn into another lie, with which the new owners will cloak their own interests. (Gendlin, 1993, p. 9)

In response to the diamond patriot's critic, at the opposite end of the Russia-Sakha diamond debate, defenders of Sakha's rights like Vitaly Artamonov,[13] the Sakha Minister of Foreign Affairs argue that "[t]oday, only one person decides this [the diamond] question...This person is the President [of Sakha]." (Higgins, 1994, 13 November) As Artamonov explained to a foreign journalist:

> Moscow tried to pacify the Yakuts by giving them 20 per cent of the diamonds, 11 per cent of the gold and all the oil and gas locked under the frozen tiaga. The Yakuts weren't bought off for long. Foreign Minister Vitaly Artamonov said that Yakutia would soon be demanding 40 percent of its diamonds and 50 per cent of the gold. (Cienski, 1995, p. 1)

The period of Gurevich's most extreme criticism of the Republic of Sakha coincided with the "budget wars" (1992-1994) between the Russian Federal government and the Republic of Sakha. The budget wars and the criticism by the diamond patriots became closely linked when the Russian government slowed up Sakha's diamond export permits and the Sakha government retaliated by refusing to pass on taxes it collected within the Republic to the Russian treasury. Russia responded by refusing to give Sakha any money for supplying northern areas. The rift between Sakha and Russia over budgetary and rent

issues was exacerbated by accusations by the diamond patriots that the Sakha government was illegally selling diamonds directly to De Beers, without going through Moscow. (Gendlin, 1993, p. 10) Gurevich, for example, claimed in a press interview that he had documents showing that $43 million dollars of these diamond revenues, earned behind Moscow's back, went to a Cyprus bank account owned by a Yugoslavian business partner of the Sakha government. (Gendlin, 1993, p. 10). The Sakha government responded that they could do what they wanted with "their" share of the diamonds, without reporting it to the Russian government (Gendlin, 1993, p. 10). Furthermore, the Sakha government stated that they were merely helping themselves to money Russia held as ransom to get Sakha to behave and that the money was "owed" to them by the Russian government (Gendlin, 1993, p. 10).

The political relations between Sakha and Russia are linked to Sakha's fiscal arrangements and the division of economic rents from diamond exports. By agreement with Russia, Sakha received the right to 11.5 per cent of refined precious metals (gold) production and 20 per cent of diamond production. (Argounova, 1995) The volume of gold and diamonds is agreed upon at the beginning of the year by Sakha and Russia. Once an agreement is made, then the treaty between Russia and Sakha binds Russia to a "take-or-pay" condition. That is, "...should Russia fail to deliver the agreed quantity of minerals, Sakha will be compensated for the amount of undelivered goods in currency or it will reduce the amount of gold supplies to Russia by the amount of undelivered goods." (Argounova, 1995) Even when the Russian government and the Republic of Sakha agreed upon a fiscal arrangement, the diamond patriots continued to criticize Sakha for taking an unfair portion of the economic rents away from the Russian Federal treasury.

The mistrust between various parties in Moscow and Sakha is further aggravated by the lack of facts surrounding Sakha and Russia business and fiscal arrangements. Most importantly information about diamond production and earnings is a closely guarded secret within the Russia Federation and the Republic of Sakha. The management of public foreign currency earnings, the primary vehicle by which captured diamond revenues are held by the Sakha government, is also held in great secrecy. It is also unclear how diamond revenues and foreign currency are incorporated into the Sakha ruble economy, the Sakha government budget and the diamond company's operating costs. In short, it is difficult to trace any foreign money flow in and out of the Republic or within the Republic.

Calculations based on available data show that Sakha is indeed receiving a greater share of the resource revenues than is officially allocated by treaty with the Russian Federation government. Sakha receives more than 20 per cent of the value of diamonds and 11.5 per cent of the gold it produces in its split with the Russian government. A crude estimation shows that Sakha, through a process of counting its direct share of the resource, taxing the production of diamonds and gold, and reaping profit as part owner of the diamond and gold enterprises, receives an amount equal to almost 40 per cent of the total share of the

resources (See Table 6.1). In other words, Sakha is extremely successful in capturing economic rents.

	1993	1994	1995
Gross earning on diamond sales	$1,418,000,000	$2,179,000,000	$2,139,000,000
Gross value of gold production	$300,955,753	$292,848,548	$333,609,596
Gross earnings on foreign coal sales	$141,048,000	$148,000,000	$212,385,000
Sakha Republic's direct share in the diamond revenues			
Sakha's share of total diamond resource	$260,739,330	$373,849,073	$378,893,849
Sakha and its municiple govemments share of profits as stockholder in Diamond Russia Sakha Company (32% + 8% of profits)	$86,860,000	$230,560,000	$244,530,753
Sakha's total direct share in diamond revenues	$347,599,330	$604,409,073	$623,424,602
Sakha Republic's share in gold resources			
Sakha Republic's share of total resource (40% of total value of gold minus 40% estimated costs)	$30,696,853	-$26,464,296	$13,561,880
Sakha's tax revenue from mineral industry (estimated)			
Resource use tax	$102,380,640	$147,762,509	$172,288,448
Sakha's share of gross profit's tax (22% exclusive of VAT, special tax, duties minus total production costs; another 13% goes to federal government)	$77,012,132	$135,584,481	
VAT (20% manufactured goods)	$14,049,808	$27,844,043	
Local transport tax (1% of payroll)	$648,776	$1,196,047	
Maintaining residential & social infrastructure (1.5% of payroll)	$973,164	$1,794,071	
Contributions to agencies of law & order (3% number of workers' x minimum wage)	$14,184	$770,470	
Payments for maintainence (5% number of workers' x minimum wage)	$23,640	$1,284,117	
Total estimated tax revenue from mineral industry	$195,102,345	$316,235,739	
Sakha Republic's total share ($)	$714,446,528	$1,035,228,517	
Sakha Republic's "real" share in Russia's diamond and gold industry (%)	38%	40%	
Sakha's population (people)	1,073,800	1,060,700	
Sakha Republic's total share, per capita ($/person)	$665	$976	

SOURCE: Goskomstat-Sakha, 1994a, pp. 5–12; Goskomstat-Sakha, 1994b, pp. 49–50; Goskomstat-Sakha, 1995a, pp. 6, 68; Goskomstat-Sakha, 1995b, pp. 8–9, 13–14; Goskomstat-Sakha, 1990b, pp. 25, 81–82.

Table 6.1. The Republic of Sakha's share of economic revenue from diamond and gold mining.

In addition to the income the Sakha government captures from gold mining, it also receives income from a large public fund, the Fund for Future Generations. This fund was created and is sustained by diamond revenues earned by Sakha. Moreover, the Sakha government receives federal transfers and low interest loans from the Russian government, either for specific purchases, federal programs or federal "off-budget" transfers.

It is difficult to determine the size of any of these sources of income. The Fund for Future generations supposedly earns a considerable revenue of its own, but is not included in the Region's statistics. I met (on two occasions) and asked members of the Fund's Board of Directors, how much money this fund has, but was told that they were not allowed to divulge this kind of information. Dr. Tussing (an economist with the University of Alaska Anchorage) and I estimate that this fund might have $750 million to $1.5 billion. The total amount of federal transfers and loans that Sakha receives are not published. Off-budget federal transfers are also not published.

There are several possible explanations why the Sakha government would go to such lengths not to publicize the flow of monies. First, old habits from the Soviet period may be hard to break, or there may be a genuine belief that "the people" are better served not knowing what the government and the diamond industry is doing. Second, it is possible that the money is being used for personal gain or taken illegitimately by officials or company employees. The West generally accepts that the diamond industry in Russia is corrupt. For example:

> Diamond earnings from this have disappeared without a trace-probably into the pockets of Russian bureaucrats who are in charge of minding the diamond stockpile back home. (Fuhrman, 1995)

Westerners do not, however, attribute theft to any specific level of government. Third, the Sakha government may be trying to obscure its own financial issues so that the Russian government or parliament, or a government of a rival region, does not discover the volume of income Sakha generates. Fourth, the government and the diamond company may not be fully competent at managing money from diamond sales and it may be that no full accounting of diamond income exists.

Meanwhile, while the debate between Sakha and Russia continues within a vacuum of information, Gurevich argues that Sakha and the Diamond Russia Sakha Company should work directly with the federal government. Gurevich tried to convince Sakha that it should place its trust in Moscow, since:

> [i]t is wrong to build your economy resting on only diamonds-this is a mirage. There will come a time when something will happen to the market and then where will Yakutiya put its diamonds. (Gendlin, 1993, p. 10)

Gurevich also argues that Russia and Sakha should phase out working with De Beers and that central Russia, not Sakha, should develop a diamond cutting industry and a cut diamond market "free of monopolism of De Beers ... where Russia can build a 'rough

and cut diamond pipeline.'" (Gendlin, 1993, p. 10) Furthermore, the diamond patriots think this should be done with a Russian state monopoly to "coordinate activities between competing Russian enterprises and exported exclusively by the Russian government (Gendlin, 1993, p. 10). Gurevich concludes that this is "... classical market relations, giving a field for participation by government and private firms."(Gendlin, 1993, p. 9)

Certainly the diamond patriots have the support of the Moscow-based cutting industry, who fear that setting up diamond cutting centers in Sakha will deprive the existing Russian cutting industry of raw materials. (Kempton and Levine, 1995, p. 100) The Moscow-based cutting industry presented as evidence the closing, in 1992, of several Russian and Ukrainian diamond cutting centers, (Bond, 1992, p. 638) while Sakha opened up 15 cutting centers in 1993. Western journalists reported that the same Russian and Ukrainian diamond cutting centers became bankrupt because of inefficiency and waste. (Bond, 1992, p. 638)

6.2.4. 1994–1996 Russia contributes to diamond market volatility

The beginning of 1994, was a short reprieve in the growing feud between Sakha and the "diamond patriots." For one thing, Gurevitch lost his job as a member of Parliament, after Yeltsin dissolved Parliament by military force. The Sakha government backed the President during this conflic and was rewarded for its loyalty. As we have seen, however, Gurevitch did not lose a platform for very long, and became a deputy to Bychkov, the head of the Committee of Precious Metals and Precious Stones.

Throughout 1994, 1995 and until February 1996, the De Beers-Russian negotiations vacillated between total agreement and complete breakup. First, a new contract agreement was to be signed, followed by renewed threats of a Russian pull-out and then rumors of another settlement. (Atkinson, 1995) In 1994 the De Beers cartel faced again the possibilities of great losses, particularly in the second half of 1994. The primary reason for this was an:

> ... over-supply of diamonds customarily polished in India, and the continuing and substantial availability of Russian rough diamonds on the open market. (Ogilvie Thompson, 1994, p. 3)

Overall rough diamond sales by the CSO were high for De Beers at $4.25 billion for 1994. Sales were particularly strong in the first half ($2.58 billion), but the CSO began to lose ground in the second half of 1994 ($1.67 billion) because "direct sales to the market from Russia led to a deterioration in confidence in the cutting centers." (Ogilvie Thompson, 1994, p. 11) In the beginning of 1994, Russia again slowed its sales both through the CSO and outside the CSO, because of another paperwork snarl in Russia associated with internal disorganization of the entire diamond export system. As the president of Diamond Russia Sakha Company reported at the time:

> The government of the Russian Federation signed the documents for the 1994 export quota only on 7 April [1994], even though the paperwork was presented by us in November of last year [1993]. For about half a year the paperwork was drifting around. We can't put a pen in someone's hand

> and say "Sign!" .... [Although], it is true that in March the government gave us a quota for the first quarter. (*Uspekh*, 1995b, p. 1)

De Beers again took advantage of the decrease of Russian diamond sales in the first quarter of 1994, to sell the lion's share of their diamonds for the year. In the middle of 1994, the Russians resumed diamond exports at the rate of over $700 million per quarter (see Figure 6.4). De Beers, consequently, had to decrease diamond sales for the second half of 1994. The CSO was saved at the last moment from having to buy up polished diamonds to maintain cartel prices and compensate for the Russian flood of diamonds by a breakout of plague among workers in the cutting centers of India. (Ogilvie Thompson, 1934, p. 11) In De Beer's own words:

> Although the CSO was still able to announce record sales of $2,580 [million] for the first half of 1994, confidence continued to be affected in the second half by Russian sales [only $1,670 million in sales], growing concerns about profitability in the cutting centers, an oversupply of polished [diamonds] from India and, mercifully only for a short time, the unsettling effect of plague in that country. The CSO again returned to its traditional stabilising role of adjusting distribution to market requirements ... (Ogilvie Thompson, 1934, p. 11)

Once again, having avoided a crisis, De Beers boasted in their 1994 annual report that:

> ... over the whole year, only 2.7 percent less [income from rough diamond sales] than in 1993, is a tribute to its resourcefulness and the underlying strength of the market ... (Ogilvie Thompson, 19934, p. 3)

In 1994 and 1995, Russia and De Beers were brought several times to the brink of scrapping the agreement or starting an open price war. De Beers expressed displeasure over "[t]he unilateral and additional sales by Russia," (Ogilvie Thompson, 1994, p. 4.) and shored up the market by buying up the excess supply. Meanwhile, key members of the Russian government that either partially controlled or heavily influenced the process by which Russia sold diamonds abroad, continued to accuse De Beers of cheating Russia out of the full value of diamonds sold through the CSO. (Guseinov, 1994)

In the early part of 1995, "... the industry has been buzzing with rumors of a Russian pull-out from the unique private monopoly that allows De Beers to run a "single-channel" marketing system for the bulk of the world's diamonds." (Atkinson, 1995) Newspapers and experts began to point out that the 60-year old cartel created by De Beers was showing dangerous signs of coming apart. In particular, there were indications that the cartel was unable to compensate for the leakage of diamonds[14] from Russia and specialists were concluding that the "unthinkable" was occurring—the price of rough diamonds was dropping. (*The Economist*, 1995, 19 August, p. 63) Although in the first half of 1995, De Beers announced a profit of $402 million, the price of diamonds seemed to be falling. (*The Economist*, 1995, 19 August, p. 63) Secrecy about pricing within the diamond industry makes it difficult

to determine what was happening at the time, but De Beers implemented a "price neutral rebalancing" of its diamond prices. (Ogilvie Thompson, 1995, p. 13; *The Economist*, 1995, 19 August, p. 63) This was a euphemism for lowering prices on cheaper, smaller diamonds, while raising prices on larger, more expensive diamonds. A fall in the overall price of diamonds is unallowable within the advertising mythology of De Beers:

> ... a consensus is building in the diamond world that, in real terms, the average price of rough diamonds is falling. This would represent a breach with the greatest tradition of all—the claim that the value of diamonds never goes down. (*The Economist*, 1995, 19 August)

To add fuel to a very volatile situation the Russian side was quick to condemn De Beers for implementing a unilateral price restructuring, in violation of the mutual agreement. (Yegorov, 1995, p. 2) A little later in 1995 there were reports that "[f]ortunately for the diamond industry, reports in the past few weeks suggest that pro-De Beers Russian diamond professionals are getting the upper hand in deciding the future of a critical national resource which has quietly and steadily produced billions of dollars for the Russian treasury over the years." (Pruwer, 1995) Several months later the cartel was considered in "danger" from the Russians. (*The Economist*, 1995, 19 August) But by September, the new president of Diamonds Russia Sakha Company, Vyacheslav Shterov, was eager to come to an agreement with De Beers. (Teslenko, 1995, p. 2)

Most of the problem appears to stem from within Russia where there was no unanimity about a diamond sales policy. Various "groupings" within the Russian government, the Sakha government and the diamond industry clashed over what course of action Russia should take with De Beers. There was speculation in the Western and Russian press as to whether Russia would pull out of the agreement, and also on whether De Beers would continue to tolerate Russian actions that blatantly circumvented their agreement. The original extended agreement expired on December 31, 1995 with the dead-lock between Russia and De Beers unresolved.

6.2.4.1. What happens if Russia leaves the diamond cartel?

The potential effect of the exit of the Russians from the De Beers cartel brought out two diametrically opposed opinions. (Kempton and Levine, 1995, p. 80)

The views represented were either that the industry would collapse, or that nothing would happen and Russia would lose its position as a potentially destabilizing player. On the side of the doomsayers, there were the following opinions:

> ... failure to renew the deal would almost certainly mean a worldwide scramble for sales, triggering a collapse in gem-diamond values; (Atkinson, 1995, 17 January)
>
> Its [Russia's] defection from the De Beers-controlled cartel would be likely to set off a price war that could send prices tumbling; (Lloyd, 1994 (Sept. 10)

> Collapse of the deal would result in a huge shake-up of the diamond trading industry and is likely to have serious implications for world diamond prices. If Russia allows its De Beers agreement to lapse it is likely to step up supplies on the open market to help bring in badly needed hard currency; and (Donovan, 1995)
>
> If one of the world's largest producers of high-quality diamonds decided to leave, it might be hard to hold the cartel together, much less make a profit. (*The Economist*, 1994)

De Beers itself was very worried;

> Frankly, this [Russia leaving the cartel] is something too horrible to even contemplate," says Raymond Clark, British head of De Beers' Moscow operation. (Higgins, 1994, 13 November);

It was said of De Beers:

> [De Beers] ... is no longer a one-company monopoly. Instead, it has become the key controller of a cartel with a growing number of members. It is in no producer's interest to pull it down by undercutting De Beer's prices, though it is always tempting for Angolan peasants and Russian managers to sell round it. (Dowden, 1995)

The relationship between the CSO and the Diamond Russia Sakha Company, according to many analysts and industry specialists, was crucial in continuing a profitable cartel and possibly crucial to the very existence of the diamond market.

> If it [De Beers] refuses to renew the agreement, it will be faced with a large producer capable of launching a sustained attack on its prices. If it renews the contract, it may have to accept a level of indiscipline that might also threaten price levels. It would also send the wrong message to other cartel members such as Zaire, Australia, Namibia and Angola. (Lloyd, 1994, 10 September)

Some analysts were not as pessimistic and counted on the fact that Russia and Sakha would not be able to maintain production or would run out of reserves. (Gooding, Harding, Lloyd, 1995) There were also indications of growing market demands for diamonds, particularly from Asia. (Pruwer, 1995) One Canadian mining analyst (Yorktown Securities) predicted a 40 percent increase in diamond sales because of an increase demand in South Korea, Thailand and Taiwan in mid-1995. (Fuhrman, 1995)

De Beers, therefore, concluded that the world market would grow to absorb Russian sales without really weakening the cartel or forcing the cartel to buy up diamonds and increase stock. (Fuhrman, 1995) The 1995 first half profits for De Beers ($402 million—16 percent higher than the first half of 1994) suggested that De Beers was preparing to launch a price war. (*The Economist*, 1995, 19 August) Yorktown Securities, mining consultants from Toronto, Canada believe that:

> ... Russian rough stones may be grossly exaggerated and that any disruptive effect is likely to be temporary. He [Miller of Yorktown Securities] forecasts rising rough diamond prices and strong demand for polished stones because of "the impact of an improving global economic outlook, declining Russian diamond output and the finite and steady decreasing size of Russian diamond stockpile. (Pruwer, 1995)

In the short term, some consultants considered that De Beers could focus on the best and most expensive diamonds and not worry about holding together the entire market. (Gooding, Harding, Lloyd, 1995) Some consultants considered that the "drop" in diamond prices in 1995 actually helped De Beers demonstrate to Russia that the De Beers cartel is the mechanism that holds prices high. (Donovan, 1995; Atkinson, 1995)

6.2.5. A NEW AGREEMENT

In mid-February 1996, after several months of unpredictable negotiations, De Beers and Russia signed a new memorandum of understanding and a price war was averted. The new agreement was considered a compromise between Russia and De Beers and it appears that Russia recognized the need to work with De Beers:

> De Beers was willing to take the chance that a price war might break out, rather than have its London based Central Selling Organization (CSO) sign another worthless contract with Russia.
>
> "The contract with the Russians has given De Beers a great deal of aggravation for at least two years," said one industry observer. "But the Russians have gone to the edge of the abyss, looked over the edge and did not like what they saw. The prospect of immediately losing the $100m (£65m) of income a month from the CSO concentrated Russian minds." (*The Financial Times*, 1996, 27 February)

The view within Russia suggests that there was little compromise between the various groupings. Bychkov, the head of the Committee of Precious Metals and Precious Stones, was fired by Yeltsin because of a $150 million corruption scandal prior to the negotiations process with De Beers. (*The Financial Times*, 1996, 27 February) The Diamond Russia Sakha Company became the sole exporter of Russian diamonds.

Russia and De Beers temporarily extended the existing contract past the 31 December 1995 deadline, when it was clear that the negotiations were going to be protracted. From December 1995 until February, several breakthroughs on the Russian side helped move the process forward. The Ministry of Finance was given the lead on negotiations with De Beers and the Diamond Russia Sakha Company was recognized as the sole exporter of diamonds by the Russian government. In short, the Russian side wanted to continue the existing revenue flow through the De Beers CSO, and at the same time provide a sufficient supply of diamonds for its own cutting industry. (Ogilvie Thompson, 1995, p. 4) De Beers wanted Russia to stop selling all diamonds outside the cartel system and ensure that De Beers received a quality mix of diamonds from the Russians. De Beers feared that all the

high quality diamonds would be kept by the Russian cutters while the "rubbish" flogged off to De Beers. Finally, De Beers and Russia concluded a memorandum of understanding at the end of February 1996, as a precursor to a full contract. The memorandum sets out basic points for the relationship between De Beers and Russia.

- Diamond Russia Sakha Company must sell a minimum of $550 million a year of rough diamonds to De Beers. (Khalip, 1996c, 04 March)
- Diamond Russia Sakha Company cannot sell more than 26 percent of total CSO sales per year. This is estimated at about $1,350 million in sales for the Diamond Russia Sakha Company in 1996, about $31 million less than the company's sales in 1995 ($1.384 million). (Khalip, 1996c, 04 March)
- Diamond Russia Sakha Company can conduct sales independent of De Beers' CSO for a total of 5 percent for the first $550 million in sales ($27.5 million) and 20 percent of sales over $550 million, but less than $1.35 billion (up to $160 million). (Khalip, 1996c, 04 March) Vyacheslav Shtyrov, president of Diamond Russia Sakha Company, noted that this scheme effectively raised the allowance of independent sales to $170 million [actually up to $187.5 million] up from $60 million [actually $67 million]. (Khalip, 1996a, 04 March)
- Under the new agreement Russia can no longer send out diamonds to be cut abroad and then bring them back to Russia to be sold as "Russian cut diamonds." (BBC, 1996a, 08 March)

The general memorandum is supposed to be turned into a three year contract between De Beers and the Diamond Russia Sakha Company, but this is being delayed for several reasons.

First, there are some critical issues pertaining to setting a price schedule and agreeing to definitions for classifying diamonds as gem or industrial diamonds that are yet to be worked out. (Associated Press, 1996, 24 June) Second, the Russian cabinet reshuffle in the wake of the Yeltsin election has delayed an official meeting between the Russian government and De Beers until August 1996. (Browning, 1996, 26 July) This delay has caused a scramble among the Russia interests to try to take an upper hand in controlling the diamond industry. Surprisingly, the memorandum received support from Gurevich, after the removal of Bychkov from the Committee of Precious Metal and Precious Stones:

> "De Beers and Russia have signed a great deal. I take my hat off, I am satisfied," said Leonid Gurevich, in charge of diamonds at Russia's State Precious Metals and Stones Committee. "I was a great opponent of the old agreement with De Beers. But now I can say I am deeply satisfied," he added. "... De Beers and Russia, which had been on the brink of halting the talks early on Friday without signing a deal, both recognized the need for stability on the world diamond market and had sacrificed a lot to preserve it. 'We could have halted the talks in the morning. But De Beers has made several

> compromises since then, recognizing its responsibility ... Russia bought the right to develop its diamond cutting industry, paying for it with exclusive rights to buy Russian exports and scrapping the whole process of cutting Russian stones abroad ... This is not little ... Now, every diamond that crosses the border is bought by De Beers—we had to accept it," Gurevich said. (Khalip, 1996, 23 February)

Under Evgeny Bychkov's leadership, however, the Association of Russian Diamond Producers is extremely critical of the agreement between Russia and De Beers. First, the cutting enterprises feel that the agreement is likely to decrease the diamonds sold by Russia to its own cutters by as much as 50 percent (BBC, 1996a, 08 March). Second, the cutting enterprises feel that they will now directly depend on the De Beers pricing structure (BBC, 1996a, 08 March). Finally, they do not want to see the Diamond Russia Sakha Company as the exclusive exporter of diamonds. The Diamond Russia Sakha Company, has become more and more associated with the Sakha government, since Vyacheslav Shtyrov became its president without resigning from the vice presidency of the Republic of Sakha. (Schietz, 1995, p. 58)

It is Bychkov in his new role as the representative of Russian diamond cutters who has become the most vocal opponent of De Beers. Bychkov again accused De Beers of undermining Russia and said "De Beers has an ideology which they adhere to very steadfastly—that those who mine diamonds should not polish and cut them. We want equal terms with De Beers." (Browning, 1996, 26 July) Bychkov claims that "the Russian polishing sector should be given priority and the rest [of the diamonds] should go to De Beers." (Browning, 1996, 26 July) Bychkov also claimed that Russia would not flood the market with cut diamonds, even while he is pushing for Russia to double the sale of cut diamonds to $1 billion. (Browning, 1996, 26 July) Ironically, Bychkov, is the same man who oversaw Russia sales of platinum when Russian platinum sales flooded the world platinum market twice within the last four years.

Meanwhile, Sakha takes advantage of the complexity and secrecy surrounding the system of profit sharing and of its political position within the Russian Federation. Agreement between Diamond Russia Sakha Company, the sole exporter, and Roskomdragmet, the government regulatory agency, is going to be difficult to secure. Both groups want to control the industry and determine the export regime. (Behrmann and Banjerjee, 1995) Both want to be the sole signer of an agreement with De Beers and it is unclear who has final authority. (Behrmann and Banjerjee, 1995) The President of Diamond Russia Sakha Company is quite open about their difficulties:

> The conflict has to do with overall strategy for forming an internal market. Our positions and approaches are fundamentally different. The Committee essentially wants to return to the way things were from the 1930s to the 1950s, when all precious stones and metals were turned over to the state. That is its main position. We think that whatever commodity producers make is their own property. To accept the position would be to go back to

square one, and in that case we would be forced to close the company. (Schietz, 1995, p. 58)

In the meantime, the Diamond Russia Sakha Company now controls Russia's diamond policy. (BBC, 1996b, 08 March) The company's basic strategy is to look at producing a consistent $1.35 billion of diamonds a year and, "controlling prices and preventing them from falling." (Khalip, 1996c, 04 March) Shtyrov says that Diamond Russia Sakha Company is becoming a "transitional" company. (Khalip, 1996a, 04 March) To Shtyrov this means a "scheme of operation ... similar to that of De Beers" and a company presence in Antwerp and Tel Aviv (the company already has an office in London). (Khalip, 1996a, 04 March) In addition, the Diamond Russia Sakha Company is investing money in diamond mining in Angola, Namibia, and Brazil, in addition to gold mining operations in Irkutsk and Kransoyarsk (Russia) and Mongolia. (Khalip, 1996a, 04 March; BBC, 1996, 23 February) The Diamond Russia Sakha Company is extremely vulnerable politically for its latest position on pricing diamonds for the cutting industry. Shtyrov has publicly stated that raising prices to world levels on diamonds sold within Russia for cutters, would not harm the cutting industry. If it did the losses could be compensated by government tax breaks.[15] (Khalip, 1996b, 04 March) Shtyrov also added that there were no plans to privatize the Diamond Russia Sakha Company, because they do not want to be "bought up" by outsiders or foreigners. (Khalip, 1996a, 04 March)

Opposition to the Diamond Sakha Russia Company has not disappeared. In mid 1996, Bychkov and the Association of Russian Diamond Producers are trying to derail the contract between Diamond Russia Sakha Company and De Beers by pushing as a priority for the Russian cutting enterprises, to be based outside Sakha, primarily in western Russia. Bychkov proposes to keep the best diamonds for the Russian cutters and give the leftovers to De Beers. (Browning, 1996, 26 July)

Although publicly muting his criticism of De Beers, Gurevich has launched an attack on the Diamond Russia Sakha Company. Gurevich is proposing to maintain a state monopoly over diamond sales, and warning, as usual, that "[I]f the state monopoly is not preserved the industry will fall apart soon, cutting firms will disappear and Russia's biggest diamond producer Almazy Rossii-Sakha [Diamond Russia Sakha Company] will become only a client of De Beers ..." (Khalip, 1996, 24 May) Gurevich continues to push the plan for creating a state monopoly known as Rossalmaz [The Russian Diamond], that will control exports and sell diamonds to the world through the Federal Diamond Center, and take export rights away from Diamond Russia Sakha Company. (Helmer, 1996, 26 February) According to Gurevich, the Russian diamond industry needs several years of state monopoly, after which the monopoly can be abolished. (Khalip, 1996, 24 May)

The Association of Russian Diamond Producers and the Committee for Precious Metals and Precious Stones is supported by the Russian Parliament, which passed legislation in July 1996 to liberalize gold transactions and give a strong boost to Russian diamond cutters. Russian radio reported that:

> Officials from the State Committee for Precious Metals and the Association of Russian Diamond Producers have agreed with lawmakers that the national strategic objective should be to limit the export of uncut diamonds, increase to the maximum the capacity of the domestic gem-cutting industry and sell cut diamonds directly to international consumers. (BBC, 1996, 14 June)

The final draft of the law, approved by most legislators, (Khalip, 1996, 24 May) would explicitly put the government in charge of diamond exports, rather than Diamond Russia Sakha Company, although it rejected a stronger amendment that created a monopoly in the sale of precious metals and stones. (Browning, 1996, 12 July; Khalip, 1996, 24 May) The legislation was vetoed by President Yeltsin. (Browning, 1996, 12 July) Existing legislation, gives the government a monopoly to sell all precious metals and stones through the State Committee for Precious Metals and Precious Stones. (Khalip, 1996, 24 May) The new legislation was an obvious attempt to neutralize Yeltsin's move to weaken the Committee for Precious Metals and Precious Stones and give the Ministry of Finance the lead on diamond export policy (Browning, 1996, 26 July) and give the Diamond Russia Sakha Company exclusive exporting rights over all diamonds and rights to negotiate with De Beers. (Browning, 1996, 12 July) Yeltsin vetoed the legislation on monopolizing precious metals and stones (Browning, 1996, 12 July), ironically, on the grounds that it "would have placed domestic and foreign investors in Russia's precious metals sector on unequal terms and awarded excessive export rights to Western companies [and that] [t]he law contradicts the national and security interests of Russia ..." (Browning, 1996, 12 July) After Yeltsin's veto, legislators then looked at the possibility of amending the law on production sharing of petroleum to apply to precious metals as well. (Browning, 1996, 12 July)

6.2.6. Future of diamond production in Sakha

Overall, the Diamond Russia-Sakha Company is seeking financing needed for new construction, repair and technology. At the same time, Diamond Russia-Sakha needs to plan for future flow of production and revenue stream. Priorities directly related to production, in the words of S. Zelberg, Diamond Russia Sakha's vice-president are:

> The chief industry construction priorities are the construction of the [Y]ubilienyy Plant Complex, the underground mine International, and drying out the Mirnyy pipe. (Borisov, 1994, p. 2)

This logical agenda is based on the current need for maintaining and expanding construction. At least the company is pursuing a discrete list of priorities. Unfortunately, construction related to diamond production is only part of the company's perceived construction needs. The company has inherited the old Soviet system and is responsible for maintaining all its own infrastructure. Again, in the words of S. Zelberg:

> In terms of social construction, we are talking about 60,000 square meters of housing, a polyclinic in Mirnyy, a hospital in Udachnyy, an admin-

> istration building for the underground International mine, and a new chicken coop at the Novyy state farm. (Borisov, 1994, p. 2)

The mixture of the old ways and new ways place the responsibilities of developing the diamond pipe and the chicken coop in the hands of the same person. Another vice-president of Diamond Russia Sakha told a western journalist that he was looking for $500 million for completing the third stage of the Vilyui hydro-electric power plant, developing local oil and gas deposits for petroleum products and $2 billion for developing two new mines. (Brasier, 1994) Mr. Piskunov claims that $500 million was already invested in the Jubilenyy Mine and that an additional $10 million was needed to bring the mine on-line in 1995. (Brasier, 1994) The mine is not yet operational and Western analysts interpret Mr. Piskunov's words to mean that the "implied start-up would be at least three years behind the original schedule." (Lloyd, 1994, Sept. 29)

According to Zelberg, the GOK's (production complexes) are focusing on increasing the quality and amount of diamonds they mine through the use of better technology. "For example," says Zelberg, "[w]e are very insistent on carrying out work to introduce non-explosive technology. It seems that such technology carries a great future." (Borisov, 1994, p. 2) New technology is a common part of the rhetoric of industry managers, but it seems unlikely that a company that cannot secure basic financing it needs to continue basic operations will be able to finance this technology.

To maintain the capacity of production the Diamond Russia-Sakha Company will also have to maintain its efforts in exploration. The professional specialties were over-staffed in the Soviet period, with poor efficiency in locating structures. (Borisov, 1994, p. 2) In the 1990s these professionals did not earn the same financial support as professionals in comparable jobs. Consequently, a dramatic drop in exploration and identification of new deposits has occurred in the last five years. This in turn will influence future production and investment priorities.

Bringing on line newly discovered deposits also demands financing, and is absolutely necessary in order to maintain long-term production and revenue flow. This commitment to long term strategy influences the confidence which investors (particularly foreign investors), have in Sakha's diamond mining. In addition, according to *The Financial Times*, Vladimir Piskunov, one of the company's vice-presidents states that $2 billion in investment are needed for new diamond projects in Sakha. (Lloyd, 1994, 29 September)

The correspondent for *Forbes* magazine's simple analysis pinpoints the problem:

> No western mining company or bank is likely to risk this amount of capital until the Russians reach a new agreement with De Beers. (Fuhrman, 1995)

This is particularly true when the current volatile state of the world market for rough diamonds is taken into consideration. The pressure to use diamond revenues for development of new mines is growing, especially since there are no prospective foreign investors. At the same time, there are those who believe that De Beers is waiting until

Russia and Sakha delay investment for so long that they will be desperate for assistance and at that time "De Beers will offer to assist the Russians in developing the [new] Jubilee pipe, in return for real loyalty to the CSO cartel." (Fuhrman, 1995)

6.2.7. Conclusions about Sakha's Diamond Industry

The diamond market is the perfect market for Russia's traditional sense of conspiracy and control.[16] During the Soviet-period there was no greater ideological antithesis to the Soviet Union, than De Beers—the South African capitalist monopoly which specialized in a product that primarily was purchased as a luxury good. The secret business arrangement between the USSR and De Beers worked extremely well. The Politbureau of the Communist Party, which commanded and controlled the Soviet economy, struck a bargain with De Beers to sell its diamonds to provide the hard-currency the Soviet Union needed. With the exception of dumping a large amount of diamonds in 1984 to gain a badly needed windfall to pay for the war in Afghanistan, the Soviet Union was an excellent partner for De Beers, and fulfilled its contractual obligations to the letter. (*The Economist*, 1994) The more "democratic" and market oriented Russia is a less reliable partner, with various powerful stake holders within Russia loudly voicing their suspicion of De Beers.

De Beers is extremely invested in the system it created. The reason the world rough diamond market is so lucrative is due to the existence of the diamond cartel. Diamonds are highly priced because of the demand De Beers generates through its highly influential advertising campaign-that "a diamond [and its value] is forever," (Ogilvie Thompson 1994, p. 12) and because of the tight control and concentration of the diamond supply. The cartel's success is clearly linked with the De Beer's Central Selling Organization, its hard work, ingenuity and active, sometimes ruthless, control of the diamond market.

If Russia and Sakha honor their new agreement it may signal that they realize the value of the cartel. The short-term financial rewards in cheating the cartel were considerable for Russia and Sakha. Russia and Sakha definitely took their relationship with the Central Selling Organization to the brink of collapsing the cartel and engaging in a price war. Russia and Sakha were maximizing profit, and for a while it seemed that this was being done without thought to what would happen to the overall market.

To better understand the debate between De Beers and Diamond Russia Sakha Company the positions can be simplified and cross-tabulated with possible pay-offs to both parties. This is a simple application of Nash equilibrium analysis, one classical example of which is known as the "prisoner's dilemma." (Kreps, 1993, pp. 95–101) In this case, De Beers can accede to Russia's demands and make it a full voting member of the cartel, or it can maintain full control of the cartel and merely strike a contract relationship. The latter case is the current situation and leaves great incentives for the Russians to cheat the cartel. In this case, the Russians have two choices, they can cooperate fully with the cartel, or sell completely outside of the cartel. In reality, each party is positioned between the two

extremes. This kind of example is best presented in the form of a simple matrix (see Table 6.2.).

		De Beers' Strategy			
		Concede control		*Maintain control*	
Russia/ Sakha Strategy	*Cooperate with cartel*	De Beers	$4 billion	De Beers	$5 billion
		Russia/Sakha	$2.4 billion	Russia/Sakha	$1.4 billion
	Cheat cartel	De Beers	$3 billion	De Beers	<$1 billion
		Russia/Sakha	$3 billion	Russia/Sakha	<$1 billion

Table 6.2. De Beers and Russia Sakha Diamond Company matrix of choices.

I adopted the pay-offs, in this case, to reflect earnings in billions of dollars. The sums assume that the market is worth about $6.4 billion rough diamonds sold. The exception is if Russia cheats the cartel and De Beers decides to sell without considering Russia's cheating, the cartel gets wrecked and the entire diamond market collapses (the case where both De Beers and Russia get<$1 billion). In the case of "rational behavior," such as the prisoners dilemma, both sides pick the case where they lose less, rather than gain more (Cooperate/Concede).

In actuality, it is likely that the players would find a position between the choices in Table 6.2., which are ideal cases. That is, Russia really chooses what degree it "cheats," and De Beers chooses the least degree of control it can relinquish and still maintain the market. The matrix also does not take into account changes from the side of demand (more precisely it does not reflect changes of the demand curve).

In actuality, growing Asian demand, for example, helps maintain diamond prices if Russia cheats the cartel. The real choices are much more complicated than the matrix suggests.

The market, as demonstrated by De Beers, is easy to control on the supply side, if the limited players go along with the CSO strategy. The market is also easy to control because it is small (not more than $5.2 billion). The matrix analysis shows that the strategy to cooperate is superior to a strategy of mutual destruction.

The rough diamonds market supposedly does not affect the retail market, since the rough diamond price is an eighth of the retail value. (Gooding, Harding and Lloyd, 1995) This view was born out in the late 1970s and early 1980s, when rough diamond prices crashed, but jewelry prices were not greatly affected.

Price shifts in the retail market may be small due to large shifts in the wholesale market, but this is only a supply-side explanation. There may be a watershed price below which, if the diamond market collapses, may trigger a fall in prices in the retail market. The highly controlled supply and demand engineered by De Beers helps create an image of diamonds that leads the customer to believe that diamonds are a unique commodity that never lose value. If confidence in the rough diamond market is broken, with Russia's 26

percent of the cartel's market being sold for rogue prices, this may lead to the belief that cut diamonds are also losing their value and may lead to a "run on the market" and/or a lowering of demand in the retail market. The cutting and retail market is considerably more competitive than the rough diamond market. It is a question then to what degree change in the rough diamond market will disrupt the existing equilibrium of all the various diamond markets. The issue of collapsed diamond markets has been postponed, since Russia has reached agreement with De Beers and there is presently a strong and growing Asian demand for diamonds.

The deterioration in relations, however, between Russia and De Beers leading up to the February 1996 agreement almost led to a price war. Both sides demonstrated bravado in their willingness to take on the other in a price war.

Could a price war between Russia and De Beers destroy the market? If, in the short term, the supply sold by Russia outside the cartel continues to increase then a) De Beers buys the supply up or limits its own sales to maintain price, b) De Beers partially buys up supply and limits its own sales (e.g., on the high priced rough diamonds in 1995) to partially maintain price, or c) De Beers cuts prices and goes head to head in a price war with Russia.

In the case of "a," nothing happens to the price and quantity because De Beers adjusts the quantity at its own expense. In the case of "b," the quantity of diamonds increases, and the price decreases or the quantity of diamonds inreases greatly and price dereases greatly. It is not clear what demand would do in this case, although there is a possibility that this is the point the entire market crashes. In all cases, profits would be lower for all suppliers compared to the prices with the cartel and it then becomes a question of which supplier can survive the new lower profit margins.

Regardless of what happens to the supply in the rough diamond market, [the unpredictability of the future of diamond prices is that] the demand for diamonds as a commodity, relies mostly on a perceived notion of value, not on usefulness. Gem diamonds have little use other than decoration and this makes the gem diamond market "the ultimate luxury product" market. (Gooding, Harding and Lloyd, 1995 August)

> Diamonds are bought out of reasons of vanity, not necessity, so cooperating to get the highest possible price, rather than fighting over market share, makes sense. (*The Economist*, 1994)

This issue has been averted, at least temporarily, but applying Nash equilibrian analysis between De Beers and Russia demonstrates the fundamental structural problems within the diamond cartel and points out future potential hotspots in the market. For the time being, no great change has occurred in the diamond market since De Beers and Russia both considered the consequences of a head to head price war and chose to avert it.

There is no indication that Sakha or Russia has a plan or strategy to market or produce diamond resources that will maximize benefits, since they are so busy fighting over the revenues. Ordinarily this would not be a problem, because a region is usually a "price taker" and must take the price that the world market gives them. Russia, through Sakha,

produces at least 26 percent of the world market of diamonds and this is a sufficient amount to control the world supply affect the world supply curve of rough diamonds and influence world price. This is also a sufficient amount to destroy the existing cartel.

Understanding the diamond market within Russia has been left to former Soviet bureaucrats, or people trained primarily as diamond cutters or geologists. The greatest confusion for Russians appears to be understanding what a monopoly or cartel does to set price. Russians also confuse short term variations along the supply curve (i.e., change in price) and movement of the supply curve (i.e., change in overall supply). Another general misunderstanding by Russian bureaucrats and industry managers is that prices are determined within the context of supply and demand, rather than dictated by a notion of innate worth imbued to a resource by labor or seventy years of Soviet investment.

Although I have no way of demonstrating this point empirically, most Russian bureaucrats and industry managers I have met believe that the market price should include "more" than the equilibrium between supply and demand. This leads to the misconception that Russia is being "cheated" by the west when it sells its resources "too cheaply." At the other extreme Russians sometimes seem to be surprised that a resource that represents wealth, like diamonds or gold, can be produced unprofitably. These are first lessons in economics in a western setting, but important Russians in government and business with influence over the Russian diamond market have never learned these concepts.

A monopoly in the Soviet Union was always mandated by law and really did control price and supply to the exclusion of any other producer. This is still true of some industries within Russia, including the diamond industry. In a world view, the Central Selling Organization (CSO) creates the diamond cartel by controlling the supply of rough diamonds through its marketing pipeline and thereby sets a monopolist price. Although the CSO told the Russians it was getting on average, a ten percent mark up on Russian diamonds, the Russians claimed that the control diamonds they sold outside the CSO returned a 35 percent mark up. De Beers countered that by "high-grading" the diamonds Russia sold outside the cartel it would naturally get higher returns.

Russia lacks information and understanding of the world diamond market, while its own domestic production and storage is based on secrecy and rumor. Secrecy about the diamond industry is not unique to Russia, there is a general secrecy within the entire world market for rough diamonds.[17] As Peter Miller, a diamond markets consultant in Canada notes that "... t]he diamond world lies hidden beneath a shroud of myth, disinformation and outright secrecy." (Miller, 1995, p. 1) The four key issues that are vital for analyzing the diamond market are either concealed or extremely complicated to determine. These issues are:

1. the production of newly mined diamonds by the various producers per year (in weight, expressed in carats[18]);

2. the value of diamond production per year (expressed in dollars);

3. the stockpile of diamonds held by the various producers, and by the De Beers Central Selling Organization, (expressed in carats and dollars); and,

4. the value per unit of the commodity (price per carat).

Determining a price per carat for rough diamonds is the most difficult factor in the complexity of issues involved in the diamond market, relative to other commodities markets. Unlike gold and copper, or even pork bellies, which all have easily determined standards, rough diamonds are an extremely heterogeneous commodity. De Beers, for example, has 5,000 recognized gradations for sorting rough diamonds. Evaluating a rough diamond demands a level of knowledge and training that most people do not possess, and may take years to acquire. The rough diamond buyer, in placing a value on a rough diamond, must imagine what the diamond will look like when it has been cut and polished. After the diamond has been cut and polished, judging value on the retail market, involves weight (measured in carats), the type and quality of the cut (round, oval, pear shape, marquise, square, and many variations on the six basic cuts), clarity (blemishes inside or outside of the stone) and color (usually ranging from colorless (most valuable) to yellowish (least valuable) for ordinary diamonds, and unusual colors like, purple-red, pink or green (all relatively valuable) for "fancy" diamonds).[19] In other words, the diamond market has all the trappings of a mineral commodity, with a valuation structure similar to the market for art. (Goetzmann, 1995, pp. 25–34)

These decisions on value are made four or five times, between the producer and the jeweler. The problem of valuation is compounded by the fact that the suppliers know that on the demand side a large portion of the final retail buyers are generally ill informed about the product they are purchasing and make a purchase that is highly charged with emotion (i.e., a man cannot afford to seem cheap or foolish, when picking out a diamond ring for his fiancee).

The heterogeneity of diamonds is by far the main reason why the diamond market's structure and operation is difficult to understand relative to most other commodity markets. (Van Vactor, 1996, personal communication) Furthermore, this complexity probably explains why there are relatively large transaction costs in moving diamonds across several levels of the selling channel and explains the large mark-up between the rough diamond, cut diamond, and retail market. (Van Vactor, 1996, personal communication)

Finally, the complexity involved in evaluating such a heterogeneous commodity may even explain the very existence of the diamond market. If diamonds were a simple commodity the supply would be impossible to control. This complexity also explains the long term survival of De Beers marketing cartel, despite its often predicted demise.

Being an active agent in controlling a cartel requires a sophisticated understanding of commodity markets, specifically the complex diamond market. If Russia and Sakha relied on the cartel to deal with the problem of price and simply provided a given supply, it would free them to concentrate on diamond production. The Russian and Sakha decision makers

must weigh the long term benefit of maintaining the cartel's monopoly price. If Russia and Sakha reject the cartel, they choose the one path that requires the greatest level of expertise. Being a follower in the cartel is like being a price taker, once the initial decision to follow this strategy is made, it requires little time or expertise. The market the cartel controls takes care of the downstream management.

A Sakha legend explains the cause of Sakha's riches as coming from a bag of gold, diamonds and other wealth that a flying god dropped after freezing his arms in the -60 degree Sakha winter. The legend explains the source of Sakha's wealth, but does not suggest how to manage this wealth. For a lesson in managing wealth the Russians and the Sakha would do well to heed the English fairy tale about the goose that lays the golden eggs (in this case the goose lays diamond eggs). The Russian and Sakha diamond controllers may very well share fate with the men who greedily cut open the goose.

6.3. Potential Natural Gas and Oil Exports for the Republic of Sakha

6.3.1. General Conditions

We have seen that diamond exports are immensely important for the existing economy of the Republic of Sakha. The future of Sakha's economic development will rely on the continuation of existing diamond mining as well as the potential for the export of other resources. For Sakha. oil and gas resources are the most likely candidates for future export. This section will examine the possibilities and constraints for Sakha's hydrocarbon resources.

Currently, the Sakha government and the Sakha oil and gas industry are attempting to establish an export market for natural gas to Korea, Japan and China. The proposal calls for the development of gas reserves in central and southwest Sakha and construction of a large-diameter (150 cm) pipeline from Central Sakha to Korea and Japan, or through China to Japan. This is a multi-billion dollar project.

There is a smaller proposal to extract helium for export, a by-product of natural gas development, from the Taas-Yuriakh gas field in western Sakha. (Sakha Oil and Gas, 1994) This is probably a hundred million dollar project. There is a growing worldwide demand for helium gas, used primarily for cooling (cryogenics—27 per cent), and welding (22 percent). (Campbell, 1994) Liquid helium from the Republic of Sakha may be of interest to consumers in Japan (especially for superconductivity) and to the Chinese rocketry industry.

In order to capture the helium that it produces, Sakha must first purchase a plant that extracts helium from natural gas. A used helium extraction plant was offered by a Leningrad scientific institute for $20 million dollars. An American developer proposed a plan to deliver the helium by air (in Antonov 76 transport planes), but the Sakha Oil and Gas Company is pursuing a concept to ship helium by dirigible.

In addition, the Republic of Sakha is planning to move crude oil to the refineries of the nearby Russian region of Irkutsk. This oil project is being advocated by the Siberia Far

East Oil Company in an attempt to provide raw material for the petroleum refinery in Angarsk (Krasnoyarsk). This would be an export market for Sakha's oil, but would not provide an income in foreign currency. Sakha's domestic plans include providing a supply of petroleum products for the local market as import substitution to replace products brought in at great cost. Sakha would also like to expand the existing gas distribution and power generation for local utilities and local industry.

Recognition of the potential of the Russian Far East petroleum resources for the Asian markets is at least seventy years old. (Fischer, 1926, pp. 174–207) Louis Fischer, journalist and author, noted in his book, *Oil Imperialism*, that, "Japan needs fuel for her growing industries and her large navy. She will now obtain it from Sakhalien[20] [in the Russian Far East]." (Fischer, 1926, p. 189) and, "China is a great market where industries are developing, railroads multiplying and in which millions of kerosene lamps are used. If the Russians were producing petroleum in Sakhalien they could make a far more effective bid for the market of 400,000,000 inhabitants than they can at present." (Fischer, 1926, p. 207) In the mid 1920s, the politics of Northeast Asian oil were complicated. There were plans for a Chinese-Japanese-Russian "bloc" that would participate in developing the petroleum resources of the Russian Far East; a territorial dispute over North Sakhalin Island between the Russians and the Japanese, that interfered with an agreement for oil development; and an American company[21] whose concession contract for North Sakhlin oil was crushed because of an eventual agreement between Russia and Japan. (Fischer, 1926, pp. 178, 205–206)

Today, analysts are looking at economic and political alignments that are mirror images of energy politics in post World War I Asia.

> The goals of Russia and Chinese oil and gas policies in Northeast Asia in the 1990s have common characteristics: establishing a politically friendly environment for the promotion of their frontier oil and gas development; and preventing any delay in economic development by energy, especially oil and gas, shortages. Both are giving top priority to economic factors. However, Russia's oil and gas policy seems to be greatly conditioned by the achievement of political goals, especially the improvement of its uneasy relations with Japan. (Paik, 1995, p. 170)

Rather than solely concentrating on the oil resources of Sakhalin Province, the current issues revolve around tapping into natural gas resources of East Siberia (Irkutsk and Krasnoyarsk) and the Republic of Sakha (Yakutia). The present considerations involve a pipeline or several pipelines that could transport natural gas from the interior of Russian Asia to the markets of Japan, Korea and China. The Asian area is showing immense growth in energy demand, and even greater potential for incremental growth with the possibility of a new and significant demand in China.

> In the last 20 years, Far Eastern and Asian countries, with the exception of Japan, have seen energy demand rise 6.6% per year; in South Asia,

> the rate has been 6.5% and in China, 3.3%. Comparable OECD growth was just 1.4%. And yet the region still has a long way to go to catch up with the OECD nations in terms of energy consumption, since per capita consumption for the three Asian blocks was just 0.7 million tons of oil equivalent per year for East Asia and Asian, 0.2 MTOE/Y [million tons oil equivalent per year] for South Asia, and 0.2 MTOE/Y for China. The OECD figure is 4.8 MTOE/Y. (Roberts, 1996)

Today's potential for Asia oil or gas export projects for Russia certainly echoes the political complexities of the 1920s. In addition to the Russia-Japan-China formula, is a renewed interest in and participation by the US, its private sector and the multinational oil and gas companies; the commercial participation of South Korea companies and South Korean demand for natural gas; and a plan for a natural gas pipeline route through North Korea. Internally, Russia in the 1990s has as many commercial and regional players as in the 1920s.

Even if economic profitability were guaranteed, the political implications are certainly complex. Asia is a a crossroads for energy choices.

> Regional cooperation will be vital in view of the cost of the project (US$60bn) for the Trans-Asian Pipeline Proposal. Japan is taking the leading role in this project because it has the technology and capital to supply and wants to assume greater leadership in Asia. Restricting it still is the territorial dispute over ownership of the Kurile Islands, since Russia is the central actor in all three of the North Asian pipeline proposals. In the absence of a peace treaty, the Japanese government is unable to accord the pipeline proposal the status of a national project. However, the emergence of China and Korea as significant new markets for Russian gas has changed the bilateral nature of Russia's relationship with the north east region. It has opened up the possibility of making gas supplies part of a pan-regional project, in which Japan will be one of several players, albeit still the most important from a financing point of view. (Stewart, 1995, p. 33)

The question of fulfilling energy demand for Asia is currently couched in terms of energy mix and geographic orientation. Energy diversity for Asia involves an energy mix menu of coal, oil, gas, LNG (liquified natural gas), nuclear, and hydroelectric. Energy mix is influenced greatly by national energy policy plans, a given country's existing energy mix and the obtainable investment preferences, resource and technology availability. At present, the choice of energy mix dictates energy demand and certainly gives some supply areas advantages over others. For example, if China chooses to increase its use of coal as its prime energy source, Sakha would have a great advantage over the Middle East as an energy supplier. Conventional wisdom assumes an increase in demand for oil and gas in Japan, Korea, China and Taiwan and the issue of geographic orientation is a choice between bringing on additional supplies from Russia and the former Soviet Union or the Middle East. Subtleties in the "exact mixture" of petroleum supplies (natural gas, LNG and oil) and the

method of transport of the given energy product would certainly give some areas in the former Soviet Union an advantage over others. Sakha has never had comparative advantage in the USSR, favored western over eastern oil and gas development.

The large-scale gas projects that involve Russia are highly speculative under existing market conditions, One of the factors that may influence existing market conditions is a change in the policies for Asian countries that concern energy mix. Two new supply considerations, one by Japan and one by China may be part of the impetus that makes the former Soviet Union an attractive source of energy supplies. (Tussing, 1996) In Japan, the government focus on energy mix is to increase the percentage share of nuclear energy significantly with the construction of 60 nuclear power plants by the year 2010. (Stewart, 1995, p. 42) Currently, Japan plans:

> ... a drop in oil's share of primary energy supply from 58.2% in 1992 to 52.9% in 2000 and 47.7% in 2010, which indicates a 3.8% decline in the volume of oil consumed. Over the same period, the share won by natural gas will rise from 10.6% in 1992 to 12.8% in 2010, whereas nuclear power's share is projected to rise from 10% in 1992 to 12.3% in 2000 and 16.9% in 2010, by when it will have surpassed coal's share of primary energy supply. (*Petroleum Economist*, 1996)

Moreover, after the Moju nuclear reactor accident of December 8, 1995 (*Energy Economist*, 1996), nuclear power is held in much greater suspicion by the Japanese public. The Japanese government will certainly have to contend with a negative public view of nuclear power. In August 1996, one Japanese town carried out a referendum where the population rejected the construction of a nuclear power plant in their town. (ARAL, 1996, August 7) In China, energy mix is dominated by coal generated power, with an over 75 percent share of primary energy demand. (Stewart, 1996, p. 19) In China, it is doubtful that double digit growth in GDP can be sustained with coal for 76 percent of its fuel requirements. China may find that its rail capacity for carrying coal is inadequate and that its more affluent urban population is dissatisfied with growing air pollution problems due to increased coal burning. (Tussing, 1996, personal communication) Natural gas is currently only two percent of China's total energy consumption, and it is logical that it will increase. Being the first large supplier to China's market is a lucrative prospect, and the geographic orientation to provide direct overland transmission of natural gas gives Russia a comparative advantage.

Another issue that has the attention of some specialists on Asian energy is the question of "energy security." (Roberts, 1996) Energy security is currently viewed by some energy analysts as a high priority factor in the choice of energy mix and geographic orientation, (Roberts, 1996) despite the fact that energy markets are showing greater and greater internationalization and stability of supply. Dr. Hoesung Lee, the head of the Korean Energy Economics Institute believes that, "[t]alk of energy security seems out of date, but when we meet to exchange views on energy issues in the Asian region, energy security is a major

item: in fact, it's one of the highest priorities of governments in the Far East." (Roberts, 1996) Energy security for Northeast Asian countries represents a policy of diversifying energy sources and reducing the dependence on oil as a sole energy source. An alternative view considers the main factor in choosing a geographic area as selecting an area that can offer the lowest, consistent price per BTU [British Termal Unit]. Ironically, during the last 20 years North America (US and Canada), generally considered the least risk countries for western world in terms of energy security, have interrupted their supplies mostly for political reasons, more than the "unstable" countries of the Middle East. (Tussing, 1996, personal communication)

Issues related to the geographic orientation of oil supplies are much more pertinent in the short term than issues of piped natural gas and LNG. Over 50 percent of Japan's energy requirements are fulfilled by oil. (*Petroleum Economist*, 1996) Currently, 80 percent of oil consumption in Japan and Taiwan comes from the Middle East. (*Petroleum Economist*, 1996) Asian demand will grow if China becomes a large importer of oil, which is likely, and this will further influence Asian oil markets and prices. (*Petroleum Economist*, 1996)

In this case, the former Soviet Union can provide an alternative source of oil. Presently, Sakhalin Island has the best conditions to fulfill that role. In the long term a policy of diversifying energy (sources and kinds), makes natural gas from Sakhalin, Sakha, East Siberia, and even Central Asia, attractive. Some analysts certainly believe that Asia is likely to turn to the former Soviet Union for energy. (Paik, 1995; Stewart, 1995) Keun-Wook Paik, from the Royal Institute for International Affairs (Chatham House), thinks:

> Russian Asia and China, with huge oil and gas reserves, certainly need capital, technology and equipment for their exploration and development, while Taiwan, Japan and South Korea, with capital, technology and equipment, need to lessen their heavy dependence on Middle East oil and diversify their energy supplies. In other words, space for multilateral energy cooperation exists in North East Asia. (Paik, 1995, p. 18)

The ING Barings consulting group supports the need for Asia to turn to areas of the former Soviet Union for energy diversification and argues that "[t]he region [Asia] is ... becoming ever more vulnerable to Middle East politics and supply disruptions," and that Russia and Central Asia are "... a promising alternative source of supply." (Stewart, 1995, p. 4)

Hoesung Lee disagrees, although he is one of Keun-Wook Paik's chief research sponsors, and thinks there is a strengthening in the relationship between Korea and Japan and the Middle East. (Roberts, 1996) Lee argues that since the countries, such as Qatar, Oman and UAE, are within the US sphere of influence and the US is willing to use military force in the Middle East, this provides better "energy security," than supplies from Russia and China, where the US will hesitate to intervene. (Roberts, 1996)

Transport of gas from the Russian Far East including Sakha to the Asian market involves two crucial issues: the political resolution of a natural gas pipeline route (or several pipeline routes) from source to market, and the economic viability of such a multi-

billion dollar project. The current prospect for Sakha energy resources (oil and gas) on the world market depends on a certain set of conditions regarding Asian demand for energy and on a political climate which is presently unresolved and, for the most part, unstable. The current estimates of costs of a natural gas pipeline begin at $10 billion and "[t]he figures involved remain stupendous, making it likely that development of one or two projects will necessitate deferral of other schemes unless a coordinated approach is adopted." (Roberts, 1996) Most of the players realize that adequate hydrocarbon resources exist to technically justify a megaproject, but a host of factors must be considered. In the words of Evgeny Khartukov, a Russian oil and gas expert:

> ... undeveloped hydrocarbon resources of the Russian Far East (RFE) are large enough to support several large scale projects, with an aggregate exportable surplus of as much 30 billion c[ubic] m[eters] [a] year of gas ... At the same time, the relatively high investment risks and questionable profitability of these megadollar schemes, which require sizable discoveries to pay off, are likely to delay the envisaged project which will hardly yield by the year 2000 more than 10 b[illion] c[ubic] m[eters] of Russia gas for export. (Khartukov, 1994, p. 69)

From the point of view of the Republic of Sakha the greatest potential boom for its economy is the construction of a Sakha-Japan or Korea natural gas pipeline. The project appeals particularly to people who remain sympathetic to the old Soviet style concept that one big solution and large-scale infrastructure will save the economy. The idea of a Sakha-Japan natural gas pipeline was proposed in the 1970s by the USSR Planning Department's (Gosplan) chairman, based on a Japanese oil development plan for Sakhalin (1968). (Paik, 1995, p. 227) The history of the various incarnations of a Sakha-Japan pipeline project during the 1970s and 1980s is excellently summarized in Keun-Wook Paik's analysis entitled, *Gas and Oil in Northeast Asia*. (Paik, 1995) The current plan initiated in 1990 which the Sakha-South Korea-Japan project, nicknamed "Vostok" (meaning east in Russian), is conservatively estimated to cost $10 billion and includes a 6,000 kilometer pipeline that would cross North Korean territory. (Keller, 1994, p. 39) In early 1996, all proposals were in the planning stage and although the Sakha government was eagerly pursuing a contract, no deals were imminent. The Sakha government has been in negotiation with a Korean-Japanese consortium several years, and the discussions continue. Sakha has about 1.3 trillion cubic meters of proved, probable and indicated reserves. The Sakha to Korea pipeline needs at least two to three trillion cubic meters of proved and probable reserves to be commenced. (Sakha Oil and Gas Company, 1995, personal communication) The Sakha Oil and Gas Company estimate a total gas resource in Sakha from 9.2 to 12 trillion cubic meters of gas. To bring these resources into an official category of proved and probable more drilling and development is necessary. Sakha needs cash to carry out exploration to prove sufficient reserves, while, at the same time, the foreign companies are unwilling to invest any money until the reserves are demonstrated. The Sakha industry and government face a dilemma: no large-scale foreign

investment until Sakha can demonstrate three trillion cubic meters of gas reserves and proving the reserves is impossible without a large amount of foreign investment to finance the work. Evgenyy Khartukov explains the gulf between high cost investment and "underdevelopment" of the gas industry from the point of view of infrastructure:

> Remoteness of the producing areas from the consuming centers and other reasons prevent the emergence of a common gas transportation system in the [Russian Far East] RFE.
>
> On the other hand, the underdeveloped transport system restrains gas production (especially in Yakutia), as it is limited by a lack of local market for gaseous hydrocarbons. (Khartukov, May 1995, p. 28)

The Sakha Oil and Gas Company controls relatively large capital resources in the form of equipment (lorries, drill rigs), pipelines storage facilities and inherited sizable assets from the Soviet Union. If the company were to bring half of its estimated gas resources (five trillion cubic meters) to market it might gross $288 billion (at lower than current prices of $1.6 a million BTU equivalent). Similarly, its recoverable oil resources (at $10 a barrel) might gross on the order of $19 billion. On the other hand, the company has virtually no working capital. In 1994, the Sakha Oil and Gas Company was unable to pay the hotel costs of a visiting delegation because they ran out of cash. The industry is desperate for any cash flow and that dictates their decision making. Instead of maximizing profit and revenue from the resource, the Sakha Oil and Gas Company may be eager for any deal that generates a large and immediate cash flow, even if it is not profitable in the long run.

Construction of a large gas pipeline to Korea and Japan was proposed in the 1990s primarily by a consortium of Korean companies. In this proposal, loans would be arranged for the Sakha government, and after the project is completed the Sakha government would repay the loans from the revenue on the product. It is not improbable that there could be a pipeline from Sakha to Korea and that the loan payments associated with the cost of the pipeline would be equal to the revenue earned on selling the gas. This would be the case if the project were marginally profitable. The way the Sakha government and the Sakha Oil and Gas Company are pursuing pipeline deals, it is as if the only issue is cash flow, up front. The long run profitability of the project does not appear to be the main goal for either the Sakha government or the Sakha Oil and Gas Company. In other words, a plausible scenario may include one where the Sakha gas would be given away for free, for the honor of Sakha taking part in the pipeline project construction, while Korean and other foreign contracting companies would earn a large part of the money spent on pipeline construction.

Currently, a new development might change this scenario. The Korean project concept is being modified by the Japanese, who have brought in the Chinese as potential partners, both as an end user of natural gas and for China to be a possible route for any potential pipelines. Russia recognizes that China may be a serious player in these potential gas projects. President Yeltsin's 1996 visit to Beijing, included President Nikolaev of the Republic of Sakha in the delegation, specifically to discuss the issue of natural gas supplies.

(Tyler, 1996, p. 1) Furthermore, the "Second Conference on Northeast Asian Natural Gas Pipelines," involving the major players currently interested in potential projects in Russia, was held in Beijing in September 1996. Several plans for various pipelines in northeast Asia were presented.

One indication of the feasibility of the Sakha-Korea gas pipeline project is the current status of the Trans-Alaska Gas Pipeline, which was shelved in the 1980s. If market conditions point toward profitability for a large scale gas pipeline in Asia, it is likely that LNG gas export projects from Alaska's North Slope would be revived. Alaska already provides Japan with LNG and has done so continuously over the last 25 years. One proposed Alaska project would include a pipeline (up to 1,000 kilometers), and gas liquification facilities operating within one politically stable country. The analogous Alaska gas project would involve a harsh Arctic environment and sea ice conditions, high cost American labor, liquification of the gas and transport by sea. A Sakha gas pipeline project may also face competition from the regions of Irkutsk, Sakhalin and central Asia. Such additional projects may give the Sakha project the necessary critical mass needed to initiate such a project.

Sakha might also pursue a development policy to displace Sakhalin Island oil and gas that is currently feeding the Khabarovsk oil refinery (the only major refinery and gas facility in the Russian Far East), so that all the Sakhalin oil and gas could be sold to Japan. (Tussing, 1995, personal communication) Sakhalin is currently required by Russian law to provide oil feeder stock for the Komsomolsk-on-the-Amur refinery (3.5 million metric tons a year/70,000 barrels a day) and gas for the Khabarovsk Province (slightly more than 1 billion meters per year). This may be a way to piggy-back on Sakhalin's success as the Russian Far East's largest oil and gas producer.

In planning investment projects, the Sakha Oil and Gas Company claims it is ready to take on a large-scale investment project. (Sakha Oil and Gas, 1993) The company is not powerful enough to make the decision to proceed and has very little influence on the ultimate decision-making process. Sakha Oil and Gas Company has no working capital and cannot move any major development forward. The big pipeline proposals are moving forward only because of Korean and Japanese money.

6.3.3. Conclusions about the Export of Natural Gas

Alexander Kim, Sakha's chief lawyer for international transactions, summed up the expectations of the region's government and industry in Sakha:

> If this project [a pipeline from Yakutsk to Seoul] becomes a reality then the Republic, for at least the next three or four decades, will be provided for with a source of hard currency revenues. This financial resource will help develop Yakutia, turning it into one of the centers of world activity in the Northeast of Asia. (Ivanov, 1995)

In the meantime, the potential of the oil and natural gas industry remains unrealized for the Republic of Sakha. If natural gas exports become a reality, Sakha may be able to adapt

its export experience from the diamond industry. Presently, the two markets are very different for the Republic. Within the diamond market, Sakha controls over a quarter of the market share. In the natural gas market, Sakha is merely another natural gas supplier among many. This means that the West does not have to worry about Russia and Sakha threatening the stability of the natural gas market in the way Russia and Sakha threatened to destroy the market for rough diamonds.

Although faced with many difficulties, Sakha seems to have mastered a system for capturing much of the economic rents from diamond mining. Sakha will likely be able to assure itself a reasonable share of economic rents should there be export of natural gas. In structuring an investment strategy, Sakha might consider the proposed the gas pipeline projects based on their profitability, rather than their ability to generate short term cash flow.

Regardless of the specific changes in word markets for diamonds or oil and gas, it seems certain that exports will drive Sakha's economy, development and political relationships in the foreseeable future.

CHAPTER 7

DISCOURSES ON DEVELOPMENT

7.1. INTRODUCTION

This chapter discusses various perspectives applied to explain development in the Republic of Sakha. The most prevalent view put forward about the development of Sakha, previous to the collapse of the Soviet Union, was that Sakha was part of a greater policy to "master" the North's natural resources to serve the Soviet state. (Slavin, 1961a, p. 40) This explanation was extremely popular within the USSR because of its adaptability to a Marxist historicist philosophy. Eventually, the interpretation of mastery over the North was refined to be better incorporated within the context of socialist and scientific political views of Soviet planning. This more refined view of mastery has been referred to in Russia, since the 1970s, as "rational development." (Agranat, 1977, p. 16) I argue that the Soviet concept of rational development is closely related to the western concept of "sustainable development." (World Commission on Environment and Development, 1987, p. x) While western discussion about sustainable development has been adapted to discussing Russian development in the North, no link between rational development and sustainable development was made. This chapter also explores in detail how the discussion about development in the Russian and American North relates closely to indigenous economic activities. This chapter also looks at current thoughts about regional development within Russia, both by Russian and western specialists.

Until today, except for the original development concept put forth by Stalin, the influence of export-led growth from the exploitation of a primary resource was largely ignored by Russian and western analysts. As seen in Chapter 3, primary export-led economic growth is a concept that adequately accounts for development patterns for Sakha's past. The tools available in analyzing primary export economies are also extremely helpful in exploring current and future issues of development in the Republic of Sakha.

In particular, this chapter adopts a case study approach to development. The State of Alaska, USA, is identified as a particularly pertinent model to base a discussion about the current development issues that face Sakha. With the help of a case study approach I have identified priority policy issues in Alaska relevant to countries and regions involved in primary export economies like Sakha. Also by focusing on the State of Alaska as a western analog for Sakha, it is possible to look at development options in the area of managing economic rents and incorporating the traditional rural sector with the entire primary export economy.

7.2. MASTERY OF THE NORTH

Economic development in the Soviet North[1] was orchestrated under the proclaimed Soviet policy of "mastery of the North" (*osvoyeniye*[2] *severa*). (Slavin, 1961a, p. 40) The policy of mastery of the North was the struggle of the Soviet people against the harsh natural environment to win the North's resources that would industrialize Soviet society. (Slavin,

1961a, p. 40; Armstrong, 1965, p. 154; Pryde, 1991, pp. 2–6; Vitebsky, 1990, p. 25; Tichotsky, 1993, p. 2) In a 1937 speech, Academician Otto Schmidt, the mastermind of the Northern Shipping Route, expressed what the North meant to the Soviet Union:

> We look at the Far North as simply a geographical part of the Soviet Union. Since the [North] exists, then it is necessary that the people living there should enjoy those benefits which the members of the Soviet Union enjoy in those parts outside [the North]. Since the [North] exists and uses some of the benefits [of the Soviet Union] then it is necessary that [the North] must give [the Soviet Union] what it can give. (Schmidt, 1937, p. 4)

The idea of mastering land and its resources began with Russia's drive in the 16th century to utilize the territory from the Ural Mountains to Alaska as a source for a steady supply of fur pelts of marine and terrestrial mammals. (Armstrong, 1965, p. 57–60) Although the government did not have a clear agenda under the Tsarist government in the late nineteenth and early twentieth century, exploiting the resources was a priority activity in the North. (Armstrong, 1965, p. 102) The Tsarist government supported commercial ventures and granted concessions. For example, in the 1870s, the Tsar gave Siderov, a Siberian merchant, a government monopoly to shipping, fishing and hunting rights in the Kara Sea. (Horensma, 1991, p. 9) Russia also mobilized its considerable colonial forces to explore the North. A Russian who chronicled the major expeditions of the day wrote, "[i]t is enough to note, that the Arctic Ocean washes the whole of the northern part of the sovereign shore of Asiatic Russia and represents the single open ocean connecting our far eastern possessions with European Russia." (Starakadomskiy, 1915, p. 1) The Tsarist government supported development of the Northeast Passage, including the exploration by the *Vaigach* and *Taimyr*, ice-strengthened ships, (Starakadomskiy, 1915, p. 1) the *Yermak*, Russia's first ice-breaker (Makaroff, 1900, pp. 31–46), and several overland expeditions, such as Sedov's attempt to reach the North Pole. (Taracouzio, 1938, pp. 59–60) The exploration efforts of the Russian Empire laid the groundwork for infrastructure, like the Northeast Shipping Route, that the Soviet government expanded to access the resources of the North.

After the Russian Revolution, Yakutia (Sakha), along with the Russian Far East, was not under control of the Soviet government until the very end of the Russian Civil War (1922). In fact, the entire Far East was under White (Socialist Revolutionary (SR)), control or see-sawed back and forth between different groups of Reds and Whites. Gold mining flourished. Five years after the Soviet government took over the Russian Far East, communism was being built by thousands of gold prospectors. During the early and mid-1920s, several Soviet expeditions were sent to evaluate, among other interests, the economic potential of the Russian North. (Armstrong, 1965)

Stalinist industrialization policy of the late 1920s and early 1930s began with an appeal to the gold miner's interest to make money, as we saw in Chapter 3, and Stalin himself fancied a plan to recreate California of the 19th century in the Russian Far East. (Serebrovskiy, 1936, pp. 16–17) The policy of mastery of the North became a mandate for

manifest destiny under Stalin, and perhaps became an integral force in creating a strictly colonial and an inherently unsocialistic part of the Soviet economy. Otto Schmidt, as Stalin's chief advisor on the North, in replying to his own question "What does the Soviet Union need from the Far North?" said:

> [f]irst of all, the mineral resources that the Soviet Union is in short supply of or does not have could become extremely necessary ... The second sector of the economy in the Far North is Forestry ... [and] the Far North also gives the economy those specifically [northern] products, ... the products of hunting, marine-mammal hunting, and, to some extent, fishing and reindeer herding. (Schmidt, 1937, pp. 4–5)

Schmidt clearly recognized the importance of the northern economies providing resources to other parts of the country. In the 1930s, a shift from free labor to forced labor also brought with it greater state controlled infrastructure and administration. Soviet, large-scale northern economic development was built by hundreds of thousands of forced laborers (Jasny, 1951, pp. 405–406) and local indigenous people were collectivized to support the many large resource development projects and industries. (Slavin, 1961a, pp. 106–109) Although the methods changed, the Stalinist push for mastery over the North continued to import resources to the Center, where they were used as raw material for the country's industrialization program, or exported for foreign currency.

Collectivization was abandoned by the 1940s and the prison labor camps were significantly reduced in the 1950s by Khrushchev. Other methods were employed to continue the flow of resources from areas like Sakha to the Center. In the western part of the Russian North, the advent of the Cold War expanded Soviet militarization and parts of the North became an integral part of the USSR's defense complex. Novaya Zemlya, an archipelago in the Arctic Ocean off the western part of Russia, was one of the Soviet Union's chief nuclear testing sites. In the Russian Northeast, a network of border guard stations was posted as a bulwark against American imperialism, but the Russians were equally concerned with the Chinese border along the southern part of the Russian Far East. The Republic of Sakha was not as militarized as most areas of Russia. For Sakha, the Soviet military-industrial complex was more industrial and less military. Industrialization of the Russian North continued in the 1950s, 1960s, 1970s and 1980s implemented through a system of mega-project developments run by enclave settlements that focused on the exploitation of resources or the management of transportation and infrastructure to support resource exploitation.

> The Regions of the North have huge surpluses of a variety of, almost untouched, natural resources. Many of these resources represent such a high percentage of the available reserves within the USSR that without using them it will be impossible to maintain an endless growth of the National Economy which is demanded by the basic law of socialism. *The industrial development of all natural resources of the North are the living necessity for a country of socialism.* [*sic*] (Slavin, 1961a, p. 40)

To exploit this huge surplus of natural resources required settlement, transport and electrification. (Slavin, 1961a, p. 40) This, in turn, guaranteed development:

> ... infrastructure-settlements, transport routes, electric power stations is the basis that ensures future development of the productive forces in the newly developed regions and yields long-term benefits to the national economy of the regions concerned and by this token to the country as a whole. (Agranat, 1977)

It is curious to see that Slavin claimed "endless growth" as a basic law of socialism. (Slavin, 1961a, p. 90) The concept of endless growth is traditionally associated as a basic premise of capitalism and criticized as a weak link in capitalist development. (Haq, 1973, p. 367) This much was true, keeping the Soviet industrial combine working demanded resources, and many subsidies to the parts of the combine that did not work required hard currency.

Northern resource mega-development was "scientifically" controlled from Moscow. Gosplan, the state planning agency, had an entire department dedicated to managing Soviet northern development. Within Gosplan, the oversight for five-year plans was managed and budgets and data were collected from all over the Russian North. Every year the northern region received capital, labor and massive supply shipments, coordinated by Gosplan from Moscow.

Under the planned economy of the Soviet Union great effort was made to eliminate the need for regional specialization. (Pavlenko, 1975, pp. 23–24) Regions needed planned economic growth to create the most generic economic units possible that could be incorporated into the Soviet state. The regions outside of the western Soviet Union were basically treated as homogenous colonies to the Center. This was especially true of the territories that were classified as part of the Soviet (Russian) North. To the bureaucracy, the Soviet North was treated as one ultimate colony.

The mega-project development tapped into all the richest resources of the Russian North and drove the export economy. Examples of some of the mega-resources of the Soviet North include the oil and gas fields of the Tiumen-Pechora region in the Komi Autonomous Region; the mining areas of Norilsk, Yakutia, Magadan and Chukotka; and timber from the Siberian taiga. Large scale transport linked the North to Moscow, and western Russia. Transport mega-infrastructure included the Northern Shipping Route, the Trans-Siberian rail road and air travel. Soviet electrification of the North involved the construction of numerous world class (referring to their size, not necessarily the quality of their engineering) hydroelectric projects, huge centralized coal fired heating and electrical plants and even Arctic nuclear power stations. Everything focused around resource development. For a long period, the Soviets planned to redirect the major rivers flowing into the Arctic Ocean engineering them to flow south to irrigate the cotton crops of Central Asia. (Pearce and Turner, 1990, pp. 182–185) A great many "projects of the century," like the river redirection projects, were announced, but never came to pass. During the 1960s and the Brezhnev

period, there was a continued policy of intensive development of resources of the Soviet North with little regard for environmental and social priorities. (Arikaynen, 1991, p. 17; Pryde, 1991, pp. 2–6) Many of the northern resources became the principal exports of the Soviet Union, rather than being held back for domestic consumption under the principle of autarky. (Gregory and Stuart, 1986, pp. 305–311)

With time, in addition to providing the Soviet Union with minerals, timber, water and defense, the North was also expected to be self-sufficient. (Tichotsky, 1993, p. 37) This was what Soviet researchers and planners wrote about in books and in the press, writing about the main activities of gold mining, diamond mining, oil production and defense, which was strictly controlled by the communist censors. The West, therefore, received a heavy dose of the ridiculous extremes of Northern self-sufficiency. Soviet literature of the 1960s, 1970s and 1980s boasts about the "successes" of raising cattle, pigs, potatoes, vegetables, and producing milk and eggs across the North. An additional issue to consider is that because the Soviets never developed efficient refrigerated transport, raising food in the Far North may have been the only alternative.

The goal of "rationalizing" the local subsistence agricultural sector and finding useful employment for rural indigenous people meant that the Soviet government not only recognized the traditional sectors of the economy, but continually came up with plans to improve them. (Vorobyev, 1973, pp. 18–22) These efforts driven by ideology were linked with a phenomenal misappropriation of resources and became the flagship of Soviet Northern Development. In retrospect, this might be considered relatively low cost, flashy compensation, compared to the value of the resources exported from the North. The practice of "mastering" the North laid the groundwork for preaching a philosophy which seemed consistent with building communism, yet was the practice of colonialism on a grand scale. The resources were rich and plentiful enough to support the growing burden of costs, in many cases beyond the collapse of the Soviet Union.

The 1970s are characterized as the beginning of a declared concern for the environment in contrast to government mandated unhampered resource exploitation. (Pryde, 1991, p. 249) The Soviet Union enacted strict environmental legislation, but it was clear that state ownership by itself was no guarantee that state-production enterprises would operate within the law or to a greater degree than private-production enterprises. (Goldman and Tsuru, 1985, p. 726) This environmental concern was directly linked with the famous Lake Baikal controversy of the mid-1960s, which united scientists, writers and government officials against the Ministry of Timber, Paper and Woodworking who planned to construct two pulp plants on the shores of Lake Baikal. (Ziegler, 1987, pp. 553–55; Goldman and Tsuru, 1985, pp. 729–730) Except for such semi-official controversies, the Soviet development policy continued unimpeded, and treated the North as a colony and storehouse of resources for the country. During the 1970s, the oil and gas fields of Western Siberia were developed, making the Soviet Union the largest world producer of oil and gas, and there was an accleration of Soviet diamond mining, coal mining, gold mining, timber production,

electrification and building of infrastructure in the North. (Agranat, 1977, pp. 7–8; British Petroleum, 1991, pp. 4–5, 20)

Gorbachev's 1987 speech in Murmansk, in the spirit of *glasnost*, called for a re-assessment of the priorities for the Arctic. (Armstrong, 1988, p. 68) This affected all regions in the North that had Arctic territories. The borders of the Republic of Sakha encompasses about a quarter of Russia's Arctic. Science and social issues, including the affairs of indigenous populations, and environment became the new agenda to replace the resource and military priorities of the past (Armstrong, 1988, pp. 64–65; Vartanov, 1992, p. 43) The entire Soviet economy was about to collapse and with it the domestic demand for northern resources. For a short period between 1988 and 1991, the influence of the scientific and environmental movement that began in the 1960s, led to lively debate in the media about balancing environmental concern with economic development. (Vitebsky, 1990) This debate was short lived. By the end of 1992, the state of the economy and people's welfare was the primary concern and the environment became, again, a secondary issue, with notable exceptions like the Komi oil spill and issues relating to the meltdown at Chernobyl.

The general collapse of the Soviet Union created a two-tiered economy in the North. Sakha with its diamond mines and the oil and gas rich regions of West Siberia that produced commodities at prices competitive to the world market were cushioned from complete collapse. Regions that were supplying an exclusively domestic demand or regions marginally competitive, like Chukotka and Magadan (Sakha's neighbors), lost their basic livelihood, virtually overnight. In addition, the central government could not continue to support the systems that brought stability to northern life and northern development as the Russian economy contracted. Economic investment priorities, infrastructure networks and jobs collapsed or were strongly weakened as most subsidies and support associated with the mastery of the North were cut or diminished.

Within a few years of the fall of the Soviet Union, all regions in Russia faced a great change in the market for their various products. Once stable colonies, Russia's northern region and periphery regions devolved to fledgling units with little economic assurance and great political uncertainty. The Center, busy with its own problems, lost the resources and the resolve to direct their colonies as they did in the past. Regions began to chart their own course and market forces revealed flows of revenues and resources, formerly obscured by Soviet propaganda. One of the main changes was the way in which resources flow in and out of a region, as a Republic of Sakha statistical bulletin notes:

> The result of real fulfillment of [Sakha] government sovereignty in the area of economics is that fact that in 1992, for the first time, the balance between in-shipment and out-shipment became positive. The positive figures [greater out-shipment] in 1992 represented 23.2 billion rubles. In 1993 this tendency was strengthened. (Goskomstat-Sakha, 1994a, p. 3)

Post-Soviet Russia is a place where regional differences and specialization are now recognized as factors in regional economic growth. This runs counter to years of propa-

ganda that presented the entire Soviet Union moving in unison toward socialism. For the Republic of Sakha, policy objectives and strategy are also important as the region moves away from its colonial status. In turn, Sakha has become an interesting object of study as an economic region.

7.3. Rational and Sustainable Development

Russian literature on development, at least from the end of the 1980s until 1994, after the Russian economy underwent four years of double digit economic contraction, focused around concepts of sustainability. Specifically, the Russian literature debated "rational" and "logical" development, presumably in contrast to "irrational" and "illogical" development. This debate is directly related to the concept, *ratsionalnoye prirodopolzovaniye*, which became a popular phrase in Soviet and Russian literature[3] and pertains to development economics and environmentalism. Literally translated this phrase means the rational (*ratsionalnoye*) use (*-polzovaniye*) of nature, or natural resources (*priroda*). The Soviet scientists Reymers and Yablokov, in their *Dictionary of Terms and Concepts Associated with the Protection of the Living Environment*, define *ratsionalnoye prirodopolzovaniye* as the "... system of activity that is recognized to provide the most effective regime of renewal and economic exploitation of natural resources, with consideration for the future interests of developing the economy and protecting the health of the people" (Zimenko and Krupnik, 1987, p. 13). These concepts continue to be underlying principles in Russian views on development. Later in this chapter, I discuss the work of two Russian authors who are writing in English and presumably for a Western audience, about development as it relates to the Republic of Sakha and similar regions in Russia. Both Manezhev and Dimitrieva talk about development in terms of "rationality" or "logic." (Manezhev, 1995, p. 223; Dimitrieva, 1996, p. 74)

The concept of *ratsionalnoye prirodopolzovaniye* was applied to regional economic development extensively within the Soviet Union. In 1986, the Institute of Economics of Comprehensive Development of Natural Resources of the North, part of the Soviet Academy of Sciences, published in a collection of scientific papers on the "Evaluation and Rational Use of Natural Resources of the Yakut ASSR," explaining that:

> Complex and rational use of resources is the most important condition of successful development of the economy of the country, characterized by the unique modernity of a society's production and a serious factor in its being used more intensely. It includes obtaining additional production and broadening the variety that earlier was not obtainable, reducing costs of capital and exploitation, economizing on labor and material resources, achieving cleanliness and quality of production, using the resource to the maximum, reducing environmental costs with all their negative aspects, reducing the amount of land used under a factory and reducing waste and so on. (Kirillin, 1986, p. 7)

In Russia, *ratsionalynoye prirodopolzovaniye*, which was applied to the North as early as 1973 (Agranat, 1977, p. 16), is a term that has survived and was adapted to great politi-

cal and economic changes associated with the disintegration of the Soviet Union, as well as to changes in approaches to Northern development strategy and environmental protection. Whatever policy or position concerning development is pursued, it can be imbued with authority if linked with "rationality." Originally, *ratsionalynoye prirodopolzovaniye* was coined by Soviet-Marxist ideologists who considered humans as masters over nature. (Pryde, 1991, p. 245) Soviet planners believed they were masters who could exercise a managerial role to "rationally" modify the environment for the greater good of the state. (Pryde, 1991, p. 245) Greater exchange of ideas about the environment between the West and Russia and the liberalization of Soviet/Russian society have refined the concept of *ratsionalynoye prirodopolzovaniye* and it has become the Russian term to deal with the dilemma of balancing economic growth with the protection of the natural environment. (Zimenko and Goltsman, 1991, pp. 7–9)

One of the greatest hurdles for the English-speaking world in understanding the philosophy underlying Soviet and Russian economic development and environmental theory is comprehending the use and translation of terminology. Words like *ratsionalnoye prirodopolzovaniye* and associated terms in Russian economic development and environmental theory may have close, though not necessarily exact, analogs. These analogs are rarely employed in translation. Instead, stilted, literal translations, that do little to convey adequate meaning or associations, are often employed. The translation of *ratsionalnoye prirodopolzovaniye* into English is almost always "rational use of nature" or "rational use of natural resources."

Although the Western and the Soviet ideas about development arose under a different political, economic and social framework, there is a convergence in understanding and defining problems which have emerged to address universal themes in development and conservation of ecosystems. The one Western concept that bears the closest analogy to *ratsionalnoye prirodopol zovaniye* in its attempt to synthesize economic and environmental well-being is the term "sustainable development," and it is this term which I would like to offer as the most appropriate translation for the Russian term.

Since the United Nations World Commission on Environment and Development widely popularized "sustainable development" as the panacea for reconciling the dilemma between the goals of maintaining environmental integrity and economic development in their 1987 report, *Our Common Future*,[4] there has been an effort to adapt the concept of "sustainability" to various countries and regions (World Commission on Environment and Development, 1987, pp. xi, 35; Duerden, 1992, p. 219), including development in the North or Arctic, particularly the Russian North. It is in this context that issues about development including regions like the Republic of Sakha and Alaska are widely discussed, particularly development linked to the economic activity of northern indigenous[5] people. (Usher, 1987; Kassi, 1987; Griffiths and Young, 1989; Duerden, 1992; Flanders, 1992; Chance and Andreeva, 1995) One recent article that addresses some of the development issues pertinent to Sakha development, contrasts development in a Russian region and Alaska, was co-

authored by an American anthropologist and a Russian geographer who compare "sustainability, equity and natural resource development," in Northwest Siberia and Arctic Alaska. (Chance and Andreeva, 1995)

On the surface, this discussion of sustainable development usually addresses the conflicts associated with large-scale economic development versus protection of the northern environment, coupled with the role of northern indigenous people and the related environmental and social impacts these groups of people may experience from natural resource development. Debate on sustainable development generally begins with a definition of sustainability. The starting point is usually The World Commission on Environment and Development definition of sustainable development and sustainability as "... development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987, p. 43) The literature tries to clarify this concept of sustainability with definitions such as: "... the existence of the ecological conditions necessary to support human life at a specified level of well-being through future generations" (Lélé, 1991, p. 609), and the "... non-declining utility of a representative member of society for millennia into the future." (Pezzey, 1992, p. 323) While some social scientists choose an extremely narrow definition of sustainability, that "natural capital assets" (i.e. resources) should not decline through time (Pearce, Markandaya and Barbier, 1989, p. 37), most, like Lélé and Pezzey, choose to speak in terms of well-being and utility. (Lélé, 1991; Pezzey, 1992)

The definition of sustainability, therefore, relies greatly on the definition of utility, but utility itself is an elusive term. First introduced by the political philosopher Jeremy Bentham in the beginning of the 19th century, utility refers to the relative ranking an individual makes of available choices based on the choice's relative desirability. The utility-maximization hypothesis, which became a cornerstone of modern economic theory, assumes that people, given a choice, will seldom take actions that are against their best interest and will instead maximize their utility. Utility, unfortunately, as most elementary microeconomics text books point out, is difficult to measure, since there is no quantitative unit of utility. (Nicholson, 1987, pp. 77–83) What would be a single, universal quantitative expression of desirability? This is a concept that seems poorly recognized by the literature related to sustainability in the North. For example, Flanders, in his paper entitled, *What do we mean by "Sustainable Development" in Village Alaska?*, states there is "... .the need for finding a metric, a standard of measurement, with which to measure sustainability." (Flanders, 1992, p. 251) Flanders fails to recognize that sustainability, like utility, is by definition virtually unquantifiable.

If conditions are narrowed enough, and all other influences are held equal or suspended, it is possible to quantify the relative desirability of one choice over another (i.e. the relative number of bananas a person buys, compared to the relative number of oranges). In actual experience these choices depend on variables, such as culture, psychology, and personal experience, that are impossible to measure quantitatively and dangerous to gener-

alize. (Nicholson, 1987, pp. 77–83) With utility being such a critical component of the concept of sustainability, it is not surprising to find that sustainability theory takes on a similar ambiguity. It instead can become a way for ideology to be presented as "objective" science. (Vitebsky, 1996, personal communication)

In addition, concepts like sustainability and utility are not static over time. What seems sustainable or unsustainable or desirable or undesirable may change depending on changing preferences and perceptions. The definition of sustainable development may, for example, be defined in an extremely narrow form to mean economic sustainability in its strictest sense. Adopting this definition avoids all the problems of current debate. That is, it is obvious when an economic system is unsustainable—it collapses or leads to a general decline in welfare of the population. Anything else seems to be sustainable, at least until the next crisis. Much of the current academic discussion on sustainable development, especially as it is applied to northern development, seems to be the modern equivalent of the debate over Utopian Socialism. The Russian economy is so bungled that implementing reform that would allow it to operate with a modicum of efficiency would be a major achievement in sustainability. Put another way, sustainable development, at least for the short term, is generally irrelevant to the problems facing Russia's regions.

A better standard for development might be the more humble emphasis on, " ... *sustained* changes during economic development." (Lewis, 1989, p. 1543) Yet to disregard "sustainable development" that quickly is to ignore many ideas, as confused as they are, about development. These ideas, in turn, affect the thinking, policies and in some cases, specific actions related to development in places like the Republic of Sakha.

In the Russian context, we can see that Reymers and Yablskov's definition of *ratsionalnoye prirodopolzovaniye* bears close resemblance to World Commission's definition of sustainable development as "... development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987, p. 43) *Ratsionalynoye prirodopolzovaniye* and sustainable development are the key buzzwords that pepper the debates and literature about the present and future status of environmental protection and economic development in Russia and the West. (Pierce, 1992; pp. 307–313; Zimenko and Goltsman, 1991, pp. 7–9) This is changing slightly for Russia in 1995 and 1996, as debates about environmental protection and economic development policy take a back seat to issues like the Russian election, wages and pensions.

In Russia, as in the West, specific definitions for *ratsionaly noye prirodopol zovaniye* and sustainable development tend to be as numerous as the solutions they offer the universal problem of reconciling the gulf between environmental and economic goals. (Pierce, 1992, p. 310; Vasilenko, 1986, p. 65) Like sustainable development, *ratsionalnoye prirodopolzovaniye* can be used in a variety of contexts. This is especially the case in Russia, since public debate about Northern environment and Northern economic development includes resource development ministries, environmentalists, businessmen, government

officials and indigenous people, each with specific agendas that range from increasing economic activities to promoting greater conservation. (Arikaynen, 1991, pp. 21–22; Supreme Soviet of the Russian Republic, 1992, pp. 3–5; Leningrad State Urban Planning Institute, 1991, p. 140). Although these Russian and English phrases are related concepts, it is clear that they are not exact translations. This is because of the associations made with the roots of the words, which are completely unrelated. The Russian phrase is more widely used by all shades of development oriented and conservation interests within Russia, because it can equally evoke Marxist or "green" (environmentalist) overtones and the root word in the phrase, "rational," is neutral as to the actual kind of development. It is also useful in suppressing opposition, since no one wants to be in favor of "irrational" development. This is not true about sustainable development, since the word "sustainable," on a propagandistic level, tends to alienate, for example, proponents of non-renewable resource development projects. Somehow, the words "sustainable development" flow awkwardly from the lips of a mining company executive as he explains the 20-year life span of an ore deposit.

The connections and contrasts between *ratsionalnoye prirodopolzovaniye* and sustainable development remain to be made by either Western or Russian social scientists. Some Russian social scientists, familiar with the Western debate over sustainable development, have introduced a new translation for the phrase "sustainable development," *sbalansirovannoye razvitie* (balanced development), rather than use *ratsionalnoye prirodopolzovaniye* (Arikaynen, 1989, p. 175; Agranat, 1991b, p. 105), but within Russia all public debate, government documents and legislation continue to employee *ratsionalnoye prirodopolzovaniye* to address balancing economic development and environmental protection. (Supreme Soviet of the Russian Republic, 1992, pp. 3–5; Leningrad State Urban Planning Institute, 1991, p. 140)

Translation and re-translation of terminology between Russian and English also continues to be a primary hurdle in discerning the connection between *ratsionalnoye prirodopolzovaniye* and sustainable development. For example, in G.A. Agranat's article "New approaches to the North: global aspects" in the April-June 1991 issue of *Polar Geography and Geology* (Agranat, 1991a, p. 117) the use of the term "balanced development" appears in the translation of his article even though it is clear that Agranat is specifically discussing the term "sustainable development." This level of incongruity further obscures the link between *ratsionalnoye prirodopolzovaniye* and sustainable development. Western sustainable development literature is noticeably devoid of Soviet or Russian sources, with a few exceptions. (Arikaynen, 1989; Chance and Andreeva, 1995) I believe, though, that there is evidence that Russian environmental and development philosophy, including its Marxist tradition, have entered western theory relatively unacknowledged. One obvious example is that Vladimir Sokolov, one of the chief proponents of *ratsionalnoye prirodopolzovaniye* in Russia (Sokolov, 1987, pp. 5–7; Sokolov, 1991, pp. 5–6), is also one of the authors of the World Commission

on Environment and Development's report on sustainable development in the West. (World Commission on Environment and Development, 1987, p. 355)

The links between Russian and Western views on development and environmental conservation can also lead to other remarkable ironies. Vladimir Vernadsky (1863–1946), a Soviet-Marxist scientist who believed that the salvation of mankind would come through historically predictable technological and intellectual progress, is widely considered the father of Russian environmental philosophy. (Yashin and Yashin, 1989, p. 14.) Relatively unknown in the West, Vernadsky was a futurist thinker who addressed problems in the beginning of the twentieth century that are serious concerns today. Vernadsky discussed global food shortage, which he proposed to solve by synthesizing food from plant material, and was one of the first scientists to stress the importance of biodiversity. (Yashin and Yashin, 1989, p. 15) As early as the 1930s, Vernadsky utilized the word biosphere, a term that has recently came into vogue in the west among scientists and environmentalists, and pointed to man's ability to permanently alter the biosphere's basic structure.

> The face of the planet, the biosphere, is being changed greatly chemically by man consciously, and more importantly unconsciously. (Yashin and Yashin, 1989, p. 15)

Vernadsky also developed the concept of the "noosphere," the intellect-sphere (from *noos*, meaning intellect in Greek), that would create great changes to the biosphere, the living-sphere.

> According to Vernadsky the noosphere is the inescapable natural stage of development of the biosphere of the Earth, under which the natural environment of man will be rationally altered [*ratsionalnoye preobrazovana*] by the collective intelligence and work of humanity for a maximum satisfaction of its growing material and spiritual demands. (Yashin and Yashin, 1989, p. 14)

Interestingly, many of his ideas seem to be echoed by the proponents of sustainable development. For example, the description of noosphere is not dissimilar to Bruntland's definition of sustainable development as cited in the introduction of the Bruntland report. (World Commission on Environment and Development, 1987, p. 46)

The idea that people's behavior has to be fundamentally changed in order to achieve a greater collective social good often has been associated as a principle in Marxism. Mao's cultural revolution hinged on changing peoples fundamental behavior, "... to reject self-interest and become selfless." (Gurley, 1973, p. 311) In addition, "Maoists seem perfectly willing to pursue the goal of transforming man even though it is temporarily at the expense of some economic growth." (Gurley, 1973, p. 310) Sustainable development, particularly in the form that it is presented by the World Commission on Environment and Development, similarly requires a modification of the basic nature of individuals and countries.

> The changes in human attitudes that we [the commission] call for depend on a vast campaign of education, debate, and public participation. (World Commission on Environment and Development, 1987, p. 23)

Views on sustainable development applied to the North, like that of Franklyn Griffiths and Oran Young, co-chairmen of the Working Group on Arctic International Relations, also offer the " ... notion of sustainable development interpreted as requiring [sic] - fundamental changes of thought and behavior allowing humanity to create social and natural preconditions for an existence that respects and adapts to the natural environment." (Griffiths and Young, 1989, p. 1) Chance and Andreeva apply this view of sustainable development requiring fundamental change in human behavior to the Russia situation.

> ... [t]he recent demise of the Soviet Union can be traced in part to its failure to accumulate at a rapid pace, resulting in serious consumer shortages and a loss of political legitimacy. Under such circumstances, the effort to limit economic activity damaging to the Arctic comes in direct conflict with the requirements of continued growth essential to capitalist development.
>
> If this analysis is correct, the obvious solution to the problem of environmental destruction caused by past and present development practices in technically advanced Arctic-rim countries is to reduce the present "ecological demand" at both the *input* end (economic growth) and *output* end (waste). However, success in such an endeavor requires a basic transformation in the economies of these countries whereby the profit motive is diminished in favor of one more broadly attuned to the needs of the civil society and the environment in which its members reside. Given this magnitude of change at this point in time, such an effort is difficult even to envision. (Chance and Andreeva, 1995, pp. 220-221)

In the first place, "accumulation" (Change and Andreeva, 1995, p. 220) was never the principal problem for the Soviet Union. The problem was always distribution and quality, and these are the issues which the profit motive and the price system best address. (Leftwich, 1973, pp. 343-358) In the second place, the problem with the Soviet economy is widely recognized as a lack of a profit motive, and this lack of profit motive certainly did not attune Soviet citizens to the "needs of the civil society and the environment." (Chance and Andreeva, 1995, pp. 220-221) Moreover, Chance and Andreeva ground this debate on the assumption that capitalist development is essentially in conflict with sustainable growth. They fail, though, to define "non-capitalist development" and to say whether there is ever a point in time when an alternative can be implemented or whether sustainable growth is achievable.

> More negatively, there has been a tendency among those who study the political economies of North America and Russia to treat the capitalist structure of the former [and] socialist structure of the latter as distinct "models" existing independently, whereas in fact, within the twentieth century, capitalism and socialism have been formed in interaction with one

> another, making any effort at comparison considerably more complex. (Chance and Andreeva, 1995, p. 223)

I agree that the pure models of socialist and capitalist development do not reflect many of the realities of any economy. Nevertheless, the fact that the Russian North and the northern areas of North America produce divergent results in the quality of life of their citizens is precisely why there is a need to explain the differences. These differences do not annul many of the commonalties of development in the Soviet Union and other areas of the world. I argued in Chapter 3 that development in the Soviet Union was similar in many ways to other examples of primary resource export-led growth, which are typical in colonial, and probably also capitalist, development.

Chance and Andreeva also attempt to address issues defining the kind of growth that went on in northern regions of the Soviet Union. They suggest that Soviet development may be classified as, "state capitalism." (Chance and Andreeva, 1995, p. 220) The point that Chance and Andreeva miss is that markets and prices, the main feature of capitalist economies, allocate resources more efficiently than the planned command system of the Soviet Union. (Lipsey, 1992, pp. 71–76; Leftwich, 1973, pp. 343–358; Goldman and Tsuru, 1985) As Hanson (University of Birmingham) notes:

> Certainly the historical evidence is clear: state ownership of all of a nation's assets is worse for internal and allocative efficiency and for technological dynamism than arrangements under which identifiable proprietors and potential proprietors compete for ownership and control of a large proportion of the nation's capital. (Hanson, 1992, p. 355)

Called socialism, national socialism, or state capitalism, the Soviet command system left an economic, environmental and social track record vastly worse than capitalist failings. For example, the Soviet Union dumped 165,00 cubic meters of radioactive waste, and 18 submarine and ice breaker nuclear reactors in the Kara and Barents Sea. (Studds, 1993, p. 1) Illegal[6] radioactive materials released in the Arctic by the Soviet Union and the Russian Federation, not including nuclear testing, is double the quantity of all the nuclear waste disposed in the Atlantic and Pacific by all other countries combined. (Osteno, 1993, p. 3) Explaining this kind of state-sponsored activity is also part of the reason that people are trying to explain the capitalist/socialist dichotomy.

What is the alternative that Chance and Andreeva offer Russia, since neither capitalism nor the Soviet system seem to offer solutions? Chance and Andreeva are searching for a "final solution" for sustainable northern development, while rejecting basic principles related to market-based explanations for development dilemmas. (Chance and Andreeva, 1993, p. 221) They reject the role of technological change. For example:

> While technological improvements are certainly to be encouraged, they appear not to offer a final solution to the problem of how best to develop northern resources. (Chance and Andreeva, 1995, p. 221)

Chance and Andreeva also cast doubt on the market's ability for efficient distribution with arguments that border on the absurd:

> For example, one problem long associated with a market-structured economy is that commodities are largely reproduced for those who can buy them rather than for those who need them—a process that actively encourages artificial demands, produces waste in the production process, and promotes inequalities in the distribution of the benefits and burdens within society. (Chance and Andreeva, 1995, p. 221)

Chance and Andreeva's logic is easy to criticize and against their position, it could be asked: Why should producers produce commodities for people who cannot buy them? By definition, how can a market price create artificial demand? Will giving people commodities at lower than market price then create natural demand? How can giving people commodities diminish waste in production?

The greatest criticism of Soviet development was that price fixing caused a general misallocation of resources, damage to the environment and general poverty of the population. (Goldman and Tsuru, 1985, p. 737) This is supported by the argument that when Russia finally stopped setting prices in 1992, the accompanying historic fall in GDP showed the extent to which the Soviet price system pervaded resource allocation. In this light, Sakha was fortunate in that its main resource had value on the world market. In other words, that it had a highly export-driven economy.

I would argue, along with many analysts today, that Russia's regions were violated by the failure of Soviet-style socialism. This socialism was built on ideas that suggest, among other things, that markets are inefficient and inequitable ways to distribute resources and that human behavior can be engineered over the long term. The situation today suggests that the best way to influence people is by methods that address people's innate self-interest. Sustainable development as proposed for northern areas and the new Russia, appears to preach a return to some of the old principles that created today's problems.

Some of Russia's regional politicians have no difficulty adopting the rhetoric of sustainability as a substitute for the familiar Sovietisms, in order to forward an agenda that shows concern about social and environmental issues. President Nikolaev of Sakha seems keen to be among the northern leaders promoting sustainable development:

> With time I am sure that humanity will exploit from the Arctic and North like from a source of life-giving water: its well-being, spiritual strength and new values. The economic, cultural and natural potential of the planetary North is huge and we have not realized its real potential. We need to understand that this potential is targeted at the future, to fulfill the future generations and in this way be a reserve zone for all of humanity. In the name of the future, we need to save the Arctic and the North in its original beauty, wealth and cleanliness, and to save and revive people—the carriers and creators of circumpolar civilization ...

> It is necessary, using the existing height of modern knowledge of the civilized society, in light of the bitter experience of the crazed relationship [of people] to the natural environment, to create a new strategy for developing the North. At the same time, the principles of this different ideology, the ideology of environmental and economic balance, should govern. (Nikolaev, 1994, 12 September, pp. 5, 9)

Some people in Russia still believe, or want to believe, that a person can be made or taught to behave differently and this will solve all the difficult economic and development problems. In the past, rationality was something Soviet citizens were taught. Over a third of the voting Russian population wants a simple return to the old promises of the communists, judging by Zyuganov's popularity (Russian Communist Party leader), or the simple-minded assurance that Russia is a great nation and the price of vodka will be low, judging from Zhirinovsky's popularity (a nationalist leader).Other Russian people have witnessed the results of hoping for and relying on a fundamental change in human behavior, backed up with complicated and Utopian declarations, rather than accepting the empirical realities. The words of Dr. Evgenii Ivanovich Bogdanov, a mining specialist who started his adult life as a gulag convict and spent his career developing the gold industry of the Russian North-east, is an example of a new Russian pragmatism. Dr. Bogdanov was a victim of the Stalinist concentration camps, arrested along with several thousands on the pretext of being involved in the plot to assassinate Kirov, Leningrad's party-boss, in 1934. Dr. Bogdanov was rehabilitated in the late 1950s and joined the Soviet Communist Party during the Khrushchev campaign against Stalinism. He left the Communist Party in 1990, after a thirty year membership, with the following words:

> Comrades, first and foremost I am a scientist. Being a scientist I believe in certain empirical principles. Unlike physics experiments, which may take only several days to conduct, social experiments need longer to yield results. I think, though, that seventy years is long enough to ascertain that our experiment in socialism is failure. Therefore, I would like to return to you my party ticket and state that I am no longer a member of the Communist Party of the Soviet Union. (Bogdanov,[7] 1991, personal communication)

7.4. Current Russian Discourse on Development

Today, some Russian experts studying their own regions have adopted some new concepts for development to study regions like Sakha. Many of these new viewpoints are based in Soviet concepts of development, while others are newly formed during the recent economic changes in Russia. Many Russian politicians and analysts continue to confuse potential wealth with actual profits and revenues. Measuring economic wealth in terms of resources in the ground or gross income, rather than profit is one of the barriers for economic reform. For example, Sergey Manezhev, a Russian economist expresses this kind of thinking. "Yakutia alone boasts around 1,000 deposits of mineral resources, estimated to be

worth about $10 trillion at current market prices." (Manezhev, 1995, p.222) Another common assumption made by some social scientists and many people within Sakha paradoxically links the argument of Sakha's "wealth" in resources with the idea that Sakha has a low standard of living relative to other areas of Russia. For example, Vinokurova from the Republic of Sakha Institute of the Problems of Northern Minorities (Yakutsk) writing together with Balzer of Georgetown University (Washington, D.C.), about Sakha nationalism, interethnic relations and federalism, states that:

> The Sakha Republic, while among the poorest in living standards in Russia, has nonetheless come into a position of strength with the central authorities because of its vast and under-exploited wealth in rare metals (gold, silver, antimony, copper, tin, tungsten), luxury stones (diamonds, amethyst, nephrite, corelian, emerald-like chromdiopsid) and energy resources (oil, gas, coal). (Balzer and Vinokurova, 1996, p. 106)

That Sakha should be considered to be among the poorest in living standards in Russia contradicts all the information I have presented in Chapter 4. The Sakha standard of living measured by basic economic indicators, such as per capita exports and per capita GDP, are almost double the Russian average. Sakha's economy is stable and growing, and certainly impressive relative to Russia's contracting economic growth. Sakha's strength within Russia comes from a $2 billion income flow, and a high rate of profitability.

There are several reasons to explain why people assume that Sakha has a low standard of living. First, most socio-economic data is not widely available for Sakha. Because of a lack of information about changes throughout Russia and within Sakha, many citizens in Sakha may not realize that they are better off, on average, than the average Russian citizen. Without information, people instead have to base their evaluation about living standards on personal experience.

Tremendous social and economic changes within Sakha have left significant groups of Sakha's citizens worse off than before the collapse of the Soviet Union. This new situation is accepted with difficulty by some sections of the population within Sakha. People also compare what they remember of the stable life-style during the Soviet Union period, with current conditions in Sakha. Many people who may be better off economically may be facing greater uncertainty or are forced to work in new jobs and under more dynamic conditions created by market relations. Some people associate some of these kinds of changes with a decrease of living standard.

The recent economic changes also brought persistent inflation, rising prices and sticky wages (wages that do not respond to inflation). This is not necessarily a lower standard or decreased standard of living, simply a change in expectation. For example, people spend more of their income today for consumer goods than five years ago, but at the same time there is a greater choice and variety in what kind of goods are available. Some people argue that this is proof that Sakha is becoming worse off. This may instead be that the difference between what people have, and what they think they should have is

growing. In addition, during the Soviet period, the life-style of living in northern regions of Russia was always viewed as vastly inferior to living in the urbanized western areas of Russia. (Dimitriieva, 1996, pp. 82–88) Therefore, many Russians continue to view living in the Russian North, regardless of the level of quality of life indicators, as an inferior state.

In their evaluation of Sakha's standard of living, Balzer and Vinokurova seem to compare living standards relative to the same concept of economic wealth that Manezhev proposes. Although it is true that most of Sakha's wealth comes from natural resources, wealth does not consist of minerals in the ground or even gross income, but profits and rents after production and sale of resources. Sakha, therefore, can only can be considered as wealthy as the flow of income and profits from resources are delivered to market. Most of Sakha's resources mentioned by Balzer and Vinokurova remain in the ground and far from markets.

A more important question for a region like Sakha is what gain can it receive from bringing the resource to market? Furthermore, this gain should be the net gain (profit), rather than the gross gain. A strategy based on net profit runs contrary to the existing marketing approach for Russian commodities, which seems to value gross sales over profits. For example, in recent years, Russia has upset or even wrecked markets by dumping a particular commodity all at once on the market in order to raise foreign currency quickly. Recent examples are palladium, platinum and the reindeer antler market. During the Soviet period, the dumping of diamonds and gold in order to finance war in Afghanistan had disastrous effects on the respective markets.

Internally, perceptions about Sakha's success are often based on increasing volume of production, rather than profitability. In Sakha, as we saw in Chapter 5, entire industries are closing because of the general restructuring of the economy. While Sakha's earnings, especially dollar earnings, are increasing, the physical volume of production of industry is falling. With the physical volume of production falling, the structure of employment is also affected. The remnant psychology of the Soviet system views any decrease in production or employment as "bad." Even the numerical indicators were geared to demonstrate this philosophy. In Chapter 4, Figure 4.6. we saw that the volume of production was decreasing. Therefore, while the volume of resources the Republic produces falls, it is clearly not indicative of Sakha's overall "profitability."

Simply because resources are unexploited does not mean they are "under-exploited," as Vinokurova and Balzer suggest. (Balzer and Vinokurova, 1996, p. 106) I would argue that it is premature to propose that the resources in a region are under-exploited without an exhaustive analysis of supply and demand conditions and cost-benefit analysis. This leads to a related and more complicated concept within Russia whether regional economies of areas like the Republic of Sakha are under-developed or what a term could mean.

Russian specialists complain that the Russian Far East has a significantly lower density of infrastructure, that it has "lopsided development," and that it practiced "frontal development," or the "rapid exploitation of the most convenient and most valuable re-

sources." (Manezhev, 1995, pp. 207, 223) The latter approach is supposed to damage, "the natural-resource potential of the territory concerned." (Manezhev, 1995, p. 223) Manezhev's proposed new strategy for economic development for the Russian Far East and Sakha is based on two assumptions:

> First, while natural resources should form the basis for economic growth, new resource-saving and technology-intensive styles of exploitation should replace the current extensive, irrational approach. Second, regional growth should be geared to enhance economic cooperation with the Pacific Rim countries—through foreign trade, technology transfer and inward investment. The development goal is to bring about the kinds of structural adjustment of the local economy which will improve its international competitive edge. (Manezhev, 1995, p. 223)

Manezhev also presents a plan to implement this.

> In the light of world market trends, and taking into account the existing potential comparative advantages of the Russian Far East, the region will probably seek to promote investment over the next ten to fifteen years in the following areas.
>
> *Setting up processing facilities in forestry and the mining industry* ... A promising though technically complicated field of business activity in the Russia Far East is jewelry production. It is reported that Israel is making $0.6–$1 billion every year by faceting Yakutiya's diamonds ...
>
> *Development of the fishing and fish-processing complex and mariculture on a technologically advanced basis: utilization of nonwood forest resources* ...
>
> *Modernization and transformation of the ship-repairing and ship-building industry* ...
>
> *Conversion of the arms industry* ...
>
> *Setting up large- and small-scale tourist centers* ...
>
> *Upgrading of the food industry and development of agribusiness* ...
>
> *Upgrading and development of the social and industrial infrastructure* ...
> (Manezhev, 1995, pp. 225–227)

The preceding list raises several key questions. Where is the oil and gas industry on Sergey Menezhev's list, as the industry which has the Far East's greatest competitive advantage? Diamond cutting is a money sink that is hemorrhaging losses, before it can even get started. What is wrong with the Israeli's making money on Sakha's diamonds, as long as the Sakha get their share? It is certainly a superior alternative to Sakha cutting its own diamonds and losing money.

Manezhev also does not recognize that a large part of the economy of the Russian Far East is successful because it is already tied to world markets. (Manezhev, 1995, p. 209) The fact that commodities like gold and diamonds were being sold from the region to the central government at state-controlled prices, (Manezhev, 1995, p. 209) does not mean that the industries were not in part driven by market prices. The central government certainly

exported the commodities for market prices. Rather, this example only shows that the central government has a colonial strangle-hold on the region and kept the lion's share of the money between the price they give the region and the market price abroad. When the regions gained a greater share of the rents, some of the industries became unprofitable for the colonial power (central government) as marginal costs exceeded the marginal revenue. The gold industry is a good example because the industry teetered and continues to teeter on the very margin of profitability. Unless significant restructuring of the industry continues, the industry will plunge into the red.

The solution to the Russian Far East's economic problems is not to extend price control over manufacturing and limit imports, as Manezhev suggests. Growth for the regions of the Russian Far East can only come from trade and market driven pricing, the policy which Manezhev implies was the policy that led to the region's current problems.

Finally, Manezhev claims that " ... political disintegration of Russia would be a catastrophe. The outcome would be widespread ethnic conflict, dramatic impoverishment of the population, political instability and a prolonged economic crisis which would block the way to any serious reform or involvement in international economic cooperation." (Manezhev, 1995, p. 260) Some of these things might happen but is this so different from what is happening without political disintegration? It is politically unlikely that the Far East will splinter off, given present conditions, but from the point of view of economic growth this may be the best thing for the area. For the Russian Far East, piggy-backing on East Asian economic growth can only mean growth. The biggest barriers which prevent the Russian Far East from taking advantage of being on the doorstep of Pacific Rim markets are the political, legal and economic constraints of being a part of Russia. Free of Moscow's western oriented leash, integration with the Japanese, Korean, Chinese and US economies would be a formula that would virtually guarantee economic growth for the Russian Far East. This kind of thinking does not appeal to Russian Nationalists who have a great influence over the political situation in the Russian Far East.

Oksana Dmitrieva, a Russian regional economist, recently completed the only review of regional development (to 1992), noted that:

> ... the main disadvantages of Soviet studies used to be the strong ideological pressure which constrained Soviet researchers from an unbiased and critical approach to regional development. Regional studies have been and still are full of various myths, in particular the development of Siberian and ethnic peripheries. As to Western studies being independent in their thinking, they suffered the disadvantage of being deprived of access to primary statistics and of the ability to test hypotheses in an experimental way. Thus, although free from ideological pressure, Western academics had to infer their conclusions on the basis of statistics and primary studies carried out by Soviet scholars who were under this pressure. Thus, as a result of the lack of access to primary sources, some of ideological myths were unintentionally transferred into Western studies. (Dimitrieva, 1996, p. vii)

I would agree with Dimitrieva, but only up to a point. Unfortunately, Dimitrieva, falls for another Soviet/Russian myth, that, since Russia is no longer able to be the best, a common theme in Soviet propoganda, Russia can explain its economic failure by being different. For Dimitrieva Russia being an exception to universal principles of economics is a central premise of her analysis, which she describes as, "the main paradigms of economic behavior in the former USSR and in its parts, as supposedly [*sic* translation is poor] in other parts of the world, differ significantly from those in the Western world. ... Western economic models and theoretical approaches, evolve within its framework, the latter are not applicable to the Soviet case at all, or could be implemented only with a great deal of caution." (Dimitrieva, 1996, p. viii) I have heard the argument that Russia is "fundamentally different from the rest of the world," time and again from all types of people in Russia, usually to explain the difficulties of economic reform in Russia. The argument is so widespread that *The Economist* dedicated a three-page article entitled *Is Russia Different?*, about the issue. (The Economist, 1996, 15 June, pp. 21–23) In the Russian Far East and, especially in Sakha, this is usually linked with the difficulties of Russia's extreme climate. With this kind of core belief there is almost no argument about the economy that will not be refuted by, "oh, that will not work in Russia, Russia is different."

The Russian writer, Fedor Ivanovitch Tyutchev, once wrote

> Russia cannot be understood with the intellect, it can not be measured with a standard yardstick. Russia has an extraordinary status, Russia can only be believed in!
>
> Many politicians, policy-makers, business-people and ordinary citizens in Sakha and Russia, and some Western experts, believe the same of the modern Republic of Sakha. They believe that Sakha is the riddle wrapped within Churchill's "mystery inside an enigma." (Kaplan, 1992, p. 620)

They believe that Sakha is an extraordinary unique phenomenon in the history of development. This can lead to a sense of hopelessness, but the inverse danger of this thinking, especially among some of the Sakha leadership, is that it may also follow that Sakha may be destined to take a miraculous short-cut to economic prosperity.

I have found from personal experience teaching business development courses in Yakutsk, that people in Russia and Sakha have preconceived and inaccurate understanding of markets. This is largely because Russians are still isolated from experiencing the process that makes markets work. Instead, it is a case of unfulfilled expectations. Russians see the results of western market economics on imported television programs and the failure of proclaimed market reform within their own country.

It is difficult to counter the extremely powerful and pervasive view that Russia, and the Republic of Sakha, have economic systems that are too "special" to learn from ordinary examples of economic success and failure elsewhere and that the general principles of economic development and empirical evidence of other development experiences do not really apply to Sakha. I have argued in this thesis that one must review the history of a

given region, dissect the performance of the economy and industry, evaluate the results of economic reform, trace the gross movement of the income of the region and compare the results with the ideas and models that have developed in a worldwide context. To the rest of the world approaching general problems of the economy in this way may be viewed as a pedantic and pedestrian exercise. For Russia and the Republic of Sakha it is simply a necessity, since the absence of facts breeds the most unlikely conclusions from policy makers.

Although Dimitrieva makes some excellent points about the development of Siberia and the Russian Far East, her conclusions lack insight. First, Dimitrieva gives an excellent criticism of the benefits of planning for Siberian and Far East development, that:

> the success of planned efforts in developing pioneer regions [Siberia and the Russian Far East] is nothing but a myth. The increment of growth rates and the most significant displacement of economic activities was caused not by planned measures but by exceptional war circumstances. (Dimitrieva, 1996, pp. 45–46)

If planning was not the reason for pioneer regional growth, then I would question the attribution of growth to "war circumstances." (Dimitrieva, 1996, p. 46) A better explanation lies in an export led growth argument which I made in Chapter 3. For example, the West Siberian gas fields generated such a huge amount of economic rent, that even Soviet inefficiency could not drive the marginal costs higher than the marginal revenue. Dimitrieva further compounds confusion by linking efficiency with a concept of social benefit when she says, "... after the disintegration of the USSR, Siberian development, although inefficient from the standpoint of national interests, was supported by efforts to get currency revenues on the part of some elements of the political and business elite." (Dimitrieva, 1996, p. 46) How can a resource be inefficient to produce, if it is earning profit for the people who control the resource and money? Dimitrieva does not address the point that fairness and efficiency are often exclusive principles. (Okun, 1983, pp. 595–631)

Dimitrieva dismisses the Siberia-school regional economist's arguments (Aganbegyan and Granberg) that Siberian returns on capital were higher than in European Russia, based on comparison of ruble-denominated investment and return on investment figures from 1977–1988. (Dimitrieva, 1996, p. 46) The earnings for Siberian exported gas, for example, were made in hard-currency, which was then translated into rubles, using an artificial exchange rate, thereby undervaluing the revenue produced by Siberia. Hard-currency earnings are consistently undervalued, even in today's Russian statistical bulletins. Moreover, for some strategic resources, the funds are calculated off-budget and never appear in the general statistical bulletins. This is a big problem when one looks at the revenue of the Republic of Sakha. In addition to being denominated in rubles, the official gross income for the region is recorded as less than the earnings from Russian diamond sales. The regional government in the Republic of Sakha seems to take full advantage of this under-reporting, as we have seen in Chapter 6.

One can also trace the influence of what Dimitrieva classes as "myths [about Soviet development studies] ... unintentionally transferred into Western studies." (Dimitrieva, 1996, p. vii) Bradshaw, for example, says:

> The real economic and environmental costs of this northern development strategy were key factors in the stagnation of the Soviet economy. As Table 1 [Table 1 not reproduced here. It depicts oil, gas, wood products and tinned fish as key products produced in the North], shows these high-cost regions became the major producers of the Soviet Union's energy resources. As the resource-intensive economic base of the Soviet Union consumed more and more energy, increasing amounts of capital investment were required to develop energy resources and deliver them to consumers in the European core. Because the Soviet price system failed to incorporate the real cost of transportation to and from the North, and because it consistently undervalued the worth of northern energy production, the northern regions were unable to develop processing industries linked to their industrial resource base or retain the profits extracted from their regions. This bias towards resource extraction is quite evident in the structure of the industry of the North ... .Of course, given the nature of Soviet economic policy, ever increasing resource extraction was demanded regardless of its impact upon the local environment and more traditional forms of economic and social activity. (Bradshaw, 1995, p. 199)

It is certainly true that Soviet systems of pricing downplayed the real costs of transporting materials and energy from the North to the Center and this resulted in inefficiencies. I would question, though, Bradshaw's view that, "undervaluing" the worth of Russia's northern resources contributed to not developing processing facilities. (Bradshaw, 1995, p. 199) On the contrary, I should argue that restraining Soviet planners from creating processing industries in the North was a supremely rational policy for the Soviets to follow, and one which is compatible with market principles. This policy focuses on the comparative advantage of the North where the only competitive industry is development of large or rich deposits. Creating processing industries in the North is an economically uncompetitive activity, since the North has no comparative advantage in processing. Alaska, for example, exports primarily crude oil and has virtually no petrochemical industry.[8] I would even argue that the Soviets did not restrain themselves enough. Surely this is why the Norilsk metallurgical complex is well known as an example of an over-capitalized monstrosity in the Russian North, plagued by social and environmental problems. Agranat, the leading Soviet/Russian expert on the foreign [non-Soviet North] noted that,

> The evolution of territorial systems of organization of productive force ["multi-faceted development"], judging from the experience in our country [Soviet Union], provide for high economic efficiency of the use of resources and the development of the territory. This evolution occurs, as we saw, in the foreign [non-Soviet] North rather slowly. Large territorial economic and

> demographic combinations of economy and population, comparable to our industrial complexes, like Norilsk are absent [in the non-Soviet north].
>
> Manufacturing as an industrial sector that determines the economic specialization of the territory is known only [outside the Soviet Union] in the northern areas of Norway and Sweden. (Agranat, 1984, p. 85)

Downstream value-added economic activity is usually most efficient close to markets, since it is easier to transport raw materials to the value-added activity than move capital and labor close to remote resource deposits. This is the economic reality the USSR wanted to defy with the "complexes" like Norilsk. If the post-Soviet economy seems in trouble today, it is in part because most northern settlements were like Norilsk, rather than the primary resource producing economies of Tyumen, Sakha and Magadan.

It is hard to reconcile Bradshaw's statements that the Soviets were simultaneously unable to "retain the profits," "failed to incorporate the real cost" and "consistently undervalued the worth of ore production." (Bradshaw, 1995, p. 199) If you squander a profit (although in this case I think Bradshaw must also be referring to economic rent) you must have made a profit. If you made a profit your average costs must be lower than your marginal revenue however you value your production. Also if you underestimate your costs and underestimate your value of production the two forces would tend to neutralize each other, not skew the supply curve in the same direction. Since many of the key outputs (oil, gas, diamonds, gold, coal, timber) of the Russian North were export products and sold on the world market it seems that extracted resources were indeed the few outputs in the Soviet economy that had a market value.

The Russian North produces more natural gas than the combined yearly production of UK and Norway. (BP, 1995, p. 24; LSE, 1996) According to Bradshaw, 74.8 percent of the former Soviet Union oil exports were produced by the Russian North. (Bradshaw, 1995, p. 199) Between 1993 and 1994, Russian oil exports went up 4.7 million tons. Russia's oil exports equals UK yearly production. Combined energy exports from the Russian North exceed the value of all UK oil and gas production. Does this suggest unprofitability or collapse? No, if anything primary resource development in the North is a life line for the country and an important source of foreign currency.

A "bias towards resource extraction" is not implicit in building socialism or autarky, rather, it is definitely a bias of all market oriented remote regions and many export-led developing countries (with notable exceptions, like Taiwan, Korea and Japan). Finally, industry in capitalist markets is also particularly effective at ignoring impacts on the environment and indigenous people. Agranat points out the multiple difficulties that the western economic system faced dealing with indigenous rights (Agranat, 1984, pp. 111–135) and the environment (Agranat, 1984, pp. 18–24) in northern development. It is only in the last thirty years indigenous people have been regarded in the resource development process in the United States. The environment is by no means guaranteed protection in a market driven economy. Externalizing environmental and social costs certainly increases profits.

Only if a premium is set on indigenous people's rights or the environment can they be efficiently protected in market economies.

The US western advance of development inspired by manifest destiny, for example, showed how well capitalist economic growth can crush indigenous people. Oil development in Alaska took place against a background of conflict with the environmentalists and the Native people over pipeline rights-of-way and Native claims on land. These battles are probably yet to be resolved in the future in Russian development, if Russia continues to maintain a level of democracy or "openness" within their society. I was present, for example, when an American oil executive managing a foreign oil and gas project in Sakhalin Island confided that he hoped that Sakhalin would not make the "mistake" of settling land rights issues, like Alaska did, since it causes so much trouble for the industry. Again, discussing present-day Russia, Bradshaw argues that:

> The unprofitability of the resource-producing sectors [in the Russian North] is further compounded by the collapse of state capital investment. In such a situation, only the continuation of state subsidies is averting economic collapse. (Bradshaw, 1995, p. 200)

The empirical evidence contradicts Dr. Bradshaw. In Sakha, the only extremely profitable industries are the resource producing industries, like the production of diamonds and coal, and some parts of the support sector economy. The profitable industries are also subsidized. Most of the value-added activities, especially the much heralded diamond cutting centers, are not profitable and rely on reallocation of economic rent from primary resource production. This is not to say that all resource producing industries are profitable. As we have seen, tin mining, mica production and a large part of the gold mining industry is clearly unprofitable in Sakha.

In Sakha, state subsidies were exchanged for a piece of the economic rents from rough diamond production through negotiation between the Sakha and Russian governments. I have argued that re-allocating the hard-won economic rents into unprofitable industries is certainly a foolish waste of money, whether those industries are resource producing or value-added industries. Sakha's comparative advantage, as demonstrated by the available information, is based in a few revenue generating activities that are, for the most part, resource extraction, rather than labor or capital intensive.

Another example of accepting generalizations about Russian remote regions that are not borne out, is the writing of Kempton and Levine who refer to the gold and diamond mining regions as,

> The bulk of Russia's gold and diamonds was mined in regions both physically and economically remote from Moscow. From the gold fields of Komi and Magadan to the diamond mines of Sakha the problems were similar: an underdeveloped infrastructure, poor access to goods, a low standard of living and insufficient wages to compensate for the difficulties of life under such harsh conditions. From the perspective of Russia's regions,

> republics and other components, the source of the problem was clear. The profits from the raw materials they produced were sent to Moscow; Moscow never sent enough back. The solution too was clear: the component governments of the Russian Federation, particularly the republics, demanded economic sovereignty or at least a larger share of the profits from their resources. (Kempton and Levine, 1995)

On the one hand, the Soviet Union decision making about development is criticized for the fact that it "consistently sacrificed economic prosperity to maintain its political gains ..." (Kempton and Levine, 1995) The argument often goes that in Northern development the Soviet Union made "uneconomic decisions," and engaged in high cost mining for ideological reasons. This seems to be another way of saying that Russia was "over-developing" the North. At the same time, the Soviet Union is accused of "underdeveloped infrastructure," not paying the workers enough, and taking too much of the "profits" (I think the authors are confusing "profits" with the concept of economic rent) of mining. (Kempton and Levine, 1995) There is a contradition at the heart of this. How can Soviet mining in the North have costs and subsidies higher than the economic rent gained from extracting the resource and at the same time have subsidies that are lower than the fair share the region deserves? I suggest that some Western Sovietologists have been looking at these two issues separately and therefore arrived at the wrong causal links. Exploitation of Sakha's resources has produced a massive amount of economic rent for the Soviet government. Furthermore, the average costs were clearly considerably lower than the marginal benefits of mining. That is, although there were individual "uneconomic" projects like huge hydroelectric projects or diary farms north of the Arctic circle, *on average* the total development costs were lower than the marginal benefits for the producer (the Soviet government). This was achieved on the basis of a colonial relationship with the regions, which left very little of the surplus economic wealth within the region.

7.5. Are Sakha and Alaska from the same development topology

7.5.1. Development framework

As Sakha exploits its resources and becomes a member of the world market, the Alaska model of development can provide some useful insights on critical issues pertaining to the past, current and future of Sakha's development. Generalizations are made about the Republic of Sakha and Alaska as regions, even though they developed for at least sixty years under two diametric economic systems, the Soviet-style command socialism and the American-styled market capitalism. Sakha was formerly a colony within a socialist nation and Alaska was formerly a territory within a capitalist nation. This case study approach provides a menu of options to examine, including: successes, failures, identification of causes, problems and possibilities for regional development.

Theories about primary export economies often deal with historical issues of a country's economy and whether it had a colonial or non-colonial relationship within the

framework of the world economy. (Lewis, 1989, pp. 1546–1547) For Sakha, the Soviet policy of "mastery of the North" can be viewed as a policy of colonialism. After the collapse of the Soviet Union, the continuing process of defining the relationship between the Republic of Sakha and the Russian Federation makes the discussion of colonial and non-colonial relationships particularly valid. Sakha government and industry leaders definitely saw the relationship with the USSR as a colonial relationship. Taras Desyatkin, director of the Yakut Gold Factory, wrote in his company's promotional pamphlet:

> For decades Yakutia was called the "hard currency factory of the country." This glory came to the miners through hard work in conditions difficult to image. Nevertheless, it is paradoxical that the Republic of Sakha's fantastic riches did not make her people richer. The humiliating position of being a natural resource ward cannot satisfy the people of Sakha, the government of the Republic or our first President, M. Nikolaev. This is now at the core of the government policy of the sovereign Republic of Sakha. (Desyatkin, 1991, p. 1)

Currently, Sakha is throwing off the yoke of its colonial power, the Soviet Empire, almost fifty years after India's independence, over thirty years after most of Africa's independence, and thirty-seven years after Alaska's (USA) statehood. Today, Sakha is trying to become a prosperous member within a Russian federation. Many regions and countries have dealt with many of the kinds of problems that Sakha is facing. For the most part, the Sakha development experience is similar to that of other economies that experienced export-led economic growth. (Lewis, 1989) Some of the choices made by these countries have led to dead ends, and other choices have led to continued growth—and many more new choices. Research about other primary export economies offer a valuable collection of ordered and evaluated case studies, which identify priority policy issues for countries and regions involved in primary resource production.

The Republic of Sakha is representative of a resource rich, post-Soviet economy. For the Republic of Sakha this apparent wealth alone does not automatically guarantee economic growth and success, or a good quality of life for the local population. In fact, a recent study by Sachs and Warner supports the notion that natural resource endowments can even be considered a detriment to economic growth, especially if the countries do not adopt "appropriate" government policy. (Sachs and Warner, 1995a; Sachs and Warner, 1995b) Lewis noted in 1984 that, "the performance of the non fuel mineral countries is unsatisfactory for most indicators of development success." (Lewis, 1984, p. 157) In a cross country analysis, according to Sachs and Warner, the last twenty years of global development has shown that many countries rich in natural resource endowments did not become the success stories in the 1970s, 1980s and 1990s. (Sachs and Warner, 1995b) Rather, many of the resource-rich countries are almost bankrupt (Nigeria, Mexico, Angola), and conversely, nations with few resources are the economic success stories of the 20th Century (Japan, South Korea, Taiwan). (Sachs and Warner, 1995b)

The way natural resources are exploited is at least as important as the initial condition of natural resource wealth or may even be more important. The experiences of some of the African diamond producing countries have demonstrated this point with a vengeance. Botswana "... has one of the highest per capita incomes in Africa and enough foreign exchange reserves to cover its debt 10 times over," (Dowden, 1995) while Angola "... despite bigger and better diamond mines than Botswana, as well as huge oil reserves, is a broken country, with inflation at 1,000 percent, an $11 billion debt and most of its revenues mortgaged for years ahead for arms purchases." (Dowden, 1995)

Some economists even propose that countries are considered richly endowed with natural resources as a function of their economic, social and political organization and conditions, rather than seeing the economic, social and political organization and conditions as a function of resource endowments. Paul David and Gavin Wright argue that, at least for the United States, natural resource endowments are not "... derived from geological endowment, we argue, but reflected the intensity of search; technologies of extraction, refining, and utilization; market development and transportation costs; and legal, institutional, and political structures affecting all of these." (David and Wright, 1995, p. 2) Therefore, in asking the question why the United States became the world's leading mineral producer, David and Wright conclude that "... 'natural resource abundance' was an endogenous [explainable within the system], 'socially constructed' condition that was not geologically pre-ordained." (David and Wright, 1995)

The great "successes" of economic growth in the nineteenth century (Argentina, Australia, Canada, New Zealand, United States and Uruguay) were able to combine resource wealth with a suitable development policy. (Kravis, 1970, p. 853; Chambers and Gordon, 1966, p. 315) It is possible that the process of combined resource wealth and appropriate political, economic, and social policy ran its course in regions and countries where the conditions were right and occurred in most of the places that it could by the twentieth century. Such places and conditions seem to run out in the twentieth century, instead giving a chance for a predominance of high growth economies of the Japan-South Korea-Taiwan model.[9] The Russian Far East, including Sakha, might have followed the pattern of the successful economies of the 19th century, if it had not been for the Russian Revolution. Even within a closed and centralized economy, the Russian Far East was successful compared to its Soviet counterparts in the western parts of the USSR.

Performance within the context of primary export economies raises a specific set of questions that revolve around policies that capture and manage economic rents. These policies link (or encourage) growth of the primary industry to other parts of the existing economy, and deal with the fluctuations in revenues that the global market systems bring to primary resource exploitation. (Armstrong and Taylor, 1985, p. 69; Lewis, 1989, p. 1543) S.R. Lewis, Jr. includes these issues in what he calls the "four groups of questions [that] seem important in analyzing the experience of the primary exporters."(Lewis, 1989, p. 1542) According to Lewis:

First, how much of the economic rents arising from primary production should be captured for use by the country which owns the resource and by the government of the country? A corollary issue is: by what methods should the rents be captured? Both the level and the method of rent extraction help determine size and rents in present and future.

Second, how should the rents, once captured, be used? If rents finance investment, how should capital formation be divided between further growth of primary sector and diversification of the economy? How much should be undertaken by governments, and how much left to the private sector, including the primary producers themselves? If rents are consumed will it be public or private consumption, by which groups in society, and what effect on wages paid to all sectors

Third, how can linkages (other than government budget) from the rent-generating primary exporting activities to the rest of the economy be exploited to encourage broader-base growth? This is largely a question of how, and by how much to divert export revenue to domestic spending. The methods used will effect the extent to which the diversion of demand generates further income or is self limiting

Fourth how should cyclical fluctuations be managed—in both booms and busts. This is partly a question of managing the rents, particularly for non-renewable resources, and it is partly a question of general stabilization policy. The time phasing of investment and consumption expenditures in relation to the variable flows of export earnings and rent-related government revenues seems critical." (Lewis, 1989, p. 1543)

We have seen how Sakha captures and uses economic rents (Chapters 2.5, 4.3, 5.4.3, 5.3.1.1 and 6.1.5.1). We have also seen how basic linkages, including transport and support sector industries, were established in Sakha during the time of the Soviet Union (Chapter 3). With the changing economic conditions in Russia, Sakha experienced a change in the nature of linkages, specifically, the motivation behind Sakha's uneconomic linkages. During the Soviet period, uneconomic linkages in Sakha were closely aligned with a pricing system controlled by the central government. Price liberalization and more market aligned pricing followed the collapse of the USSR, and allowed a new set of uneconomic linkages in Sakha, motivated by an attempt to create value-added industry and promote a policy of import substitution. Sakha's recent attempts to create rent-generating linkages, by diverting revenue into new value-added domestic industry (i.e. diamond cutting), has a track record of losing income for the Republic.

Primarily, the policy of promoting value-added industry resulted in investment decisions by the Sakha government which ran counter to the region's own comparative advantages. This is an investment strategy that Balassa calls, "import substitution at any cost." (Balassa, 1989, p. 1667) Within Sakha, "backward linkages that create demand for transportation facilities and domestically-produced (support sector) inputs" (Balassa, 1989, p. 1665), are relatively mature and developed. It is unlikely that these economic sectors will generate growth in the short term, but these sectors may be a significant part of the reason

the Sakha economy weathered Russia's economic crisis. In addition, "final demand linkages result from increased incomes which increase demand for locally-produced goods" (Balassa, 1989, p. 1665), largely compete with rampant inflation and relatively cheaper imports. Linkages that create processing activities from export are generally non-competitive for Sakha in the face of new market conditions. (Balassa, 1989, p. 1665)

The relationship between diamond revenue and the rest of the Sakha economy, in general, shows that linkages in Sakha do not create a great multiplier effect. Measuring the multiplier effect directly is difficult for the Sakha economy. I conclude that since the non-diamond oriented Sakha economy is small relatively to the size of the diamond industry the multiplier cannot be great. For Alaska, in contrast, the multiplier is a recognized way to extend the growth generated by the primary export sector. (Tussing, Huskey, and Singer, 1983, p. 1-1)

Within this context if we try to evaluate Sakha's ability to manage its economy, it is apparent that Sakha is completely unfamiliar with managing its rents within a boom and bust cycle. Any contraction of Sakha's economy under the USSR was managed mostly from Moscow. At this point, since Sakha's greater degree of economic independence following the economic collapse of the Soviet Union, the region has only barely come out of a trough in the regional economic cycle.

In addition to understanding how Sakha addresses Lewis' four basic questions it is useful to compare existing examples of successful development. (Lewis, 1989, p. 1543) Case studies that involve comparing countries or a historical analysis of the process of development within a particular country are now standard elements in addressing primary export economies. (Findlay and Lundahl, 1994; Lewis, 1989; Roemer and Stern, 1981) Some experiences, studies and conclusions are more pertinent to the Republic of Sakha than others. Sakha has always exported raw materials from its region, never manufactured goods. It seems that resource export will continue to be Sakha's main economic, or at least income generating, activity in the foreseeable future. Sakha shares more traits with the development experience of Argentina and Australia, rather than with Korea or China. (Lewis, 1989; Sachs and Warner, 1995b) In addition, Sakha is big in land area, but low in population density. This further aligns it as an "empty" land sharing similarities with Canada, Argentina, the 19th century US West, Australia or Saudi Arabia, rather than with Korea, Japan, Holland, or most of China or India. (Lewis, 1989; Kravis, 1970)

The Republic of Sakha is not an independent political entity dealing directly with world markets. Sakha is a region within Russia, sharing a common economic, legal, and social culture. Sakha has been incorporated within Russia since the 1600s and was, with the exception of a brief spell of political uncertainty during the Russian Civil War, a region within the Soviet Union. This condition of being a resource rich region within a large country suggests a more complex dimension to issues, since policy decisions must be made within the context of the larger federal government. There is the added dimension of federal and local relations to all issues of development policy and strategy. In the past, this created

a distinctive twist for Sakha. Within a socialist country that professed and followed an overall strategy of autarky, stressed balanced development, "closedness" and "inward orientation," (Gregory and Stuart, 1986) Sakha experienced export-led economic growth, unbalanced development, relative openness,[10] and outward orientation.

7.5.2. Alaska, USA: Development Analog of the Republic of Sakha

Alaska is an area that shares many similarities with the Republic of Sakha. The idea of drawing a parallel between Alaska and Sakha development is not new. The suggestion was made by Serebrovskiy in the 1930s:

> As I was convinced when I was there [Alaska], Siberia and Alaska have much in common in climate, industry, supply, transport and other areas. An acquaintance with Alaska at all levels will help us develop Siberia, especially that the north eastern part of our republics is much richer than Alaska in terms of its natural resources, particularly gold. (Serebrovskiy, 1936, p. 65)

Thirteen years later the suggestion was again made by the historian and geographer Owen Lattimore. In 1949, Lattimore wrote, in a collection of essays on geography edited by Vilhjalmur Stefansson, that:

> ... the Yakut Autonomous Soviet Socialist Republic is in many ways the counterpart of Alaska. It does not correspond to Alaska exactly in geographical position, it is true ... In one major sense, however, Yakutia corresponds functionally to Alaska: it is the home of an established Arctic and sub-Arctic population which is already master of all the techniques needed for the utilization of the Far North, and can be expanded to meet growing needs. (Lattimore, 1949, p. 135–136)

This is a natural and obvious conclusion. After all, Alaska was the easternmost extension of the Russian Empire until 1867. Alaska, Siberia and the Russian Far East certainly shared a colonial experience. (Tussing, 1995) Of course, Lattimore's inclinations were more likely inspired by the fact that his itinerary to Yakutia, included a stop in Alaska. Lattimore was in the company of US Vice-President Wallace during his infamous trip to Siberia and the Russian Far East[11] (Lattimore, 1949, p. 137). Serebrovskiy, on the other hand, had toured most of the chief mining areas of the US and the Soviet Union before making the analogy. (Serebrovskiy, 1936)

Lattimore's few days in the Yakutia, ASSR led to the following conclusion:

> To integrate the Far North with the rest of the civilized world, technology must acclimatize itself there; this it can never do satisfactorily unless the peoples of the Far North are enabled to make themselves at home in the realms of science and technology. Much that has been accomplished in the Soviet Far North, and especially in Yakutia, should be studied and applied in the Far North of North America. (Lattimore, 1949, p. 145)

The results of the Soviet policy to rapidly develop the North was impressive enough to make Lattimore view Yakutia as a model for development. If Lattimore truly did not know from his trip that the development was carried out at the tremendous cost of human life then his views do not seem foolish.

For the moment, let us focus on Lattimore's suggestion that Yakutia (Sakha) and Alaska may be viewed as "counterparts" in development. (Lattimore, 1949, p. 135) Sakha and Alaska are remote, cover a large territory, have a harsh northern climate, and, consequently are sparsely populated. Tussing suggests that Alaska's size and sparse population are precisely the elements that have aided Alaska in its phenomenal growth. (Tussing, 1984, p. 51) Alaska, according to Tussing, is relatively unproductive per unit of area, but because it is large, "[r]elative to its present small population [about half a million people throughout the 1980s and 1990s], Alaska is indisputably resource-rich." (Tussing, 1984, p. 51) Sakha, like Alaska, also has the advantage of great size (Sakha is two times larger than Alaska), and a relatively sparse population (Sakha has twice as many people). Per unit of area, Sakha seems to be richer in resources than Alaska. (Shishigin, 1994) Yet a visit to Alaska and Sakha will show a great disparity between the two areas in all aspects of economic life. People in Alaska, in general, live a rich lifestyle; people in Sakha, in general, live a significantly poorer lifestyle.

The key to contrasting the parallel between Alaska and Sakha lies in the fact that Alaska's people did not always live a wealthy life-style, because Alaska's wealth did not stay in Alaska. Before Alaska became a "sovereign" US state in 1959, Alaska's resources were exploited, one after another, with little benefit to the local economy. The colonial relationship that Alaska had with the federal government meant that the local economy was left with little more at the end of a "boom and bust" cycle than it had at the beginning.

7.5.3. Patterns of Development in Alaska

Alaska was Russian America, the easternmost colony, until it was sold to the United States in 1867. The first non-Natives to exploit Alaska's resources were the Russian fur traders who crossed the Bering Sea to continue and expand the fur trade. Russians engaged in a lively trade in fur seal and sea otter pelts from 1786 until 1867, an industry which continued under the British and the Americans until 1911, when the fur seal and sea otter were virtually exhausted. (Rogers, 1962, p. 81) From 1847 to 1853 the British and Yankee whalers, operating from ships, virtually annihilated the whaling stocks that were concentrated every spring along the rich feeding grounds at the ice edge. Alaska whaling efforts kept the Europeans and Americans supplied with whale oil, girdle stays, and buggy whips.[12] (Rogers, 1962, p. 81)

When the US purchased Alaska from the Russians in 1867 it quickly stepped into Russia's shoes in the colonial relationship. The US exploited salmon as the primary base resource from about 1878. Gold was discovered in lode deposits in the 1880s in the Southeast of Alaska (Juneau and Treadwell), about the same time as the Lena gold fields of

Irkutsk began to step up operations. (Rogers, 1962, p. 81) The McCarthy-Kennecott copper mine, in operation from 1911 to 1938, produced ore from 1915 to 1928 at a value that exceeded that of gold production.

Just before the Second World War, Alaska specialized in only salmon and gold.

> The extent of this colonial specialization is highlighted in statistics of Alaska's external trade. During the 1931–1940 decade, the most recent decade for a predominantly peacetime civilian economy, average annual value of out-shipments totaled $58, 758,000 of which the two leading items were canned salmon ($32, 582,000 or 55.1 percent of total shipments), and gold ($15,764,000 or 26.6 percent), all other out-shipments together accounting for only 18.3 percent of the total ... The colonial difference between the two sides of the trade resulted in a draining of wealth and resources away from Alaska ... (Rogers, 1962, p. 81)[13]

Interestingly, during this period Sakha also specialized in gold mining, except that the labor force in Sakha evolved during the 1930s from free or state hired prospectors to a labor force of predominantly *gulag* camp convicts.

World War II brought on "Military Alaska" and a sizable influx of military and construction personnel to Alaska. Tussing explains that for this period you can consider "defense" as Alaska's exploitable resource. (Tussing, Huskey and Singer, 1983, pp. II–4) The resource in this case is a strategic location. Alaska's geography made it vulnerable to Japan during World War II. For example, some of the Aleutian Islands were taken temporarily by Japanese forces. Alaska was also a prime staging area for the US lend-lease program to the Soviet Union. Fairbanks was the point of transfer for US planes to Russia and Dutch Harbor was a refueling stop for ships sailing across the Pacific to Russian ports. From 1939 to 1943, the number of military personnel in Alaska rose from 524 to 152,000. (Rogers, 1962, p. 93) During the Cold War period 1951 to 1960 Alaska had between 34,000 and 50,000 military personnel. (Rogers, 1962, pp. 93–95) No analogy of military expansion occurred in Sakha, although the Japanese were also considered an aggressor. This was because other areas like the areas along the Chinese border and the northern European areas of the Soviet Union had a "geographic competitive advantage" for the USSR's defense strategy. (Cheney, 1990, pp. 97–99)

Military Alaska eclipsed the salmon and gold industries. The salmon industry also suffered the problem of supply at this time, the near exhaustion of the resource from over fishing. Between the 1930s and the 1960s, the average yearly production fell from 336 million pounds of canned salmon to less than 100 million pounds of salmon. Gold suffered from a fixed pricing regime of $35 a troy ounce. This led to a radical decrease in gold production from over $23 million (nominal 1930s) dollars in the late thirties to less than $4 million (nominal 1960s) dollars in the 1960s. (Rogers, 1962) If you consider strategic location a resource for the military period, Alaska's history to 1959 was a history of resource exploitation. George Rogers called these "major development strands," and was the

first to point out that Alaska's development was the development of a primary export resource, sometimes two resources, followed by an exhaustion of the resource or a change in market conditions. (Rogers, 1962, pp. 60–102) Alaska's major development strands are not unlike those we observed in Chapter 3 for Sakha. Arlon Tussing explains this phenomenon in terms of overall development:

> The larger economy outside Alaska has supported a non-Native population in Alaska chiefly because it makes global economic sense to identify and "high-grade" natural resource *anywhere* if it is *sufficiently large or sufficiently valuable* to overcome the high costs of production and transportation. (Tussing, 1984, p. 52)

7.5.4. Alaska's Break with Colonialism: Capturing Economic Rent

By the end of the 1950s, enough local people considered themselves "Alaskans" and began to question the departure of most benefits of resource development outside the territory. (Tussing, 1994, p. 73) In particular, Alaskans were upset about the over-exploited salmon stocks, which they blamed on outside fishing companies. Salmon fishing was carried out with extremely efficient wooden and net fish traps. These traps became the symbol of outside oppression. (Rogers, 1960, p. 1) One of Alaska's territorial governors, Ernest Gruening, in a keynote address to the opening of Alaska Constitutional Convention in 1955, entitled, *LET US END AMERICAN COLONIALISM!* [*sic*], sums up the general attitude held by many Alaskans at the time: (Gruening, 1966)

> America does not, alas, practice what it preaches, as long as it retains Alaska in colonial vassalage.
>
> Is there any doubt that Alaska is a colony? Is there any question that in its maintenance of Alaska as a territory against the expressed will of its inhabitants, and subject to the accompanying political and economic disadvantages, the United States has been and is guilty of colonialism?
>
> Lest there be such doubt, lest there be those who would deny this indictment, let the facts be submitted to a candid world.
>
> You will note that this last sentence is borrowed from that immortal document, the Declaration of Independence. It is wholly appropriate to do this. For, in relation to their time, viewed in the light of mankind's progress in the 180 years since the revolt of the thirteen original American colonies, the "abuses and usurpations" to use again the language of the Declaration-against which we protest today, are as great, if not greater, than those our revolutionary forbears suffered and against which they revolted. (Gruening, 1966, p. 386)

Although Gruening imbues Alaska's pursuit of statehood with romance, Alaska's concerns were definitely economic. Gruening's address goes on to cite as examples of colonialism: the Marine Act of 1920 (the Jones Act), which excluded Alaskan ports from being able to ship and receive goods on foreign vessels, including Canadian vessels; the fact

that Alaska was not included in a nation-wide highway (motorway) construction bill or an air commerce bill (federal aid for airports and navigation construction); and, finally the crash of the salmon fisheries wholly placed blamed in the minds of Alaskans on outside ownership and greed. Gruening points the finger at the US federal government as chief facilitator for the destruction of the salmon fisheries, saying:

> Here *was* Alaska's greatest natural resource.
> Here *was* the nation's greatest fishery resource.
> For nearly half a century, the federal government has totally ignored, has "refused assent" to the petitions, pleas, prayers, memorials, of legislatures, delegates, governors and of the whole Alaskan people for measures that would conserve that resource ... Nowhere, as in the Alaska fisheries fiasco, is the lesson clearer of the superiority, in purely material terms, of self-government to colonialism. (Gruening, 1966, pp. 403–404)

The transformation from colony to a wealthy region occurred because Alaska became a state of the United States in 1959, entitled to the same rights as the other 48 US states. Tussing argues that Alaska's success is due not only to Alaska's association with the US, one of the "... biggest and richest of the democratic capitalist nations ..." (Tussing, 1984, p. 51) but specifically, being an equal member of the United States. This equality and what may be called a degree of "sovereignty" immediately gave Alaska two "... immense economic advantages" (Tussing, 1984, p. 51) First, Alaska became a part of:

> ... this [US] greatest of customs and monetary unions, and subject to its laws and business practices, is an awesome economic advantage, particularly for a huge, sparsely populated land mass. All kinds of productive input-capital equipment, skilled labor, technology, information and ideas, communications media, entrepreneurship, and financial capital-are readily abundant or instantly accessible for any enterprise that has promise of economic success. (Tussing, 1984, p. 51)

Added to the "instant" opportunities by association to the US, Alaska reaps the benefits of the relatively extensive rights states have within the federal republic. The United States developed a complex balance between states rights and federalism molded by 183 years of experience and even civil war.

Second, as part of becoming a state the federal government gave 104 million acres (about a third of the state) outright to Alaska, including all resource rights to royalties, taxes and other conventional means to capture economic rents from resource development. Since a non-renewable resource, like oil, is a "gift of nature," all of the income the exploitation generates is economic rent. Alaska's wealth after statehood was generated from capturing economic rents of an extremely valuable "gift of nature." As part of its land grant Alaska received the Prudhoe Bay oil field, the largest deposit of oil ever found in North America (discovered in 1968), which, at its peak, produced 20 percent of US production (an equiva-

lent to UK's 1993 production). In managing the revenues from this world class resource, Alaska has:

> ... access to a number of powerful fiscal and regulatory tools, invented earlier in other states, with which they can capture or redirect an even bigger share of the economic rents associated with comparatively rich natural resources. (Tussing, 1984, p. 52)

Alaska faced the chief issues posed to any primary resource exporter, namely how to manage its state owned resource base. Alaska also needed to decide how to manage the economic rents from non-renewable resource development and the subsequent revenue flow which those rents would generate.

First, Alaska policy makers recognized the immense importance of natural resources and the likelihood that economic rents from resource exploitation would be the main source of Alaska's wealth in the present and future. In its state constitution Alaska created a separate article on natural resources, the only state to do so. (Harrison, 1986, p. 68) In this article (Article VIII), Alaska puts forth its general policy of resource management:

- The State would develop "... its resources by making them available for maximum use consistent with the public interest." (Harrison, 1986, p. 70)
- The State would also "... provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people." (Harrison, 1986, pp. 70–71)

The first part of Alaska's policy is to maximize the depletion of non-renewable resources, "consistent with the public interest," while the second part, dictates that the state should, however, deplete these resources for maximum social benefit. (Harrison, 1986, p. 70)

Decisions on a strategy (quantity and price) at which Alaska sells its non-renewable resource to maximize benefits, or, for that matter, the rate of resource depletion, were deliberately taken out of the state's sphere of decision making once it leased oil deposits and private oil companies began producing oil. The infrastructure (linkages) which was involved in bringing Alaska oil to market represented an investment of over $10 billion dollars, a state of the art 800 mile pipeline that stretches from the extreme north, where the oil fields are, to the tide water Port of Valdez, Alaska. Although the oil flowing through trans-Alaska pipeline comprises a large amount, it represents less than three percent of world oil production. This is hardly enough to influence the world market and so Alaska became a price taker. That is, Alaska does not control a large enough portion of the market that its incremental supply affects the total supply. The combination of needing a flow of income to pay off large up-front investment and the inability to control oil prices means that Alaska is committed to a maximum rate of depletion (quantity) at whatever price the market offers.

Another decision taken out of Alaska's hands is whether to sell oil to a foreign country or domestic market. Alaska would, of course, sell oil to refineries in Japan rather than to US west coast refineries and US Gulf of Mexico refineries, since this would be more profitable because of higher prices and lower transport costs. Selling Alaska North Slope crude to foreign markets was prohibited by federal law until 1996.

Alaska is a resource owner and as the "sovereign" government, has taxation rights. Because of these two different roles, Alaska approaches the task of capturing revenues using two philosophically different, though non-competing methods.

As the resource owner, Alaska needed to decide whether to explore, develop and produce non-renewable resources (in this case oil) by itself or to let private companies do the job on behalf of the state. Alaska, with no expertise and no equipment for developing oil, decided to let private companies explore, develop and produce its oil on behalf of the state. The privilege of drilling on a particular plot of Alaska, with the promise of being the subsequent developer was determined on a competitive basis, and the right granted to the highest bidder (usually a multi-national oil company). This is one of three ways that Alaska receives revenue from ownership of the oil resource. The lease bonus payments for the Prudhoe Bay field equaled over $900 million in 1969. The second way Alaska receives revenue is from rents (tenant rent, not to be confused with economic rent) or the fee paid by the developer for maintaining rights to a particular lease. This is a relatively small fee relative to all the other fees and usually plays a large role only if a company bids and wins in a lease sale, pays its lease bonus, and then does not drill oil or does not produce oil. If the company does not produce oil it is not earning any income, yet it still pays rent. The state wants to see the resource developed and so this is an incentive for the company to produce the resource or stop paying rent and return the lease. Finally, Alaska gets a percentage of the resource as the owner. By convention in the US for oil this is 1/8 of the resource (12.5 percent). Alaska can take this portion in kind, as barrels of oil, or have the oil companies sell the oil on the State's behalf.

As the "sovereign" government, with taxation rights, the state levies four taxes. A production (severance) tax of 12.5 to 15 percent, a conservation tax (collected like a severance tax, but monies are dedicated for environmental conservation) of 1/8 cent per barrel of oil, a state corporate income tax on profits, and a property tax of 20 mills (a mill is a tax rate equal to .001 percent, in this case, the tax rate is .02 percent) on the value of property. The State of Alaska further devolved some of its powers to local government. For example, in the oil-producing area the municipal government also levies a property tax at the rate of three mills (.003 percent).

In 1981, gross state product from petroleum production was $13.6 billion, or $31,264 per capita (nominal 1981 dollars). State revenues from oil production from 1981 to 1992 represent over 80 percent of total revenues. In its peak (1982) Alaska's general fund revenues equaled $3.6 billion dollars (out of $4.1 billion), or $ 7,710 per capita, over three times Sakha's gross export earnings per capita.

So, Alaska was able to address the issue of capturing economic rents for itself. As Lewis reminds us, however, "[t]he capture of the mineral rents for the developing countries is, in many respects, the easiest problem. The management of rents is much more problematic." (Lewis, 1989, p. 1559)

Most people of Alaska, from government officials to fishermen, generally accept policy conclusions based on a staples theory explanation of the relationships between the oil producing sector and the rest of the economy.

> It has now become nearly axiomatic that an industry or business is either part of the "economic base," which brings money into a region by exporting commodities or services, or part of the "support sector," which exists by virtue of the local spending and responding to income originating in basic industry. And virtually everyone who talks or writes about economic development in Alaska knows about the employment or income "multiplier" that expresses the amount of support-sector business or employment each job or dollar of "value-added" in basic industry will sustain. (Tussing, Huskey and Singer, 1983, pp. 1-1)

Alaskans were, therefore, actively engaged in the manner in which the state government utilized the windfalls from petroleum development. Sakha policy makers have not adopted policy that exploits the multiplier effect and neither has Sakha's attempt to gain benefit from value-added activity brought positive results. Currently, Sakha policy makers do not turn toward the public to make decisions about distributing economic rent.

At the same time Alaska incorporated public participation in economic rent management, policy makers in Alaska "discovered" and used the principle of comparative advantage. This occurred in Alaska during the late 1970s and early 1980s when surplus economic rents from the petroleum industry equaled several billion dollars. By understanding that Alaska's chief comparative advantage was in petroleum production various proposals were prevented from redirecting the immense economic rents to develop new untried and ultimately unsustainable activities.

Economists at the University of Alaska showed that the value of revenue added to the Alaska's economy in the base industry (petroleum development) was tremendous, relative to any other Alaska activity. (Tuck, 1984, pp. 100-101) For example, Alaska would have to produce five and a half times US coal production (1979) or nine times US copper production (1979) to match Alaska's petroleum revenues. (Tuck, 1984, p. 101) The people of Alaska were convinced that an additional dollar invested on developing an additional unit of oil for sale on a demonstrated market, or putting the state's money in the bank and collecting interest, is more efficient than subsidizing a new industry. (Tussing, Huskey and Singer, 1983, pp. 1-2) In short, why should a region bother investing and subsidizing unsustainable industries when it can make more money developing an additional unit of base resource or put the money in the bank to earn interest?

This kind of argument led Alaska policy makers to create an investment fund from a portion of its oil revenue windfall. The Alaska Permanent Dividend Fund is a $15 billion fund that earns more money than any sector of the Alaska economy except the petroleum development industry and petroleum support industry. (Brady, 1993, pp. 2–8) Several important features of the Permanent Dividend Fund make it successful. In particular much of the success relates to immunizing the fund from political influence and raiding. (Brady, 1993, p. 15) First, the fund is excluded from being used for development or investment within the state. Although this meant that money from the original economic rents would be siphoned off outside the state and reduce the multiplier effect of the revenue, it diversified the state's earnings in investments that gave higher than average returns compared to likely returns on local development projects. (Brady, 1993, pp. 2–8) Since most of the Alaska economy became depressed as the oil economy became depressed (the "bust" cycle), the Permanent Dividend Fund was an outside fund that provided a diversified and stable source of income. (Brady, 1993, pp. 2–8) The Canadian province of Alberta used an Alaska-styled fund exclusively for local investment with disastrous results. (Tussing, 1995, personal communication) All the money was spent on value-added locally generated projects.

The second feature of the Permanent Dividend Fund removed it from the grasp of political raiding, by distributing part of the fund's earnings to the people of Alaska. (Brady, 1993, p. 14) Every year a dividend of about $900–1,000 dollars is distributed to every Alaska resident. (Brady, 1993, p. 15) This clever strategy of appealing to the residents' rent-seeking behavior insures that any politician who would attempt to disburse the fund for any reason, including general government or special interest projects, would be under attack by most residents of Alaska. Another advantage to the dividend program is that much of the money given to the residents is spent within Alaska and takes advantage of the multiplier effect (compensation for the fund's "outside" investments). The Permanent Dividend Fund provides an incentive for citizens to be aware and concerned with the general management of economic rents. This is also an equitable way to let the citizens directly enjoy part of the economic rents.

Alaska's key to becoming wealthy was that, armed with all the tools of a US state, Alaska was able to capture some of the economic rent from the development of oil at Prudhoe Bay, redirect the revenue flow and hold it within its own economy. Although Alaska, the regional government was the resource owner, the actual exploration, development and production was carried out by private multi-national oil companies and private subcontractors to the multinational companies. Similarly, although some of the benefits of resource revenues were squandered by state government, overall, much of the benefit of the economic rents from petroleum development reached the Alaska public, in the form of employment, infrastructure, services and even a direct disbursement of economic rents in the form of a dividend.

7.5.5. MAINTAINING THE ENGINE OF GROWTH

Grave issues face Alaska's future, including wasteful use of the revenue flow from economic rent and the sustainability of Alaska's petroleum-generated economy, once the bulk of the oil is depleted. These issues are second order problems. Alaska created, on par, a successful solution to the fundamental problem of a remote or peripheral region successfully capturing and managing economic rent from non-renewable resource development to maximize the benefits for its inhabitants.

Maintaining the engine of growth is always a problem, as is turning primary resource export-led economic growth into diversified long term growth. It is unlikely that Alaska will have a balanced economy any time in the near future. (Tussing, 1984, p. 52) Facing this reality involves many complicated and unpopular policy decisions. Alaska is attempting to break trail on a strategy for development in the face of dimminishing income. Of course the secret hope of many Alaskans is that another resource boom will come into the horizon. The only likely chance of this happening is if the natural gas resources of the North Slope of Alaska become economically viable as LNG export to Asia. North Slope natural gas resources face most of the same issues of Asian demand that are described in Chapter 6 for Sakha natural gas resources.

The phenomenon of boom and bust economics is certainly a part of the future of Alaska's development, as it is of all primary resource export economies. Alaska is facing a decrease in petroleum revenues, as petroleum production decreases. At existing levels of state spending, Alaska's state government is facing a growing budgetary deficit. (Goldsmith, 1992, p. 1) Goldsmith, an Alaskan economist, proposes a fiscal strategy that includes cutting spending, drawing on the Permanent Fund earnings, levying a personal income tax (an extremely unpopular proposition), managing existing state cash reserves from settlement payments instead of spending them and encouraging economic development through careful fiscal management and taxation and royalty policy. (Goldsmith, 1992, p. 7) One of Alaska's advantages is that it has developed a regional economic model (computerized) that it uses for forecasting the economic, demographic and fiscal condition of the state. (Berman, Colt and Goldsmith, 1986, pp. 1-1 through 1-9) The Sakha regional government has no economic model, nor does the current state of secrecy about Sakha's regional government foreign currency earnings help in developing a useful information base.

Boom and bust economics also affects the rural villages. Furthermore, although many rural villages in Alaska have healthy economies related to oil development, other rural areas rely on fishing and timber that are subject to economic cycles. As a consequence, some villages with limited development opportunities are given a double dose of the bust cycle in the face of shrinking federal and state transfers (Huskey, 1992, pp. 2-3). In Sakha, none of the rural villages have healthy economies and almost all the rural villages faced the worst combination of a contracting economy along with decreasing government transfers within the last four years.

If, on the other hand, Alaska is fortunate enough to face another resource boom, for example from the export of natural gas development from the North Slope, Alaska has the political and economic institutions and experience in place to maximize the benefits and diminish the liabilities of such export-led primary resource growth. The Republic of Sakha is relatively prepared.

7.6. Indigenous People

One sector of the Sakha economy that demands special consideration is the economic activities of indigenous people. Currently, the traditional sector of a northern economy is of particular interest to development discourse, particularly the sustainable development discussion. Although we will begin examination of the economy of indigenous activities with respect to sustainable development, a better framework for the real issues facing Sakha's indigenous economy is the existing situation in Alaska.

Some arguments about development pit the traditional economies of indigenous people against the cash economy. Discussion of sustainable development often creates this dichotomy. For the North, a proposition discussed extensively, is that indigenous economic activities are, or can be, the foundation of a sustainable livelihood. (Usher, 1987; Kassi, 1987; Griffiths and Young, 1989; Duerden, 1992; Flanders, 1992; Chance and Andreeva, 1995) This deserves attention for two reasons. The first is that in discussing development in the Republic of Sakha the issue of indigenous people's participation is particularly relevant. The second is that the proposition that the indigenous economy must suffer from contact, be in conflict or remain exclusive of the market, or cash economy, need not be true, as we shall see from our Alaska example.

In Sakha the concept of indigenous people takes on a remarkably greater complexity, then the ordinary discussion of indigenous economy and non-indigenous economy, because there are at least four or five clear degrees of "indigenousness."[14]

The arguments also seem to suggest, and I admittedly simplify, that indigenous people of the North are fundamentally a different category of people compared to non-indigenous people. Indigenous people are characterized as either a modern rendering of Rousseau's "noble savage," the people who possess the forgotten secrets of sustainability, or Hobbesian brutes, where the same forgotten secrets (i.e., traditional, indigenous knowledge) are bad (uncivilized) so that, as Robert Heilbroner suggests:

> ... a society whose historical journey is entrusted to the guiding hand of Tradition sleepwalks through history. It may make remarkable adaptations—if it did not, human society would never have survived its danger-beset infancy—but these departures from life's well-trod course are driven by need rather than adventure or a pioneering imagination. (Heilbroner, 1993)

Some of the literature that tries to adapt sustainability to the North unconsciously avoids confronting the inherent ambiguity of sustainability and indigenous people's economic activity. The discussion is either extremely specific (e.g., sustainability of northern

Canadian indigenous village of Old Crow, population 250) or chooses not to recognize the diversity in the global northern "indigenous economy" and addresses only a stereotypical model of indigenous economy. (Usher, 1987; Griffiths and Young, 1989; Flanders, 1992) But how can the rural economy of a region be torn out of the general system of the regional economy? Most of today's indigenous people, certainly in Alaska, and in most of the areas of Russia, are very familiar with the cash economy. In fact, many of their subsistence activities are carried out more efficiently by incorporating equipment and supplies from the cash economy. This does not diminish the importance of indigenous rural subsistence to the overall indigenous economy.

Indigenous people can operate on many levels within the world economy and should certainly not be condemned for successfully adapting and reaping benefits from the "Western cash economy." The Sakha and other indigenous peoples need not choose between a dichotomy of tradition and adaptation to the market. Alaska, I shall argue, is an example of a region where the indigenous economy has synthesized the traditional economy and the market.

7.6.1. The Alaska indigenous economy: Interaction with the developed capitalist market

The Alaska indigenous economy exists within a complex economic, legal, and political framework that provides an opportunity for the indigenous economy to participate in a broad spectrum of economic activities, from Native-owned corporations to subsistence use of fish and wildlife resources. Alaska presents difficult and often contradictory evidence for researchers addressing sustainability.

In Alaska the indigenous economy has become greatly influenced and involved in the oil and gas industry that has dominated the Alaska economy. With the discovery of the Prudhoe Bay "super" oil field in the late 1960s, the "indigenous economy" in Alaska has become an active participant in the market economy of the state. This discovery led to the 1972 Alaska Native Claims Settlement Act (ANCSA) that transferred 12% of the territory of the State of Alaska into Native ownership, and, with an award of $1 billion, set up 13 regional Native-owned corporations and over 200 village Native-owned corporations. (Leask, 1985, p. 5) Today, the regional ANCSA corporations represent about 75,000 Alaska Native shareholders (about 15 percent of the Alaska population), have close to $1 billion of corporate equity, have produced over half a billion dollars of net income in the last sixteen years (1974–1990) and employ 5% of the private workforce in Alaska. (Colt, 1991, pp. 1–4, 20)

Individually these companies demonstrate a mixed record of success and a few of the ANCSA corporations show considerable profits, primarily through investment in outside securities portfolios, major participation in the oil and gas industry and involvement in complicated sales of corporate net operating losses in the order of $445 million to large, non-northern American companies due to a US tax loophole that existed from 1987 to 1990 (Colt, 1991, p. 3–11). In addition to being able to operate under the American capitalist

framework, the indigenous people are also taking advantage of capitalist ideas for sustained economic growth. Two ANCSA Corporations established permanent funds totaling $91 million (imitating the Alaska Permanent Dividend Fund) primarily raised from state oil revenues, to insure against declining corporate revenues due to declining oil revenues. (Colt, 1991, p. 10) These types of trust funds are being touted as instruments of "sustainability" for indigenous groups in other Arctic areas such as Greenland. (Poole, et al., 1992, pp. 199–203) Some ANCSA corporations have modified the traditional goals of an American corporation for the sake of social sustainability in placing priority on job opportunities and training for their shareholders over profitability. (Colt, 1991, p. 20)

The indigenous people of Alaska have also taken advantage of their rights as state and federal citizens. An example of this is the organization of the North Slope Borough, which has collected almost $2 billion in property taxes from Prudhoe Bay oil development as the local, municipal government. The Inupiat controlled North Slope Borough government has provided high levels of public services, jobs, and income over the last twenty years. (Knapp and Morehouse, 1991, p. 311) This money has also been used directly to promote and support the subsistence economy in the North Slope Borough, by giving the borough government the ability to exercise political autonomy. A vivid example of this is the fight the North Slope Borough mounted against the International Whaling Commission's (IWC) 1976 ban on traditional bowhead whale hunting by Alaska's indigenous people. The North Slope Borough was instrumental in forming the Alaska Eskimo Whaling Commission, an indigenous organization that formally led the battle for obtaining a quota for bowhead whale harvest. The North Slope Borough hired scientists and spent more than $20 million on an elaborate scientific program to demonstrate that bowhead whale stocks were double what the IWC had incorrectly estimated, thereby reinstating a higher quota. (Knapp and Morehouse, 1991, pp. 309–310; Huntington, 1992, pp. 119–120; Core, 1996)

The indigenous economy is diverse and complex. Currently Alaskans face a great conflict over Native-self determination and economic activity in the form of legal debate over "first use" subsistence rights. In the US, subsistence users are legally defined as those people who have "... 'customary and direct dependence' on fish and game as 'the mainstay of livelihood.'" (Kruse and Holleman, 1991, p. 3) Federal law (the Alaska National Interest Lands Conservation Act (ANILCA)), granted priority rights over fish and wildlife on federal land to subsistence users and defined these users based on residency, not ethnicity. The intent of ANILCA was to recognize the special needs of Alaska Natives, even though ANCSA extinguished aboriginal claims to hunting and fishing rights. Since the majority of rural residents in Alaska were indigenous people, a non-race-based law granting rights to rural residents could avoid conflict with the fourteenth amendment to the US Constitution, guaranteeing equal rights to all citizens, and still insure that Native subsistence users had legal protection.

Along with federal legislation, Alaska state law had shown a preference for rural subsistence users of fish and game resources, but this was overturned in 1989 by the State

Supreme Court as inconsistent with the State constitutional requirements of equal access to resources by all Alaskans. (Kruse and Hollerman, 1991, pp. 3–5) This reversal means that indigenous rural villagers must directly compete with urban non-Natives for the same fish and game resources without any legal preference when resources are scarce. In practice this reversal has resulted in a legal tangle. The federal government is enforcing a rural preference on federal lands, while the state enforces equal urban and rural subsistence opportunities on state lands (including all navigable waterways and associated fisheries), and private land. (Kruse and Hollerman, 1991, pp. 3–5)

In rural villages and areas that have a predominantly indigenous population, but difficult and expensive access due to little infrastructure and geographic isolation, such as the Alaska North Slope or western coast of Alaska, the subsistence debate is less pressing than in areas like Alaska's southeast and southcentral areas, where predominantly non-Native urban settlements have easy access to nearby Native rural villages. Direct competition for resources between indigenous and non-indigenous users occur in southeast and southcentral Alaska when harvest levels rise above biologically sustainable levels. Native households only harvest nine percent more fish and game than non-Natives per capita and non-Natives harvest 2.5 times more fish and game by volume than Natives. (Kruse and Hollerman, 1991, p. 11) The State of Alaska's position attempts to disassociate the subsistence economy from a debate over indigenous rights. For example, in the Alaska Department of Fish and Game's technical paper entitled *Subsistence as an Economic System in Alaska: Theoretical and Policy Implications*, there is not a single use of either the word indigenous or Native. In the wider literature that debates the issues of sustainability in the North in general, the dominant view is that northern Native peoples have a "special relation with the environment" and should have "special rights." (Kakonen, 1992, pp. 238–239; Griffiths and Young, 1989, pp. 25–27) The local literature generated in Alaska neither universally shares this position nor does it address subsistence in terms of sustainability, but rather as a complex legal and political conflict. (Kruse and Hollerman, 1991; Morehouse, 1992)

In Alaska, the issue of subsistence has become an issue of who manages renewable resources—the federal government, the state government or the local users. Two new directions, "co-operative management (co-management) agreements" for the management of specific species among federal, state and local indigenous users and "traditional knowledge," a term that recognizes the contribution of local knowledge by indigenous people for resource management issues, may break the current deadlock by making local indigenous resource users participants in the system of resource management (Berkes, 1991, p. 12). Agreement reached by the Alaska Eskimo Whaling Commission and the US federal government on the management of bowhead whale hunting is often considered the model for such co-management. (Huntington, 1992, p. 125) Since the Alaska Eskimo Whaling Commission agreement's inception, similar agreements have been negotiated or planned for walrus, beluga and polar bears. (Huntington, 1992, pp. 122–125)

Although co-management and a system to incorporate indigenous knowledge in resource management would improve the current state of affairs in Alaska, this alone does very little to guarantee sustainability. First, single species management agreements run contrary to a sustainable ecosystem (multi-species and holistic environment) approach to resources management. Second, market driven forces from outside subsistence communities may erode any balance struck between the user and the resource. Modern subsistence users have a direct dependence on the cash economy for equipment associated with hunting and fishing (i.e., boats, snow machines and guns). Higher incomes give hunters a competitive advantage to succeed. In Southeast Alaska households with the highest income harvest the highest volume of fish and game resources. (Kruse and Holleman, 1991, p. 10) It therefore follows that:

> ... local control does not give any guarantees for sustainable development, not even for sustainable utilization of the local resources. Resources have to be used according to the demand and values mostly given by the non-Arctic actors. (Kakonen, 1992, p. 236)

This reality transcends the hunting and fishing economy and is true of the entire northern economy. Any economic development in the North, from resource exploitation projects to maintaining services for northern villages, requires large investment in infrastructure, equipment and organization and is usually beyond the means of the village or regional capital base. Therefore, state and federal government and outside private investment are inevitable actors in the economy of the North and the indigenous economy. The indigenous peoples in northern economies, in turn, are part of the global economy.

The indigenous economy is therefore more extensive and complex than is recognized by most literature that tries to adapt the concept of sustainability to the North. In Alaska, the concept of sustainability enters the local debate over the issues that face the indigenous people of Alaska and their northern economy, most in terms of biological sustainability of renewable resource. For the most part, a pragmatic legal and political approach seems to be the preferred agents of resolution to the issues facing the indigenous economy, even at the risk of creating an overwhelming complexity in the relationship between the government and the indigenous economy. The fact that Native people in Alaska adopt such a pragmatic approach and use market-generated options to deal with local issues makes a strong impression on people visiting Alaska from the Republic of Sakha.

7.6.2. Indigenous People and the Sakha Economy

One of the few justifiable re-allocations of economic rents within Sakha not directly based on comparative advantage is related to the traditional sectors of the economy (i.e., northern agriculture—herding, hunting and fishing). To genuinely promote social stability, and to prevent excessive urbanization it makes economic sense to sustain, enhance or revive existing traditional industries in rural regions. This prevents an army of the unemployed rural population from coming into urban centers, working briefly to develop

the base industry or an unsustainable subsidized industry and becoming displaced or caught in the urban areas with nothing to do after the base or subsidized industry collapses. (Tussing, 1995, personal communication) Therefore, targeted support of the traditional sectors is a mechanism to avoid the destruction of a regional economy and may even help revive the larger traditional cultural activities. The traditional sectors usually need only a small amount of redirected resources, relative to overall economic rents, to allow the economy's disconnected pieces to create vital sustainable linkages. This is also politically expedient since few people wish to be associated as being against cultural revival and this can be another way to put economic rents directly into the hands of the general population.

"Creating jobs is the main and radical method to fight unemployment," (Shtyrov, 1995, p. 48) and is a major feature of the Sakha government's economic plan through 2005. Simple job creation is not an example of social stability. Creating new jobs in industries that cannot function without subsidies is a way to aggravate future economic busts as subsidies evaporate in non-competitive industries and leave people trained with useless skills. What use are diamond cutters, after the diamonds have dried up? Supporting the traditional (subsistence or pastoral) economic sector can be consistent with an overall regional policy of rapid nonrenewable resource development within the framework of market reform.

In Sakha this sector is important to several indigenous rural people; the Sakha farmers (cattle and horse breeders) and the Even, Evenki, Chukchi and Yukagir reindeer herders who represent an important minority of the population. These are populations of people in Sakha who cannot easily leave the rural areas, even in the worst economic crisis. Most of the Russian and Ukrainian population still retain strong links to other parts of Russia and the former Soviet Union and could adapt to the job market by moving to another part of the country. Many of the indigenous people would find moving to any other part of Russia difficult. Even moving from the rural to urban areas involves significant change for people raised in a rural lifestyle.

Given a choice, people in northern rural areas prefer to remain based at home rather than have to travel throughout the region for employment. A study in Alaska showed that a maximum of 60 North Slope Borough Native people (about one percent of the NSB population) are working directly in the oil industry (in Prudhoe Bay and Kuparak), out of 8,000+ employees.[15] Borough government employment, on the other hand, is a huge percentage of the NSB workforce. This means a project the size of Prudhoe Bay (at least $12 billion of investment) enticed only 60 NSB residents as industry employees, or something on the order of $200 million of investment per oil industry job. (David Marshall, 1992)

The dual economy models describe the mechanism for development as a, "shift of labor from low-productivity subsistence activities to high-productivity modern sector activities." (Lewis, 1989, p. 1553) In general, the dual economy models, "stress the importance of productivity growth in the traditional food-producing sectors and in the export sectors, even though one basic mechanism of growth in the dual economy models is the inter-sectoral shift of resources from low- to high-productivity uses." (Lewis, 1989, p. 1557)

In Sakha, agriculture and subsistence activities are important to the local population. Until recently, the local people in Sakha have been excluded from the primary resource development, making up a small percentage of the primary labor force. Most indigenous people were kept, through the collective and state farm systems, in the agricultural sector. Some indigenous people were trained as government and communist party administrators or educated as scientists, teachers, artists, musicians and doctors.

Today, the agricultural sector remains one of the most important industries for the indigenous populations, but it also currently faces a steady contraction. Most of Sakha's labor force os in its primary resource development, as we have seen in Chapter 4, and is made up almost exclusively of migrants from other parts of the Soviet Union. Large-scale movement of Native people from the agricultural sector to the primary resource sector will probably result in few overall benefits to the indigenous people or the region. Specifically, I argue that an investment and labor policy that will assist the indigenous people still largely associated with agricultural activity to continue these activities is preferable to a policy that will promote movement of indigenous people into the primary resource labor pool. The costs of subsidizing retraining of indigenous agricultural workers, providing preferential treatment for local people, and the cost of social dislocation for the rural communities will, most likely, outweigh the benefits of maintaining the level of existing traditional agriculture. The Sakha government has currently adopted a contrary stance and is now promoting the training of local people in skills like diamond cutting. Demographic data also shows that there is a move from the rural areas to the urban areas as the Russians and Ukranians emigrate. This is likely to be rural Native people coming into urban areas to take urban based jobs.

Why Sakha insists on complex import substitution that is largely unachievable, like creating a diamond cutting industry, while ignoring marketing reindeer meat produced by indigenous people for the stores of the Sakha capital seems to be a principal contradiction in its overall proclaimed economic policy to support indigenous people. (Nikolaev, 1994, pp. 121–122) The concept of creating a set of criteria based on the development experience of areas like Alaska would have application for other areas of the former Soviet Union. Central Asia also faces many of the same issues that involve contradiction between the pastoral economy and potential or existing primary resource development, including examples like the Kazakhstan Tengiz oil project. A set of criteria for investing in pertinent import substitution projects would be a useful tool to evaluate government subsidy and development projects. The method could be a practical process to distinguish between profitable and wasteful investment. This is basically a method to distinguish between what Balassa calls the "easy" stage of import substitution and import substitution that leads to an inefficient allocation of resources. (Balassa, 1978, p. 181) In addition, the local region could provide a blueprint for indigenous local members of the traditional (subsistence or pastoral) sector who face inevitable rapid socio-economic changes, in a more equitable manner.

To end the classic Soviet colonial approach and reap the Alaska benefits for local and indigenous groups the region might include policies that help them obtain:

- a share of the resource revenue flow;
- a stake in the decision of how revenues should be distributed (e.g., spend money on clean drinking water and health care, rather than on abandoned or bankrupt unsustainable industries);
- a stake in management of renewable resources (local people decide for themselves the allocation and conservation of the renewable resources that they depend on for survival); and
- resolution of indigenous land claims and land ownership.

Linking the traditional economic sector with the primary resource sector would also have to include policies for the use of surplus economic rents with tools similar to the Alaska Permanent Dividend Fund to extend the benefits of primary resource development and channel windfall profits. Linking the traditional economic sector with regional primary nonrenewable resource development leads to a complementary approach for developing the two sectors, rather than the traditional confrontation between the sectors.

7.7. Lessons for Sakha's future development

The remote and peripheral regions of the former Soviet Union, although endowed with gifts of nature, have not been able to deal with the fundamental problem of capturing economic rents for the benefit of the region's population. Now as Russia tries to abandon the Soviet model of development, Alaska, a former colony of both Russia and the US, might provide a useful blueprint for regional economic development for the Republic of Sakha. Both economies share a common reliance on non-renewable resources, but Sakha and Alaska do not share a common standard of living for their population. Sakha, like Alaska relies on primary resources as the engine of development, would do well to look at Alaska's resource management and use of economic rents.

Bringing Alaska into this analysis is not an argument for Sakha to completely and unquestionably adopt the American or Alaska system. The point of the comparison is to analyze what might be conceptualized as two machines. One machine is well tuned and runs, while the other works poorly and bellows black smoke. What are the commonalities, if any, between the machines and how can understanding one machine allow you to "fix" the other?

There are certainly many ways to reform or build a successful economic system. There are also many ways that are guaranteed to bring about a general decline of welfare and to deny the regional population the gains from exploiting their resources. It is all too easy to tear down the Sakha-Alaska analogy on ideological grounds: that a history and tradition of socialist and capitalist development are so alien to one another that there can

be no commonalities. This has been the general argument to explain differences between the development of "remote" areas of Russia and North America. (Huskey and Morehouse, 1992) A common model of development about these two antipodes seems to result in a simpler and more adequate explanation than the popular notion of irreconcilable ideology and history. I will not let the final irony slip away, that until 1867, Alaska was under Russian domination. Therefore, it is appropriate to hypothesize: What if Alaska had remained under Russian control? What if parts of the Russian Far East had become part of the US?

An analysis of the Alaska economy is useful on many levels. First, it shows that sustained regional domestic growth begins to accelerate when the region and the center break the classic colonial arrangement, and significant economic rents remain in local or regional control. Until then the region does not have any way to address the chronic boom and bust economic growth cycles of resource development. Certainly as colonial regions, neither Alaska nor Sakha received any benefit in the long-term from the booms, or have any tools to mitigate or alleviate the harsh effects of a bust. For Alaska, the colonial relationship with the center broke only when Alaska became a state, an equal member of the federal union.

The methods of describing and evaluating social and economic development in Alaska are extremely useful in analyzing Sakha as Sakha and Alaska share economies that are explained by the staples theory. The cases of Alaska and Sakha suggest that a region must have at least partial control and discretion over the economic rents from resource development to accelerate growth. Second, the region must also have a world-class advantage in a particular resource that it can exploit.

Finally, Alaska is a good frame of reference to define boundaries as to what is possible and probable for economic growth and development in Sakha. Alaska, for the most part, has been pruned and directed in terms of development and growth possibilities by market forces. Market forces eliminated many planned development projects for Alaska, for example, an 800-mile gas pipeline, a massive hydroelectric project, and large scale agricultural development. Although Alaska had a fair share of wasteful spending (Jackstadt and Lee, 1994, pp. 8-12), the Alaska State government and the people of Alaska put together a remarkable fund that captured windfall resource rents from petroleum development and invested it in diversified investments outside of the State. In addition, the State of Alaska placed the responsibility for oil development and production into the hands of private companies, through a system of competitive leases. This shows that a region can maximize benefits without directly controlling development.

Sakha is an area only recently open to market forces. For most of this century Sakha was a colony to one of the world's largest centralized economies. Sakha's political leadership and population struggle with the dogged belief that determination and size will overcome inefficiencies and the constraints of market forces. For example, after the collapse of the Soviet national oil and gas industry, Sakha created a national oil and gas company to develop its world class petroleum resources, rather than rely on private enterprise. The

belief in its own ability and uniqueness, rather than simply purchasing the best available expertise on the world market, gives the Sakha government the rationale to continue to plan riskier development and growth. I have argued in this thesis that this development choice contributes to a greater likelihood of economic failure.

The principal objective of this thesis is to develop a comprehensive view of economic development in the Republic of Sakha. This leads ultimately to a discussion of a possible future development strategy for Sakha. Development strategy for a region depends on the initial conditions, such as resource endowments, and policy choices. (Chenery, 1989, p. 1537) The Republic of Sakha, as we have seen, has some recognized world class resources. Some of these resources are exploitable, despite difficult access to world markets, mostly due to the area's remoteness.

The revenue from Sakha's natural resource exploitation is relatively large for Russia if looked at on a per capita basis, as I do in Chapter 4 and the revenues are a significant enough portion of Russia's exports to interest the Russian federal government, as evident in Chapter 6. Sakha is well endowed with natural resources and is successful in resource production, but the Republic of Sakha has virtually no manufacturing, and what little manufacturing it has, with a few notable, but small exceptions like the Sakha furniture company, is bankrupt or heavily government subsidized. Surviving within a country that is going through major social and economic change, Sakha is left only with its resources and policy to secure economic stability and growth.

The Republic of Sakha's economy revolves around the diamond industry, an economy that can be considered an exaggerated case of base industry development and export-driven growth. Within the framework of the Russian national government, Sakha's power is based on its production of 99 percent of Russia's diamonds. Diamond revenue is also what stands between Sakha's relative stability and the economic ruin that threatens its neighbors, for example, the Chukotka Autonomous District. Chukotka's primary industry, gold and tin mining, is collapsing, with almost half of its mining areas shut down. Gold mining is down to less than three-quarters of 1990 production. (Minakir and Mikheev, 1995, p. 81) Chukotka rural villages have lost most of their outside economic support and demonstrate large scale social dysfunction including increased alcohol consumption, increased death rates, and collapsed social, economic and physical infrastructure. (Tichotsky, 1996, personal observation) We have seen that natural resource endowments are not sufficient for economic growth, so that Sakha's development strategy must also depend heavily on policy choices.

Comparative and historical studies are used extensively by economists to generalize patterns of development. Since there are examples of relatively successful development policy and strategy, it seems logical to try to understand the process of structural economic change and typologies of development experience that empirical study and comparative analysis have defined. As I have already pointed out, there is great doubt cast on whether there are any optimal initial conditions that guarantee future economic growth. For ex-

ample, Kravis notes that "[e]xport expansion did not serve [in] the nineteenth century to differentiate successful from unsuccessful countries. (Kravis, 1970, p. 850) This does not prevent case studies from being used as frames of reference and has definitely not stopped social scientists from trying to experiment with such generalizations. (Sachs and Warner, 1995a; Balassa, 1978; Barro and Sala-i-Martin, 1995) Sachs and Warner have established a pass/fail[16] system evaluating various political and economic variables and appropriate policies that helped poor countries' living standards to converge to those levels of richer countries. (Sachs and Warner, 1995a, p. 7)

Sachs and Warner have identified two factors, the degree into which property rights are developed and the integration of the country's economy in international trade (economic openness) as the two critical tests that give a clue whether a country is likely to "converge" with the living standards of the "rich" countries. (Sachs and Warner, 1995a) Although Sakha does pass the test in terms of international trade, it does not meet Sachs and Warner's standards on property rights.

Barro and Sala-i-Martin also attempt to compile a list of winning economies and losing economies based on social, political and economic variables that are likely to be found in poor countries whose GDP approaches the levels of richer countries. (Barro and Sala-i-Martin, 1995, pp. 414-461) In Barro and Sala-i-Martin's 1995 cross-sectional analysis, the role of natural resources are noticeably absent as variables. (Barro and Sala-i-Martin, 1995, pp. 414-461) This kind of comparison is not useful for Sakha since resources predominantly drive the economy.

In any case, when addressing development in the Republic of Sakha, while there are no conclusive standards against which to measure the Sakha economy's ultimate "success" or "failure," there are some clearly useful tools and frameworks currently available that offer clues to understanding the past and present condition of the Sakha economy. One major step in measuring economic performance for the Republic of Sakha is an evaluation of the overall economy, including per capita GDP, per capita output, and a broad look at other social and economic indicators. This is what I did in Chapter 4.

In addition, there is also evidence, from other case studies, that certain results will follow from specific policy implementations. A primary exporting economy has an identifiable set of development issues, discussions and experiences. In Chapter 3, I showed that the primary exporting economy framework is a superior tool for explaining the economic history of Sakha, and other similar northern regions within Russia, rather than the existing eclectic and contradictory account of development based only on the influence of the Soviet policy of autarky (self-sufficiency). Second, the study of primary exporting economies provides a framework within which to understand the relationship between the primary resource sector and the rest of the economy. The study of primary export economies provides a rich set of constructions that address development of primary exporters and adds a valuable collection of research that orders and evaluates case studies and identifies priority policy issues for countries and regions involved in primary resource production. (Findlay and Luhdahl, 1994;

Lewis, 1989) The concepts of economic rent, comparative advantage and import substitution, within the context of export-based theory, provides a system to evaluate and critique a region's major policy consideration. Specifically, existing cases of similar primary export economies provide a menu of possibilities for maximizing economic and social benefits, managing economic rents and addressing possible choices of resource allocation.

The Republic of Sakha is extremely outward-looking in its policy for diamond sales. Ironically, the Republic of Sakha is also considerably inward-looking on internal issues. As a part of Russia, the Republic of Sakha is tied up with Russia's restrictive trade policy that includes state monopolies on major exports. Sachs and Warner consider Russia a closed economy for this reason. (Sachs and Warner, 1995a, p. 22) Closed and inward-looking economies generally do not catch up with the living standards of richer countries of the world, the way open economies are observed to do. (Sachs and Warner, 1995a, p. 3) For any major resource development agreement with the Russian government, the Sakha government must negotiate whether to maintain direct management of the land, to transfer or lease the land into private ownership or to determine the legal regime under which the land may be used, including taxation rights. (Valliant, 1992, pp. 98-111) Generally, any deal with a foreign partner involves tailor-made Russian or Sakha legislation describing each project by name, since the existing legislation cannot provide adequate guarantees to the foreign investor. It is not surprising that no major foreign investment has been made in Sakha. Strangely, this was considered a badge of achievement by the Minister of Industry of Sakha, who at a meeting with a potential American foreign investor in 1993, bragged that "[a]ll the foreign investment, the Austrian $13 million dollar medical center, the $20 million plus Canadian model village project, all "hard [foreign] currency" projects are built on the money of the government. Not a single kopek of foreign investment was put into these projects." (Krasnoshtanov, 1993, personal communication)

Sakha may become more outward looking in its approach to trade as Sakha's experience with the diamond market develops or as Sakha develops plans to put its oil and gas deposits and coal deposits up for international investment and export. On the other hand, the Republic of Sakha may continue to do what I have argued is to mismanage the opportunities presented by its resource wealth, and continue expansion of its inward-looking policies.

Two concepts that are beginning to play a role in Sakha's development policy are issues of comparative advantage and import substitution. Sakha only has two major comparative advantages: the production of rough diamonds from world class deposits and potential world class gas deposits of interest to China, Japan and the Republic of Korea. Presently, the Sakha government and industry leaders are busy pursuing a policy of creating value-added production[17] and the Sakha government is currently investing much of its effort into economic red-herrings. For example, the Sakha government has lost as much as $5 million a year trying to develop a diamond cutting industry. (Teslenko, 1995, p. 70) At the same time, the Sakha government is not seriously pursuing viable industry development. For example,

Sakha is unable to secure even a medium-sized foreign investment in its diamond mining industry or oil and gas industry, even though Sakha generates several billion dollars of income a year. As Sakha pursues economic red-herrings, it also does not focus its efforts on simple import substitution that could save millions of dollars and create vital local industries and employment.

Many examples can be offered to illustrate Sakha's lack of interest in simple (easy) import substitution. Specifically, Sakha is delaying investment in a medium-sized oil refinery that could fulfill its internal needs for basic petroleum products. Instead, the management of the National Oil and Gas Company was seriously considering building a polyethylene extrusion plant in Sakha, a downstream process that demands access to large urban markets, and hundreds of millions of dollars. In addition, Sakha continues to import large amounts of foreign meat rather than develop the infrastructure to deliver reindeer, beef and horse meat from the rural villages to the urban centers.

The main reason for Sakha ignoring simple import substitution, but pursuing complex value-added production, lies in the incentive structure for the bureaucrats and industry leaders who control regional investment funds. The bureaucrats and industry leaders can not directly benefit from industry or enterprise profits. Simple schemes to save costs or generate revenue do not influence the rate of earnings or the benefits that bureaucrats and industry managers receive. Instead, more elaborate projects which generate work, political exposure and political control guarantee funding and government support. This is a the kind of behavior that could be classified as, "directly unproductive, profit [income]-seeking activity." (Bhagwati, 1982, pp. 989-990) Specifically, it is revenue-seeking behavior through unprofitable industry promotion, a modification of the revenue-seeking behavior through tariff protectionism described by Bhagwati. (Bhagwati, 1982, pp. 989-990)

Nevertheless, for all its faults, Sakha is doing considerably better than its neighbors. Sakha enjoys significantly higher growth rates, greater economic activity and better quality of life than the Chukotka Autonomous District, through a combination of better resource endowments, better geographic placement, better management of rents, and shrewder political leadership. At present, Sakha is competitive relative to other regions in Russia. The more complex issue of whether Sakha can continue to be competitive within a Russian economy that becomes fully integrated into the world economy remains unanswered.

The Sakha and Russian governments have already made one clear policy choice in the case of diamonds; that the diamonds should be exploited immediately, rather than letting the assets' value rise "in the ground." (Lewis, 1984, p. 159) This choice is one that is almost undisputed within Sakha and Russia. The Sakha and Russian governments are interested in maintaining a stream of revenue from the mining of diamonds, preferably at current or increasing levels. The issue that follows is whether the rent-seeking behavior (over diamond revenues) of the various parties in Russia and Sakha is an example of healthy competition within the system or, in the words of Sachs and Warner, "... a 'feeding frenzy' in which competing factions fight for the natural resource rents and end up ineffi-

ciently exhausting the public good." (Sachs and Warner, 1995b, p. 4) Certainly, as we have seen in Chapter 6, it is difficult to come up with any single conclusion at this point. In Alaska, the most successful tool in maximizing public interest, was to maximize public participation through programs like the Permanent Dividend Fund. Sakha's strategy, up to now, has been to keep information about economic rent away from public scrutiny.

Today, the diamond market is not a competitive market but is controlled by a cartel, with Sakha's 25 percent market share far from a price taker. For the present, Sakha can take advantage of a monopolist's profits. The fickle nature of the diamond industry, the extent of Sakha's supply and the probable future competition from Canadian diamonds, all make it clear that cash today is worth more than saving the resource for the future. With this in mind, the exploitation rate for Sakha's diamond resources must be done as quickly as possible, with the diamond flow managed to maintain cartel prices. Following that, the choices left for Sakha then remain how to use its revenues for current consumption or how to use revenues for the purchase of other capital assets or how to save revenues for the future. (Lewis, 1984, p. 159)

Being in a unique position as a commodity seller is not a new experience for Sakha. Earlier (1920s-1980s), Sakha controlled about a quarter to a third share of Soviet gold production. Gold in the USSR was internally monopolized, but acted as one of the most treasured lifelines, in export transactions in a large country with limited exports, to the point of becoming a fetish. In the 19th century, Sakha had some of the finest furs to offer the Chinese markets and sell on the famous St. Petersburg fur auction. In the future, if Sakha has the opportunity to export its natural gas, it will, for the first time, find itself in the position of a competitive price taker. Should a market be found for Sakha's natural gas it is likely that the Sakha and Russian governments will jump at the opportunity to export, unless there are drastic political changes. Taking into account energy decision-making in Japan, Korea and China, the opportunity to sell oil and gas may come soon.

Alaska's own experience with economic-base analysis, has shown the benefits and shortfalls of adopting this approach on a region of its kind. The approach for Alaska was extremely seductive, as Tussing *et al* point out:

> Alaska readily adopted the regional economic-base model during the 1970s because its elegantly simple core concept seemed to fit Alaska's simple, crude materials exporting economy almost perfectly. It provided an intuitively obvious explanation for almost every important facet of growth in Alaska. Even more importantly, perhaps, the emphasis on expanding basic industry led to a seemingly simple set of policy directions which, conveniently, could be used to justify spending the state's oil revenues on the very kinds of programs and projects that many local businessmen and political leaders would have been advocating.
>
> The notion that there are key industries that sustain everything else in a region is a powerful force for growth if it directs the leaders of a nation or state to seek out and exploit its **comparative advantages** [sic] in specific

> export industries—advantages that flow in the usual sense but might instead be a location, the character of the people or their political institutions. (Tussing, Huskey and Singer, 1983, p. I-1, I-2)

The obvious drawback of an export-based approach is when the export begins to run out or the world price falls below the marginal cost of production, as the authors note:

> Although economic-base analysis will continue to offer many useful insights about the state's economic prospects and policy choices, these insights will frequently be unwelcomed ones, and the model that generates them will have much less appeal to the popular imagination than it had in the 1970s. A multinational depression and a seeming end to the "energy crisis," accompanied by falling prices for oil and almost all other primary commodities, are conspiring to discredit the notion that universal resource-scarcity would soon set the world clamoring for a wide spectrum of Alaska commodity exports ... (Tussing, Huskey and Singer, 1983, p. I-3)

For Alaska, *ceteris paribus*, economic growth is not the likely future with the fall in world oil prices and diminishing oil production that peaked in 1988. Alaska is looking for a more elaborate understanding to guide its economic policy, particularly its fiscal policy for the years ahead, in order to maintain economic stability. Sakha may still be in a position to capitalize on the wealth of experience accumulated during Alaska's economic expansion.

The experience of both Alaska and Sakha argues for basing the economy on a regional export sector. It also adds credibility to the idea that trying to create "balanced growth" in a remote region such as Alaska and Sakha is unrealistic. (Bliss, 1989, p. 1193; Nurske, 1970, p. 363; Tussing, 1984, p. 52) Specific cases of import substitution do create sector growth independent of primary-led growth, but regional government intervention to create large-scale non-primary industry in Alaska led to disastrous results (i.e., agriculture). In Sakha, the introduction of market forces is crushing all but primary resource production, support industries and some economic activities that produce goods and services that act as simple import substitutes. The conclusion that seems to best fit both Sakha and Alaska is to focus on those industries which have a comparative advantage.

The evidence shows that the past development of Sakha's export economy was successful, especially in terms of most economic indicators, compared to other regions of the Soviet Union. Following the collapse of the Soviet Union, Sakha's export economy allowed Sakha to withstand the transition more effectively. Most of Sakha's economic and social per capita indicators, continue to signify a strong economy with a great potential for even greater growth and prosperity. Alaska shows that the benefits incurred from a strong single export resource, when they are wrested away from the colonial domination of the federal government and are well managed, can be distributed to benefit the population. Diamond revenues have been successfully secured by the government of the Republic of Sakha from the federal government. The next step is to ensure that these revenues are not squandered to re-create a society reminiscent of the USSR under a new-styled regional autocracy, but that they allow the public its opportunity for prosperity.

APPENDIX

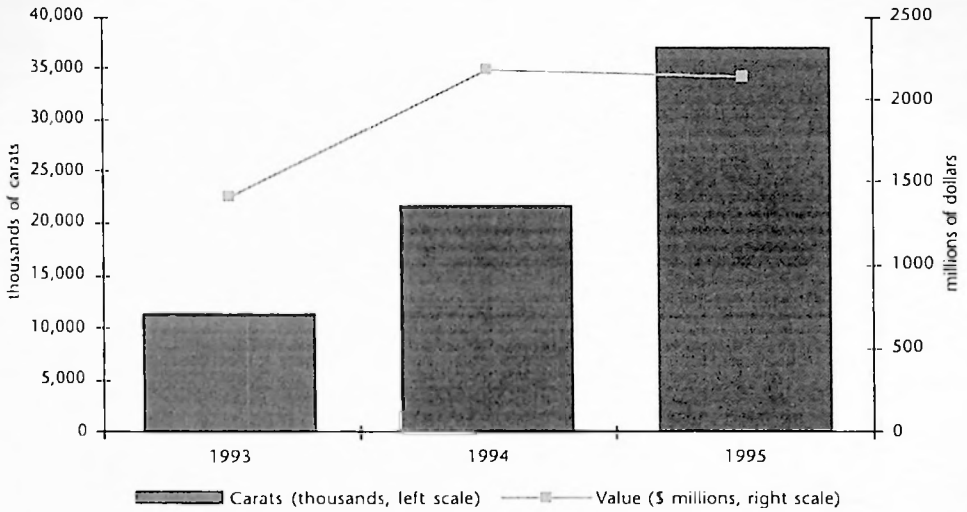
APPENDIX 1. ADDITIONAL INFORMATION ABOUT DIAMOND AND GOLD MINING

APPENDIX 1.1. DIAMOND PRODUCTION DATA

This discussion is related to the information presented in Chapter 2 Figure 2.2. According to unofficial information compiled by Russian Academy of Sciences and the National Center for Research on Diamond, Gemstones and Gold, Republic of Sakha, the current diamond production in Sakha is about 20 million carats, and about 20 per cent of this production are diamonds of gem quality. (Poiseev and Alekseev, 1989, p. 1) The National Center also states that Sakha diamond production peaked sometime between 1985 and 1987 at about 40 million carats (Poiseev and Alekseev, 1989, p. 1) and that in 1989, Sakha production fell to about half that amount to present levels. (Poiseev and Alekseev, 1989, p. 1) The information from the National Center is consistent with information published by the Russian Academy of Sciences which estimated Sakha's diamond production between 18 million carats (3.6 tons) to 30 million carats (5 tons) for the early 1990s (Minakir, 1993, p. 52) and is also consistent with a Russian business monthly which states that Russia currently mines 20 million carats. (Teslenko, 1995, p. 68) Western sources estimate Sakha diamond production at levels that are half as great for peak and current production. All sources, Russian and Western, agree with the general trend in production, a peak of production between 1985 to 1987, followed by a collapse of production to about half by 1991 to 1993 and a slight recovery for 1994 and 1995. Peter Miller, a Canadian diamond markets consultant, which were also quoted in *The Wall Street Journal* estimates current production at about 12 million carats, with about 20–25 per cent of the production classified as gem quality. (Miller, 1995, p. 4; Behrmann & Banerjee, 1995) This volume of production was also quoted in 1991 by Leonid Gurevich, the current deputy head of the Committee of Precious Metals. (Gendlin, 1993, p. 9) At the time of the interview Mr. Gurevich was in the Russian Parliament as the Chairman of the sub-committee for foreign economic affairs. One journalist claims that Russia's diamond production peaked in the 1980s at 22 million carats and that 1994 output was 12 million carats with 25% of which were gemstones. (Fuhrman, 1995)

In short, either, the lower estimates made by Western analysts, generally accepted and supported by announcements made by Leonid Gurevich, an official government representative are correct, or, alternatively, the higher figures, quoted by some Russian sources, are correct and all the Western analysts are off by a factor of two. The existence of estimates that are so far apart is itself an interesting situation. The significantly higher reported Russian figures may be the *desired* planned production figures, rather than the actual production figures. This was not unusual for resource statistics published during the Soviet period. Another possibility is that the higher or lower estimate may be an underhanded

attempt to spread disinformation, so that the West continues to be unsure about their estimates of Russian diamond stockpiles and Russian production. It may be that some of the various estimates are simply echoing unfounded rumor. In any case, the general secrecy on the part of the Russian government and industry makes it difficult to determine with any certainty Russian diamond production.



Appendix 1.1. The value and volume of Russian diamond exports as reported by the Russian government statistical office. (Source: LSE, various years)

Appendix 1.2. Sakha diamond mines

The future of Russian diamond production certainly depends on what will be done with the current mines in operation. Appendix 1.2. is a summary of information about the chief diamond bearing kimberlite pipes and describe their current status. One kimberlite pipe, Udachnyy, is responsible for 80–90 per cent of all diamond production. The general state of four of the pipes show an indication of near exhaustion, decline in production or interrupted production. One mine is currently flooded and barely operable (Mir pipe and its satellite pipe, Sputnik), two kimberlite pipes are about to be exhausted of diamonds (Sytykan, Aikhal pipe), and one is exhausted of diamonds (23rd Party Congress). The International pipe has the richest grade estimate (carats of diamonds per ton of rock ore processed) of any kimberlite pipe in production. Plans to start production of the Yubilenaya pipe in 1996, seem to be delayed because of lack of funds. The Sakha diamond industry and the Sakha government are extremely hopeful that the March 1994 discovery of a new diamond bearing kimberlite pipe called the Botuobin Pipe will save the industry. (Teslenko, 1995, p. 2) The pipe is 180 km northeast of Nyurba "... on the left bank of the Makha river at a watershed between the Khania and Nakyn rivers." (BBC, 1996, 23 February) The pipe

may contain a large amount of high quality diamonds and is considered to have the richest grade estimate of any Russian pipe (carats per ton of rock ore processed) (BBC, 1996, 23 February and BBC, 1996 19 January) Botuobin kimberlite pipe has a grade estimate of between 600 to 1000 carats of diamond per 100 tons of rock and described it as twice that of International pipe. (BBC, 1996 19 January) This would make Botuobin kimberlite pipe extremely rich per unit of kimberlite ore. For comparison, the new and highly productive Jwaneng mine in Botswana produced about 130 carats per 100 tons of ore and South African mines (non-placer) produce grades from 6.9 to 136.4 carats per 100 tons, with the mid-range mines like the Finsch and Premier producing 49.3 and 44.6 carats per 100 tons, respectively. (Ogilvie Thompson, 1995, p. 26) The project is said to be a priority development project for the Sakha diamond industry. (BBC, 1996, 23 February; BBC, 1996 19 January) The Botuobin may produce as many as 12,000 to 40,000 carats of diamonds a year, if it comes on line. (BBC, 1996, 19 January) The lower estimate of 12,000 carats would raise Sakha's current diamond production from 50 to 100 per cent. If Russia and Sakha fail to begin production from either the Yubileinyy pipe or the Botuobin pipe then Russian sales in diamonds will likely begin to fall, or Russia will deplete its reserves significantly. Development of the newly discovered Botuobin is not likely to commence for several years.

Name of COK	English Meaning of Name	Location	Production Facilities	Number of Kimberlite Pipes with Diamonds	Pipe Name	English Meaning	Year of discovery	Year of operation	Grade estimates (carats per 100 tonnes)	Annual production of ore processed, average production-1980-1989 (tonnes)*	Average annual production of diamonds average production-1980-1989 (carats) *	Production, estimate for 1995 (carats)***	Surface area	Current maximum depth (meters)	Comments	State of Pipe
Mirnyy COK	Peace	Mirnyy City		3 out of 11												
			No. 3 & No.5		Mir	Peace	1955		150 average	3,000,000	6,000,000		6.9 hectares	340	Produced some of the best and largest diamonds in top layer of pipe	Pipe badly flooded and under repair, planned underground mine at 600 meters, but may be abandoned
					Sputnik (satellite pipe of Mir)	Satellite	1959				0					Probably inoperative
			No. 201 & 202 dredges		International-nainaya	International	1969	1971-1980	300-500* or 1100**		< 200,000		1.7 hectares	260		Declining operation, underground mine being built to restart operation, shafts planned to 1250 meters
					XXIII Sezd KPSS	XXIII Congress of the Communist Party	1959	1966-1971 (?)	600		< 200,000		54 x 30 meters	124		Unknown, likely stopped production
Udachnyy COK	Lucky	Udachnyy Town														
			No. 11 & No. 12	1 out of 56												
			No. 9 experimental		Udachnyy double pipe	Lucky	1955		120	12,000,000	14,400,000	10,500,000-11,800,000		450 (west), 300 (east)		Operating, 80-93% of Sakha production, largest producer 12 million tonnes of ore milled annually
Aikhal COK	Glory (from Sakha)	Aikhal Town	No. 8	3 out of 40												
					Aikhal	Glory (from Sakha)	1960	1962	100	1,500,000	600,000	350,000	3 hectares	240	Closed during 1980-88	Near exhaustion, plans to modernize
					Sytykan	Sharp (from Sakha)	1955	1979	60	1,000,000	600,000	500,000	6 hectares			Decline, near exhaustion
Yubileynyi COK	Jubilee		none operating		Yubileinaya	Jubilee	1975				0	**600,000**	40 hectares		70-110 meters of overburden	Not yet producing, plans to start production in 1996 are likely delayed
Other Pipes				?					Miller			Green				
					Boutobin				600-1000						May be pipe with richest ore grade, with expected production of 12 to 40 million carats	Newly discovered, not yet in operation, promised production in 1996 is highly unlikely
					Sputnik											
					Zaritsa	Dawn	1954								First pipe ever discovered, no commercial value?	Never in operation (?), not in operation, no plans known
					Krasnopre-mineskaya	Place name	1984								60-115 meters of overburden	Never in operation (?), not in operation, no plans known
Placer operations																
					Ebelyakh											
					Dredging down stream of Mir			1957-1980								
					Associated Udachnyy			1957								
					-Total alluvials						600,000					

Source: NWT, 1995 (appendix, McGee, 1995, pp. 22-27, Dowd, Green & Lochman, 1996, p. BBC, 1996, 19 January, BBC, 1995, 9 June

* Low estimate
** BBC estimate
*** Dowd, Green & Lochman estimate
According to the Russian Academy of Sciences, the Republic of Sakha (Yakutia) processes kole kimberlite deposits containing an average of 42 carats per 100 tons and placer deposits that contain and average 182 carats per 100 tons. (Minaev, 1993, p. 32) This is lower than other estimates of ore grade

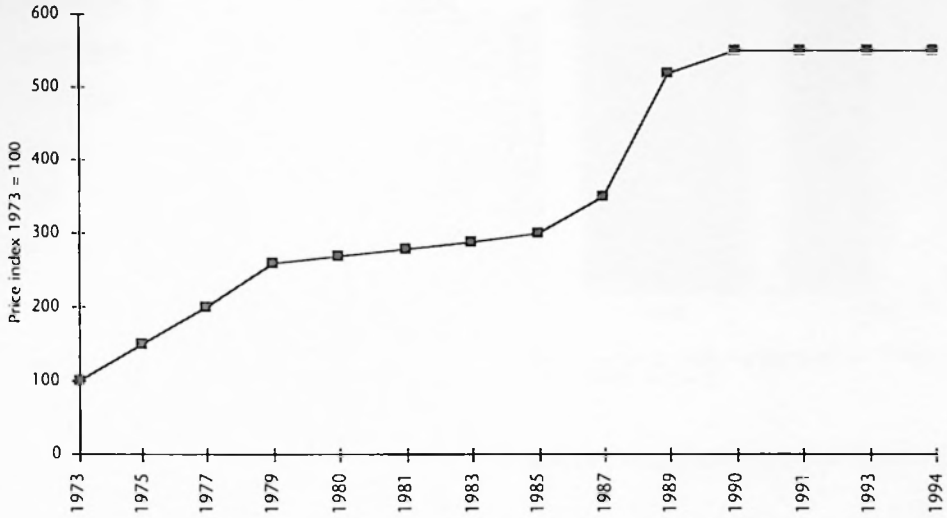
Appendix 1.2. Summary information about the chief diamond bearing kimberlite pipes and their current status.

In addition to the open pit method, the kimberlite pipes can be mined underground. At present, there are no operating underground mines. The existing Russian diamond mines will have to move to underground mining methods to maintain production. (Andy Lamont (De Beers), 1996, February, personal communication). This will require additional investment in the hundreds of millions of dollars.

Sakha also produces some placer diamonds in areas near existing diamond pipes and at Ebelyakh in the north of Sakha, primarily with the use of dredges. (Shishigin, 1994,

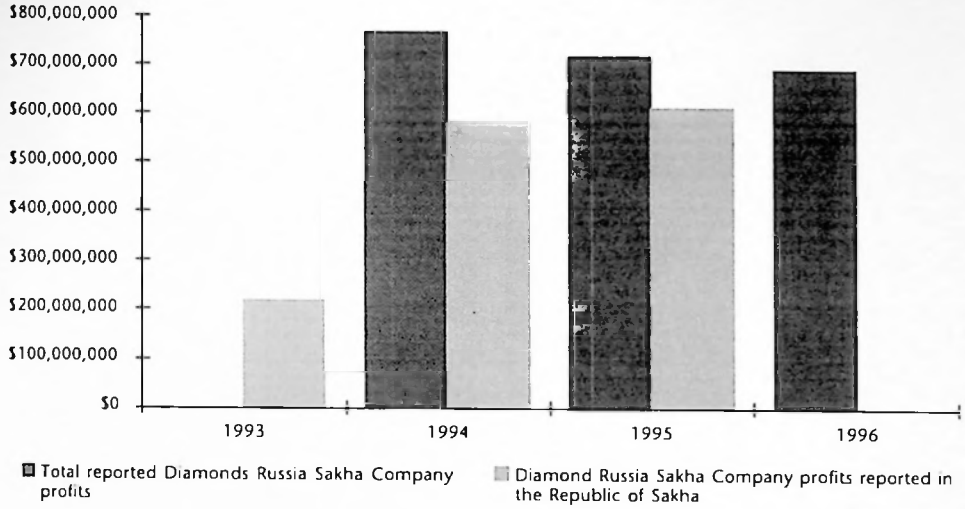
p. 3) The Ebelyakh placer mining is in operation and is planned to continue until 2015. (BBC, 1995, 16 June)

Appendix 1.3. Diamond Prices



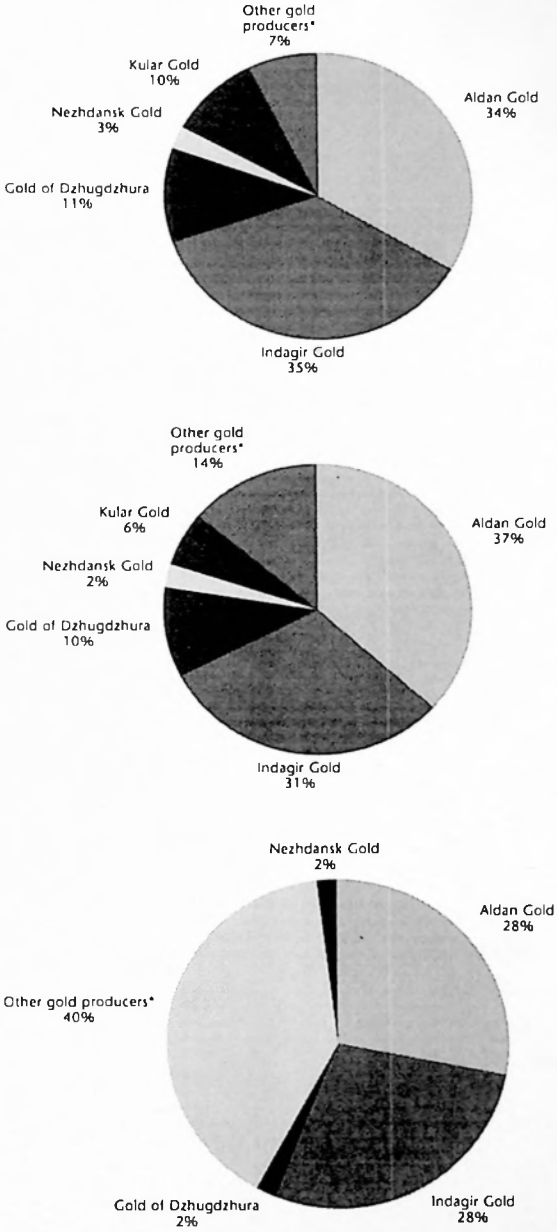
Appendix 1.3 Diamond price index as measured by De Beers. According to De Beers diamond prices have not decreased in at least the 25 years. (Source: Behrmann and Banjerjee, 1995)

APPENDIX 1.4. DIAMONDS SAKHA RUSSIA PROFITS



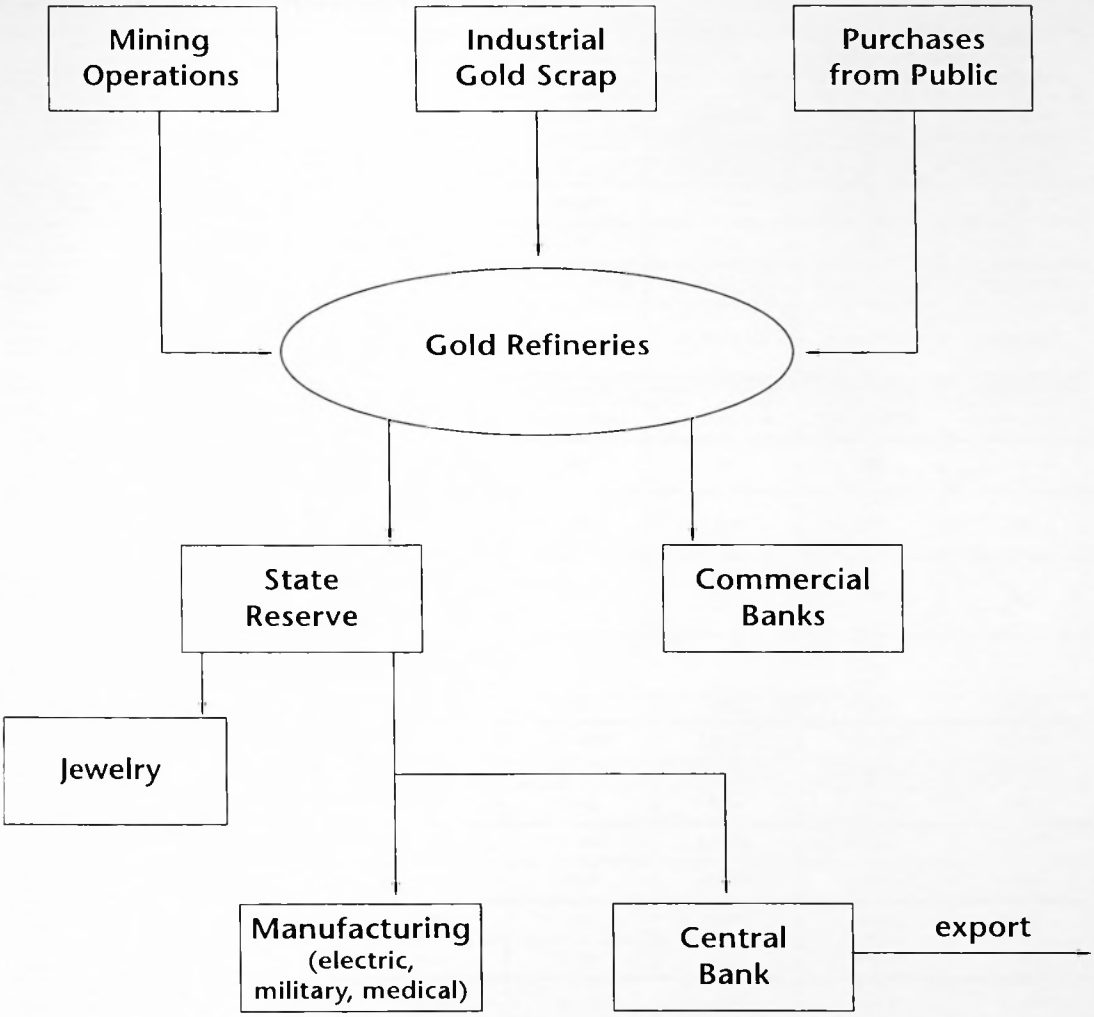
Appendix 1.4. Diamond Sakha Russia profits. (Source: Goskomstat-Sakha, various years; Reuters, various years)

APPENDIX 1.5. GOLD DISTRIBUTION BY PRODUCER IN SAKHA 1993–1995



Appendix 1.5. Changes in gold distribution within Sakha.
Gold production was between 27.2 and 33.4 tons in 1993; between 23.6 and 30.0 tons in 1994; and about 27 tons in 1995. Economic changes have increased the role of independent producers. Some of the independent producers rely greatly on government support.

Appendix 1.6 Structure of the Russian Gold Industry



Source: Guseinov, 1995, p. 85

Appendix 2 Sakha GNP, industrial output, population, income, expenditure with Russian comparison

	1990	1991	1992	1993	1994	1995
Republic of Sakha Gross Domestic Product (GDP) (current rubles)	R 3,725,700,000	R 11,710,997,442	R 335,700,000,000	R 2,517,241,379,310	R 9,158,000,000,000	R 20,210,000,000,000
Republic of Sakha Gross Domestic Product (GDP) (current dollars)	$ 620,950,000	$ 65,061,097	$ 808,915,663	$ 2,018,637,834	$ 2,579,718,310	$ 4,355,603,448
Russia GDP (current rubles)	R 644,000,000,000	R 1,400,000,000,000	R 19,000,000,000,000	R 171,500,000,000,000	R 611,000,000,000,000	R 1,655,000,000,000,000
Russia GDP (current dollars)	$ 107,333,333,333	$ 7,777,777,778	$ 45,783,132,530	$ 137,530,072,173	$ 172,112,676,056	$ 356,681,034,483
Average ruble/dollar exchange rate. Source: Goskomstat N LSE (various years)	R 6.00	R 180.00	R 415.00	R 1,247.00	R 3,550.00	R 4,640
Sakha GDP as a percent of Russia GDP (percent)	0.58%	0.84%	1.77%	1.47%	1.50%	1.22%
Republic of Sakha GDP (adjusted 1995 rubles)	No information	R 31,326,801,330,991	R 24,121,637,024,863	R 22,433,122,433,122	R 20,414,141,414,141	R 20,210,000,000,000
Republic of Sakha GDP (1995 dollars=1995 rubles/4,640 ruble/dollar exchange rate)	No information	$ 6,751,465,804	$ 5,198,628,669	$ 4,834,724,662	$ 4,399,599,443	$ 4,355,603,448
Russia GDP (adjusted 1995 rubles)	R 2,696,643,830,411,310	R 2,561,811,638,890,750	R 2,177,539,893,057,130	R 1,981,561,302,681,990	R 1,723,958,333,333,330	R 1,655,000,000,000,000
Russia GDP (1995 dollars=1995 rubles/4,640 ruble/dollar exchange rate)	$ 581,173,239,313	$ 552,114,577,347	$ 469,297,390,745	$ 427,060,625,578	$ 371,542,744,253	$ 356,681,034,483
Sakha real GDP, percent change from previous year. Source: Sakha government	No information	No information	-23%	-7%	-9%	-1%
Russia real GDP, percent change from previous year. Source: Russian government (adjusted in 1996 by Russian government from LSE, 1996)*	No information	-5%	-15%	-9%	-13%	-4%
Russia real GDP percent change from previous year. Source: Russian government (unadjusted, published in 1995 by Russian government from LSE, 1995)*	No information	-13%	-19%	-12%	-15%	n/a

	1990	1991	1992	1993	1994	1995
Republic of Sakha population (persons)	1,098,900	1,108,600	1,092,500	1,073,800	1,060,700	1,033,300
Russian population (persons)	148,542,700	148,704,300	148,624,700	148,673,400	148,366,000	148,306,000
Sakha population as a percent of Russian population (percent)	0.74%	0.75%	0.74%	0.72%	0.71%	0.70%
Republic of Sakha GDP per capita (current rubles)	3,390	10,564	307,277	2,344,237	8,633,921	19,558,695
Russian GDP per capita (current rubles)	4,335	9,415	127,839	1,153,535	4,118,194	11,159,360
Republic of Sakha GDP per capita (current dollars)	$ 565	$ 59	$ 740	$ 1,880	$ 2,432	$ 4,215
Russian GDP per capita (current dollars)	$ 723	$ 52	$ 308	$ 925	$ 1,160	$ 2,405
Republic of Sakha GDP per capita (adjusted ruble values calculated as 1995 dollars)	No information	$ 6,090	$ 4,758	$ 4,502	$ 4,148	$ 4,215
Russian GDP per capita (adjusted ruble values calculated as 1995 dollars)	$3,912	$3,713	$3,158	$2,872	$2,504	$2,405
Republic of Sakha industrial output (current rubles)	R 3,975,000,000	R 10,276,000,000	R 229,511,000,000	R 1,889,253,000,000	R 5,369,144,000,000	R 12,225,000,000,000
Republic of Sakha industrial output (current dollars)	$ 662,500,000	$ 57,088,889	$ 553,038,554	$ 1,515,038,492	$ 1,512,434,930	$ 2,634,698,276
Sakha industrial output as per cent of Sakha GDP	107%	88%	68%	75%	59%	60%
Russia industrial output (current rubles)	R 556,000,000,000	R 1,183,000,000,000	R 16,135,000,000,000	R 109,423,000,000,000	R 310,981,000,000,000	R 867,795,000,000,000
Russia industrial output (current dollars)	$ 92,666,666,667	$ 6,572,222,222	$ 38,879,518,072	$ 87,748,997,594	$ 87,600,281,690	$ 187,024,784,483
Russia industrial output as per cent of Russia GDP	86%	85%	85%	64%	51%	52%

	1990	1991	1992	1993	1994	1995
Sakha real industrial output percent change, Source: GOSKOMSTAT-Sakha (various years)	1%	-8%	-20%	-5%	1%	2%
Russia real industrial output percent change from previous year, Source: Goskomstat and LSE (various years)	0%	-8%	-19%	-16%	-23%	-3%
Republic of Sakha industrial output per capita (current rubles)	R 3,617	R 9,269	R 210,079	R 1,759,409	R 5,061,887	R 11,831,027
Republic of Sakha industrial output per capita (current dollars)	$ 603	$ 51	$ 506	$ 1,411	$ 1,426	$ 2,550
Russia industrial output per capita (current rubles)	R 3,743	R 7,955	R 108,562	R 735,996	R 2,096,040	R 5,851,382
Russia industrial output per capita (current dollars)	$ 624	$ 44	$ 262	$ 590	$ 590	$ 1,261
Average exchanged rate used (rubles per 1 dollar)	R 1.17	R 2.66	R 41.58	R 409.14	R 1,647.13	R 4,640
Republic of Sakha gross foreign earnings (current dollars)	No information	No information	No information	$ 1,564,684,800	$ 2,344,600,000	$ 2,380,414,000
Republic of Sakha gross foreign earnings, per capita (current dollars)	No information	No information	No information	$ 1,457	$ 2,210	$ 2,304

	1990	1991	1992	1993	1994
Personal income (current dollars)	$ 710	$ 295	$ 384	$ 893	$ 1,743
Personal expenditure (current dollars)	$ 628	$ 249	$ 236	$ 747	$ 1,304
Income MINUS expenditure (current dollars)	$ 82	$ 46	$ 148	$ 146	$ 438

SOURCES: GOSKOMSTAT-Sakha (various years) and LSE (various years)

APPENDIX 3: SAKHA EXPORTS

1993			
	Quantity	Unit	Value ($)
Raw diamonds	*	*	$ 1,418,000,000
cut diamonds	444	carats	$ 370,000
coal (anthracite)	3.0195	million metric tons	$ 141,048,000
tin	0		$ 0
antimony concentrate	0		$ 0
forest products	14.8	thousand cubic meters	$ 955,000
ship rental	*	*	$ 2,763,000
fur and leather	63000	items	$ 128,000
reindeer horn	695	kilogram	$ 54,000
reindeer hard horn	0		$ 0
metal pipes & bars, scrap metal	*	*	$ 570,000
Equipment, cars, trucks	*	*	$ 591,000
other	*	*	$ 205,800
		TOTAL EXPORTS	$ 1,564,684,800

*information not available

1994			
	Quantity	Unit	Value ($)
Raw diamonds	21,586	thousand carats	$ 2,179,000,000
cut diamonds	*	*	*
coal (anthracite)	3.6	million metric tons	$ 148,000,000
tin	0		$ 0
antimony concentrate	0		$ 0
forest products	39	thousand cubic meters	*
ship rental	*	*	$ 7,387,000
fur and leather	*	*	*
reindeer horn	2800	kilograms	*
reindeer hard horn	0		$ 0
metal pipes & bars, scrap metal	*	*	*
Equipment, cars, trucks	*	*	*
other			$ 10,213,000
		TOTAL EXPORTS	$ 2,344,600,000

*information not available

1995			
	Quantity	Unit	Value ($)
Raw diamonds	36,951	thousand carats	$ 2,139,000,000
cut diamonds	*	*	*
coal (anthracite)	4.9	million metric tons	$ 212,385,000
tin	639	metric tons	$ 3,502,000
antimony concentrate	4520	metric tons	$ 3,895,000
forest products	1.5	thousand cubic meters	$ 158,000
ship rental	*	*	*
fur and leather	*	*	$ 70,000
reindeer horn	2545	kilograms	$ 358,000
reindeer hard horn	62439	kilograms	$ 487,000
metal pipes & bars, scrap metal	373	metric tons	$ 158,000
Equipment, cars, trucks	*	*	*
other			$ 20,401,000
		TOTAL EXPORTS	$ 2,380,414,000

*information not available

Appendix 4: Additional information about Oil and Gas production

Natural gas reserves

Sakha Oil & Gas Company resource and reserve estimates		
Potential gas resource	12 trillion cubic meters	424 trillion cubic feet
Estimated gas resource	9.2 trillion cubic meters	325 trillion cubic feet
Of which, dissolved and associated	805 billion cubic meters	28.4 trillion cubic feet
Proved, probable & indicated reserves (A+B+C1+C2)	1302 billion cubic meters	46.2 trillion cubic feet
Khartukov reserve estimate		
Proved, probable reserves (A+B+C1)	959 billion cubic meters	33.9 trillion cubic feet
Proved, probable & indicated reserves (A+B+C1+C2)	1334 billion cubic meters	47.1 trillion cubic feet
Total gas production, Republic of Sakha		
gas production, 1992	1634 million cubic meters	158 million cubic feet/day
cumulative production through year-end 1994	22.6 billion cubic meters	798 billion cubic feet

Oil gas reserves

Sakha Oil & Gas Company resource and reserve estimates		
estimated crude-oil in place	9 billion tonnes	64 billion barrels
Estimated recoverable crude oil	2.6 billion tonnes	19 billion barrels
Discovered in place, Botuba province (A+B+C1+C2)	1092 million tonnes	8.0 billion barrels
Proved, probable & indicated reserves (A+B+C1+C2)	255 million tonnes	1.9 billion barrels
Khartukov reserve estimates		
Proved & probable oil in place (A+B+C1)	438 million tonnes	3.2 billion barrels
Proved, probable &indicated oil in place (A+B+C1+C2)	1106 million tonnes	8.1 billion barrels
Proved & probable crude-oil reserves (A+B+C1)	132 million tonnes	1.0 billion barrels
Proved, probable & indicated reserves (A+B+C1+C2)	262 million tonnes	2.0 billion barrels
Total oil production, Republic of Sakha		
oil production, 1992	50.3 thousand tonnes	1 thousand barrels/day
cumulative production through year-end 1994	324.3 thousand tonnes	2.4 million barrels

Condensate

Condensate Resources and Reserves, to 1992		
Estimated condensate in place	0.36 billion tonnes	4 billion barrels
Of which, proved probable & indicated (A+B+C1+C2)	25 million tonnes	295 million barrels
Gas condensate production, Republic of Sakha		
gas condensate production, 1994	77.6 thousand tonnes	1 thousand barrels/day

Appendix 4.1. Various reserve estimates for the Republic of Sakha.

K.W. Paik Comparison		UN Expert group		
US	CIS			
Proved (measured)	A+B+ C1 (partly)		Proved	A,B
Probable (indicated)	C1 (partly)	Discovered Resources	Incremental Less Certain	C1
Possible (inferred)	C1 + C2 (partly)		Incremental Least Certain	C2,D1
Hypothetical (undiscovered)	C2+D1 (partly)	Undiscovered		D2
Speculative (undiscovered)	D2			

Appendix 4.2. A comparison North American reserve estimate classifications and Russian classifications.

The Russian oil industry evaluates gas and oil reserves differently than the western conventions (US and Canada). Several comparisons of the systems exist. According to Khartukov,

> For the rule-of-thumb comparisons, Russia (ex-Soviet) reserve ... Category A + B corresponds to proved reserves ... category $C_1 + C_2$ to probable and partly possible reserves. Explored recoverable reserves in Russian classification (category $A + B + C_1$) roughly correspond to the sum of the proved and a part of probable reserves as they are understood in the US petroleum industry. (Khartukov, 1994 , p. 59)

This corresponds roughly to the interpretation of Keun-Wook Paik, who recently completed an elaborate study of the potential of gas and oil development in Northeast Asia, and a 1971 United Nations expert group. Both Paik's and the UN expert groups' comparisons of classifications are summarized in Appendix Table 4.2. The difference in the evaluation of reserves between the former Soviet Union and North America analysis adds to the general confusion of Westerners studying, working or interested in the Russian oil and gas industry.

ENDNOTES

CHAPTER 1

[1] Formerly known as the Yakut Autonomous Soviet Socialist Republic or Yakut A.S.S.R., until the fall of the Soviet Union. Before 1923, the region was known as Yakutia.

[2] One-fifth of Russia's territory.

[3] Sakha's development scenario compares closely to "Bercia," the made-up case study in Roemer and Stern's textbook on *Case Studies in Economic Development*. (Roemer and Stern, 1981)

[4] "Russians" in this case is used to refer to people from the Russian Federation or the former Soviet Union and not necessarily not ethnic Russians.

[5] The Russian orthography in this thesis is primarily a hybrid system of transliteration that combines the best features of the United States Board on Geographic Names, the Library of Congress and one that is introduced in *Soviet Natural Resources in the World Economy*, (Jensen, Shabad and Wright, 1983, p. xix). The Russian orthography is inconsistent in cases where a quotation used a different orthographic system, where the original drawings or base maps used a different system, or where I have adopted the most common spelling for a particular place name or term. The main difference will occur with the Russian letters "**ы**" and "**й**." In most cases, I prefer the letter "y" to represent these Russian letters rather than "i." I have used the combination "ye" for the letter "e," in cases when a word is pronounced in that way in Russian.

The main goal, wherever possible, is to decrease the confusion for the non-Russian speaker. With this in mind, I have Anglicized most Russian place name spellings, dropping Russian adjectival endings. In most cases, I use English translations of company and ministry names.

CHAPTER 2

[1] Since the Russian drive eastward in the 16th century, Russian territory east of the Ural mountains was known as Siberia. During the Russian Civil War the area along the Pacific coast, including Yakutia, became an independent "Far Eastern Republic" (1917-1922). Under the Soviets it was referred to as the Soviet Far East. This area is now known as the Russian Far East and has became one of Russia's economic regions. Now, Siberia, only refers to that area east of the Ural mountains stopping at Sakha's border in the north and Amur Province's border in the south. Some Russian and Western texts occasionally include Yakutia within East Siberia.

[2] Geologists looking for diamonds have worked in Sakha since the 1940s. There are several geological interpretations as to how many geological regions make up the Sakha diamond "province" (from 9 to 15).

[3] This is 667 times current coal production.

[4] This is 225,000 times current coal production.

[5] This is 100 percent of Russia's total antimony production or 12,000 tons.

[6] This is 33 percent of Russia's total tin production.

[7] Within the Republic of Sakha there are estimates of 8.8×10^9 (billion) to 18.9×10^9 (billion) tons of iron.

[8] Tungsten is a by-product of tin mining.

[9] Exploration Maxus Energy Corporation of Dallas and OMV AG of Austria have created joint ventures for exploration. (Thompson and Matveev, 1994a, p. 71) A UK firm, Intera Information and Technology, has prepared a geophysical and geographic data base packet with the Sakha Oil and Gas Company and their geophysical service subsidiary. (Thompson and Matveev, 1994a, p. 71 and *Petroleum Economist*, 1995) Intera also organized a sale of oil and gas exploration permits on behalf of the Sakha Oil and Gas Company in Japan. (*Petroleum Economist* ,1995) The most recent activity involves a drilling contract with Exxon, using Korean money, and is connected with a feasibility study for a Sakha-Japan pipeline. (Tussing, 1996, personal communication)

[10] Information about Sakha's estimated reserves of oil, gas and gas condensate is summarized in Appendix 4, from two separate sources, the Sakha Oil and Gas Company and the information compiled by Evgeniy Khartukov, a Moscow energy economist.

[11] Specifically Japan, Korea and China.

[12] ING Barings estimates 102 million tons of natural gas a year measured as oil equivalent. Areas that would have a demand for natural gas include Japan, Korea and China. The actual and potential suppliers include: Qatar, Oman, Yemen, Indonesia, Malaysia, Papua New Guinea, Australia, Alaska, Sakhalin and Sakha. (Stewart, 1995, p. 29)

[13] About 125.5 million hectares (about 310 million acres).

[14] About 86 percent of all tree-cover.

[15] About 6.3 percent of all tree-cover.

[16] About six cent of all tree-cover.

[17] Sable, fox and squirrel.

[18] Sakha has more than 800 discovered kimberlite pipes, of these pipes only about 150 contain any kind of diamonds, but only 14 kimberlite pipes have commercially exploitable quantities. (Shishigin, 1994, p. 3) Of Sakha's 14 kimberlite pipes with commercially exploitable quantities of diamonds, only seven kimberlite pipes have produced diamonds. For comparison, there are only 15 other major kimberlite pipes producing diamonds in the world. Ten kimberlite pipes operate in South Africa, 3 pipes in Botswana, including the new Jwaneng Mine described as "a gem in the world of gems," (Gooding, 1994, September 6) and one each in Zaire and Tanzania. There is one lamporite (a diamond bearing ore that does not form cones) deposit in Australia. Presently, only three or four kimberlite pipes in Sakha are in operation. These three or four pipes produce somewhere between 15 and 30 percent world market share of production, by value.

[19] The dollar estimate was given by the source.

[20] The companies operate the production plants where gold, tin, tungsten or silver ore undergo concentration. This concentration, technically known as benefaction, is an intermediate process for aggregating metallic ore before final smelting and refining. No smelting or refining occurs in Sakha and Sakha's concentrates are sent either to Siberian or Moscow refineries. Sakha claims to be planning to begin tin refining, but tin mining is in shambles.

[21] Three areas in north and northwestern Sakha have been offered for possible exploration in 1994 by the Sakha Oil and Gas Company (Munsky Uplift, Sappyisk Projection, Anabar-Khatang Saddle). (Sakha Oil and Gas, 1994)

[22] I have been unable to find detailed information on all 30 deposits.

[23] Gas condensate, contains "heavy" gas hydrocarbons (propane, butane, pentanes), that are kept track of separately in the Russian statistical bulletins.

[24] Sredne-Vilyuisk, Mastak, Sredne-Botuobinsk and Severo-Nelbinsk.

[25] Sredne-Botuobinsk.

[26] Kysyl-Syr village to the city of Yakutsk 458 kilometer (285 miles) of 500 millimeter diameter pipe or about 20 inch diameter pipe; Yakutsk to Pokrovsk, another 82 kilometers (51 miles) of 250 mm diameter pipe or about ten inch diameter, and 45 kilometers (28.5 miles) from Pokrovsk to Yelanka through Bestyakh of 100 mm or four inch diameter pipe.

[27] Five hundred millimeter diameter pipe or about a 20 inch diameter pipe

[28] I heard an unconfirmed rumor that the actual line "blew up" in 1992 and has only recently been repaired. Map 2.4. shows the major gas pipelines in Yakutsk in addition to the oil and gas areas of the Republic of Sakha.

[29] See discussion about Yakut cows in Chapter 3.1.

[30] Population estimate in the beginning of 1996 was 1,023,000 people.

[31] Sakha did not lose as much of its population (between 1991 and 1995), as Magadan Province and Chukotka District, (over 25 percent of the population left), or Kamchatka Province and Koryak District, (over 15 percent of the population left). (Minakir, 1995, pp. 348-358 and Minakir and Mikheev, 1995, pp. 120-123)

[32] Six percent of the maximum urban population.

[33] Less than 0.5 percent of the maximum rural population.

[34] Eighty seven percent of the population in the 1890s.

[35] Previously called the Yakut by the Russians.

[36] There are some anthropologists and historians in Sakha who claim that the Sakha were the "aboriginal people" of the area and all other indigenous groups settled later. (Vinokurova, 1994, p. 19-20) This view is an important platform for some local politicians.

[37] Previously called Lamut by the Russians.

[38] Previously called Tungus by the Russians.

[39] There are also some Sakha villages that have borrowed the reindeer herding tradition from the northern indigenous minorities.

[40] For example, I know one person living in Yakutsk that considers himself half Russian and half Sakha, although in his Soviet passport he opted to list himself as a Russian because of the advantages of being associated with the dominant culture. He commented that he found it fortunate that his wife came from the exact same background and that his children could take the best from the two cultures.

[41] All population statistics given for the beginning of 1994.

[42] I was shown these documents in February 1996 by a member of the Sakha Parliament, but although I requested a copy of these documents, I was not given one. (Goldman, 1996 February, personal communication)

[43] Shtyrov, the Vice President of the Republic of Sakha, was named president of the Russia Sakha Diamond Company, just after rumors surfaced that he was studying the Sakha language (the President must be bilingual).

[44] Japan, Korea, China, the western United States.

[45] In the Republic of Sakha, Russian and Sakha are the two official languages.

[46] The Russia feasibility report is called a Technical and Economic Feasibility report and is often referred to by its Russian acronym, TEO.

CHAPTER 3

[1] These political-economic systems can be broadly portrayed: feudal Russian imperialism, a transitional economy between capitalism and socialism, a central command socialist system, a transitional economy between socialism and capitalism, and an economy directly geared to international markets.

[2] The official name of the Republic of Sakha remains the Republic of Sakha (Yakutia), but the "Yakutia" has been dropped almost entirely in practice. Today, the names Yakutia and Sakha have become subtle linguistic ammunition in some of the political exchanges between Moscow and Yakutsk. Today, conservative-minded Russians sometimes refer to the region as "Yakutia," as a politically incorrect reminder to the Sakha of its former colonial status. Sakha are also quick to correct the Russian newcomer who attempts to decline the word "Sakha" when speaking Russian, pointing out that it is indeclinable as it is a "foreign" word loaned to the Russian language.

[3] A more traditional etymology is that "*Yakha*" or "*Yakyt*" (plural) was a corruption of Sakha. (Mayinov, 1927, pp. 1 and 323; Kozmin, 1928, p. 7)

[4] *Zherebatsina* is the meat of a young (year and a half old) horse, and a favorite dish in Sakha.

[5] Today, cattle breeding continues to be an important part of Sakha rural life.

[6] Although the Sakha cow's milk was high in fat content, the amount of milk each cow produced was small. (Yadrahinskiy, 1994, personal communication) Soviet agricultural specialists keen to increase milk production, breed these animals with Russian dairy champions to increase milk production with no thought about quality. (Yadrahinskiy, 1994, personal communication) Today, the breed has all but disappeared and the pure bred Sakha cow only exists in small remote pockets in Sakha. (Yadrahinskiy, 1994, personal communication)

[7] Now called Olekhma Village.

[8] Primarily the Sakha and Evenki.

[9] The Russian military personnel were outnumbered by over 120 to one. In a 1909 report by the "Yakutia Governorship," the population of Yakutia is described as 447 land owners; 936 clergy; 2,395 merchants and traders; 10,557 peasants; and 2,095 military, including "Cossack foreign born." (Gogolev, 1972, p. 64)

[10] The rest of the population, over a quarter of a million people, falls under the general term "foreign born." This includes 238, 231 Yakuts; 10,856 Tungus (Even); 689 Yukagir; 5 Chuvantsi; 1,933 Lamut (Evenki) and 1,883 Chukchi. (Gogolev, 1972, p. 64)

[11] There is at least one fishing village (Pokhotsk) near the Arctic coast where descendants of these Russian "old timers" still retain a separate identity.

[12] In 1826, the first of the Decembrist revolutionaries arrived in Yakutsk. For about 30 years after the Polish uprisings of 1863–1864, various Polish revolutionary-intellectuals were exiled to Yakutia and became interested in the local culture and language of the Sakha and other indigenous people. Some of the first dictionaries and ethnographies were written by Poles. Vatslav Seroshevskiy is perhaps the most famous Pole who was exiled to Yakutia. Seroshevskiy arrived in Yakutia in 1880 and for 12 years Seroshevskiy traveled throughout the area, collecting a great amount of information which he published in 1896 in an ethnographic work called *The Yakut*. (Seroshevskiy, 1993, p. xxi–xxii) In the 1870s, Chernyshevskii, the famous Russian revolutionary was exiled to western Yakutia (Viluisk). (Kolesov and Potapov, 1937, p.67–68) After 1904, many communist revolutionaries found themselves exiled in Yakutia. (Kolesov and Potapov, 1937, p. 70–86) This includes Stalin's closest friend in the Communist Party leadership, Ordzhonokidze, who later became the Minister of Industry of the USSR under Stalin. (Kolesov and Potapov, 1937, p. 80–83)

[13] Reindeer herding is carried out in remote, rural areas by northern indigenous people (Even, Evenk, Chukchi, Yukagir) who are distinctly different from ethnic Russians and ethnic Sakha. There are some Sakha who engage in reindeer herding, rather than the usual cattle and horse herding.

[14] Called *toyon* in the Sakha language.

[15] Such councils were known by their acronym in Russian, the *Sovnarkhoz (Sovet narodnogo khozyaystov)*.

[16] Actually on orders of Felix Derzhinsky, Stalin's head of the People's Committee of Internal Affairs (the NKVD, a precursor of the KGB).

[17] Interestingly, the information for gold mining, including gold production figures, in Aldan during the 1920s and 1930s, I found in two Russian-language pamphlets, uncataloged in the Scott Polar Institute pamphlet collection. (Sterzhkov, 1931; Obruchev, 1930) The book by Serebrovskiy on the Soviet gold mining industry is also extremely useful and relatively candid. (Serebrovskiy, 1936) This is the original text that is liberally paraphrased in a work by John Littlepage, an American mining engineer, who worked in the Soviet gold mining industry. (Littlepage, 1938) Littlepage is widely cited in the West, but I have not seen any reference to the Serebrovskiy book outside of Littlepage's work. The Serebrovskiy book was purged along with Serebrovskiy after the show trials of the late 1930s. I was fortunate to find a copy of Serebrovskiy's book at the Yale University library.

[18] The presence of Chinese and Korean workers is ignored in the Russian histories about the Aldan gold rush. It seems that Chinese and Korean presence is deliberately ignored for political reasons.

[19] Literally, "to drink until reaching the green snake," a likely reference to the green, oxidized copper cooling coil used by moonshiners in the distilling apparatus.

[20] Dr. Alexander Pilyasov of Magadan, Russia came up with the phrase "super-organization" to describe *Dalstroi*. (Pilyasov, 1994)

[21] Between 1953 and 1965, the Soviet Union sold 3,000 tons of gold (Kempton and Levine, 1995) and 1,247 tons between 1984 and 1990. (Kempton and Levine, 1995)

[22] Diamonds are a crystalline form of carbon, that is formed 150 or more kilometers below the earth's surface, under high pressure and moderate temperatures. (NWT, 1993) Diamonds are brought up from the depths of the earth in a mineral formation called kimberlite, which forms cone shaped structures called kimberlite pipes, in very old rock (Precambrian). (NWT, 1993) This is where most diamonds originate on the earth's surface. Diamonds are also brought up in another kind of mineral called lamporite, which contain large amounts of very

small diamonds, about 0.03 carats. (NWT, 1993) The Australian Argyle deposit is the most well known lamporite deposit. (NWT, 1993)

[23] Placer diamonds can be found in river beds or on the sea floor. These alluvial diamonds are diamonds that have been eroded away from the "hard rock" kimberlite deposits and found on the surface or underground. They are often washed into a river or sea bed.

[24] The geological expedition from Irkutsk lead by G.K. Feinstein's survey party found the first placer diamonds where the Krestyakh River falls into the Viluyi River. (Korzhuev, 1965, p. 19; Lykhin, 1994, p. 6) Kirby relates that the survey team radioed their progress by code. For each diamond found the team was to report "one reindeer died." The radio operator at base was never told about any of the secret arrangements. When the first diamond was found and the team enthusiastically radioed that, "one reindeer died,"—the radio operator radioed back, "go ahead and buy another reindeer." (Kirby, 1974, p. 64)

[25] *Zarnitsa* in Russian.

[26] On finding the kimberlite pipe *Mir* on 13 July 1955, the No. 132 Amakinsk Expedition Party of the Union Trust No. 2 sent the following telegram to their bosses at the Ministry of Geology and Protection of Resources of the USSR. "We smoked the pipe of Peace [play on the word *Mir*, which in Russian means peace], the tobacco is excellent." (Khabardin, 1973, p.62)

[27] From the Russian meaning "Yakut diamond."

[28] *Aikhal* was found by the Amakinsk Expedition on 22 January 1960.

[29] At the time GUM store was a cross between Woolworth's (a five and dime) and Covent Garden.

[30] This is especially true in the 1950s, when the increase in Soviet trade meant that "trade aversion," rather than "autarky" was the "official" policy.

[31] See Gregory and Stuart: "... Between 1929 and 1931, Soviet imports increased over 60 percent (in terms of volume) despite the worsening terms of trade resulting from the collapse of agricultural prices in the world market during this period ... Between 1929 and 1931, Soviet exports expanded somewhat less than 50 percent, and this expansion was spearheaded by an increase in the proportion of the total domestic output of agricultural products exported ... In this manner, agricultural exports were used to finance machinery and ferrous metals imports, which rose from one-third of total Soviet imports in 1928 to almost three-quarters by the end of the first Five Year Plan. The costs of maintaining agricultural exports were considerable, for they worsened the famine of 1932–1934 ..." (Gregory and Stuart, 1986, p. 115)

[32] Of course, this would be consistent with an orthodox Marxist doctrine if Stalinism was classified as a type of Asiatic despotism, that did not fit in the standard capitalist-socialist-communist progression.

[33] Findlay points out the lack of satisfaction in an "availability" theory response. (Kravis, 1956) "'... [w]hy does Kuwait export oil?' is the same answer as the mountaineer Mallory gave to the question of why he wanted to climb Everest, 'Because it is there.' This of course begs the question of the opportunity cost of complementary, non-specific inputs needed to get the oil out of the ground ... so that there is no escape from the necessity of the logic of comparative cost." (Kravis, 1956)

[34] The only other major contributor to the Soviet export mix was machinery, mostly to other communist or developing nations.

[35] This story is also related by John Littlepage, who worked for Serebrovskiy in the 1930s in Russia: "Stalin cited as a parallel the role played by gold in strengthening the economy of the United States. He pointed out that the gold mined in the American West had become within a few years a major factor in the American Civil War, providing a gold chest which made it easier for the North to defeat the South. Meanwhile, said Stalin, the discovery of gold had opened up agriculture and industry in the whole western part of the United States. 'Stalin showed an intimate acquaintance with the writings of Bret Harte,' wrote Serebrovskiy. 'Without going into technical details, he said that the new districts of the United States were opened up from the beginning by gold and nothing else. On the tracks of the gold hunters came other mining industries, zinc, lead copper, and other metals. At the same time, agriculture was opened because it was necessary to feed the gold hunters. Roads and transportation developed for their benefit.' Having thus summarized the history of California's gold rush, Stalin told Serebrovskiy: 'This process, which really made up the history of California, must be applied to our outlying

regions in Russia. At the beginning, we will mine gold, then gradually change over to the mining and working of other minerals, coal, iron, etc. At the same time we will open up agriculture.'" (Littlepage, 1938, p. 29)

[36] Officially the ruble was defined as .2221118 grams of "chemically pure gold," or 4.50 rubles a gram. (Slavin, 1961b, p. 14)

[37] This gold, 465 bars, sank with the *H.M.S. Endinburgh* and was salvaged in 1981.

[38] Norilsk is a metalurgical complex well known for its inefficiency and pollution.

CHAPTER 4

[1] I attempted to adapt the deflators used by the Russian and Sakha statistical offices, only to discover that the deflators are considered state secrets. I was given the Russian GDP deflators by representatives of the London School of Economics in Moscow, but these deflators do not correspond with the actual GDP growth/decline rates for Russia. Moreover, regional deflators do not correspond with national deflators. I, therefore, abandoned trying to discover the official deflators that would have marginal reliability. I also concluded that a comparison of nominal indicators were really meaningless to a western frame of reference and that relatively adequate information for the task at hand could be presented using simple dollar/ruble exchange rates. I have included a more complete set of comparisons of indicators in Appendix 1.

[2] This phenomenon may be partially explained by a lower relative cost of energy and the fact that non-payers are never cut off from electricity supplies (OECD, 1995, p. 10). Nevertheless, this is a crude indication that there is a divergence between use of factors of production and estimated loss in GDP.

[3] For its gross industry earnings the Sakha government calculates only the direct earnings of the diamond mining company (Diamond Russia Sakha Company) and does not include some of the diamond earnings that flow into the Russian and Sakha treasury. In short, the earnings in the diamond industry are gross earnings minus royalties.

[4] Russian statistical bulletins use the heading *promyshlenaya produktsiya*, literally, "industrial product." This includes all resource extraction activities and manufacturing (including manufacturing construction material), but excludes agriculture, services, support (transport and construction) and primary forestry products. Most Western literature uses the term "industrial output" to describe *promyshlenaya produktsiya*.

[5] It is quite possible that the Sakha statistical office adjusts the exchange rate for gross income for the diamond industry, expressed in rubles, to achieve a consistent "balance" in the official figures.

[6] The Sakha were formerly known as the Yakut by the Russians. Sakha is the name this Turkic speaking people call themselves. The Sakha remain the largest indigenous non-Russian population within the Republic of Sakha.

[7] In 1958, Sakha reported 26.1 percent of the labor force worked in the diamond industry.

[8] The GINI coefficient measures the relationship between the percentage of households and the percentage share of income. Perfect equality would mean a GINI coefficient of zero (0), while perfect inequality would mean a GINI coefficient of one (1). For comparison, the GINI coefficient for the US was .470 for 1985, and for Britain was .460 for 1988 and .580 for 1979. (World Bank, 1994, p. 221; World Bank, 1995, p. 267) Usually, the GINI coefficient is accompanied by a graph of the line that relates percentage of households and percentage of income. The information that the Sakha statistical office provides is incomplete and therefore does not allow a conventional income curve.

[9] Per capita meat consumption is about 60 kilograms (132 pounds) a year, per capita milk products consumption is 300 kilograms (660 pounds) a year, per capita potato consumption is 60 kilograms (132 pounds) a year and bread consumption is 90 kilograms (198 pounds) per capita. (Goskomstat-Sakha, 1995a, p. 87)

[10] At first I thought the reason we charged half market price, although our meat was of higher quality, was that it was important that we did not seem greedy to our friends and acquaintances. It later turned out that because of the break we gave on the price of meat meant that we could later turn to these people for favors (i.e. one person sold us cabbage at below market prices). This process possibly acted as a hedge against inflation. In any case this quasi-monetary transaction brings up an extra dimension to the act of a "gift" as discussed by Bloch and Parry. (Bloch and Parry, 1989, pp. 8-12)

[11] The University of Alaska Anchorage attempted to fund initial steps to identify and prioritize environmental risk within the Republic of Sakha, but US government training funds were withdrawn in 1994.

CHAPTER 5

[1] Government powers involve 1) the Russian Federation/federal government (Rossiyskaya federatsiya); 2) the regional republic (formerly autonomous republics, like Sakha), provincial/district level (*oblast* or *krai* or *okrug*); 3) the county level (*raion*—in Russian, *ulus*—in Sakha), which includes large cities like Moscow, Yakutsk and Neringri; and 4) the city, town and village level (*gorod* or *poselok*) (municipal level).

[2] Fiscal relations between Russia and Sakha are also discussed in Chapter 2.5.

[3] Both apartments where I lived in Yakutsk had telephones, but they worked less than half of the time. The freezing ground broke the buried telephone lines in the autumn, while the spring floods shorted out the telephone nodes in the apartment house basement. A glitch in the city wide system meant that any number beginning with the prefix "2" could rarely be called from a telephone whose number began with a prefix "6."

[4] Commonly referred to by Russian publications that are translated into English as "juridical bodies" (from *iuridicheskoye litso*, "legal face" in Russian).

[5] It should be noted that Russia gold production statistics no longer includes the Central Asian Republics of the former Soviet Union in their production statistics. Nevertheless, in 1995, the former Soviet Union, including Russia and Central Asia, produced 21 percent less gold that in 1985. (*The Economist*, 1996, 25 May, p. 152)

[6] Placer mining, a method of mining that uses water and gravitation to separate heavier gold from gravel or sand (see Chapter 2.3.2.). Placer mining is the most prevalent form of mining in the Northeast.

[7] Lode mines are underground mines where gold and tin are found within hard rocks and extracted mechanically or chemically.

[8] The source of gas is the Taas-Yuryiakh Field that also has a potential for a helium export project (see Chapter 6).

[9] Talakan, Middle-Botobonsk and the Taas-Yuryiakh fields. The fields also contain natural gas as well.

[10] According to the BBC, "[i]n 1994, a joint-stock company (Almazvilyuyenergiya-Diamond Viluyi Energy Company) was formed to finance the third dam for the Viluyi hydroelectric station. The company is owned by the government, the Diamond Russia Sakha Company and the hydroelectric utility operator, Yakutenergo." (BBC Monitoring Service, 1996, 02 February)

[11] Zhatai Company used to be the repair shop for the river fleet and is now involved in all kinds of metal casting, metal works, and boat and car repair.

[12] There is one percent private land in Alaska, if 12 percent of Native owned land is excluded from the total land in Alaska. Native owned land is technically also private land, but has major restrictions on sale and transfer.

[13] An economic entity must be self-supporting from its own profits and balance its yearly operating budget. This does not include the capital budget.

[14] Referring to the famous meeting when the "Menshevik" wing of the original Russian Workers and Peasants walked out and the "Bolshevik" wing set the party's entire agenda.

CHAPTER 6

[1] A small amount of coal is shipped to Korea.

[2] De Beers opened an office in Moscow in September 1992.

[3] Diamonds separated from the original (usually kimberlite) minerals in which they are found before they are cut and polished are called rough diamonds.

[4] Although Australia is the largest producer by volume, this is only seven percent of the worlds production by value, less than $500 million. (Higgins, 1994, 13 November) In other words, Australia produces many low quality diamonds. Since the early part of 1996, Australia's diamond producer left the CSO marketing arrangement after De Beers cut the price on low-end diamonds and required Australia to curtail production to 85 percent of production. (Gooding, 1996,12 April) Austrialia is the first country to leave the De Beers cartel.

De Beers claims that this price decrease is a direct result of Russia not abiding by its agreement with the CSO cartel. (Gooding, 1996,12 April)

[5] De Beers and General Electric are the largest producers of synthetic diamonds.

[6] A large number of Russian diamonds are medium-sized stones in the range of quarter- to half-carat size.

[7] I believe that *The Wall Street Journal* incorrectly reported that "ARS [Diamond Russia Sakha Company] officials firmly opposed," the raising of the percentage sold outside the cartel from five to 20 percent. (Behrmann and Banjerjee, 1995) The statement should have been qualified as "*some* officials," since there seems to be no consensus within the company on the issue.

[8] The volume of diamond exports information is ordinarily considered a state secret. The fact that the London School of Economics is publishing the figures suggests there is a breakdown in the system that is supposed to keep the information secret.

[9] I estimate the value of rough diamonds supplied by the Russian government to be rough diamonds based on the average price per carat.

[10] This is consistent with the data released by the Russian government through the London School of Economics (LSE) and the comments of Leonid Gurevich, deputy head of the Ministry of Precious Metals, who said De Beers paid $108 a carat. (Gendlin, 1993, p. 9)

[11] The cutters are more skilled at cutting smaller diamonds, than the Russians.

[12] Interestingly, a small portion of the Tyymaada Diamond Company's stock was purchased at the Moscow stock exchange by CS First Boston, and American Investment Bank, although the Tyymaada Diamond Company does not refer to the American firm as one of its stockholders. (Ivanov, 1995)

[13] According to one Western journalist Artamonov has started a political party where only people who were born in Sakha may belong. (Cienski, 1995, p. 1) Artamonov also stated that, "the 'ideal' proportion of Russians in Yakutia should be 50 percent."(Cienski, 1995, p. 1)

[14] Particularly small diamonds, known as "Indian goods."

[15] This is likely a reference to decrease the import tax on rough diamonds, which would allow cutters to buy Russian, or any diamonds for that matter, directly from the world market, at world prices.

[16] For an excellent discussion about notions of conspiracy in Russia, see Laqueur's, *Black Hundred: The Rise of the Extreme Right in Russia*. (Laqueur, 1994)

[17] Unlike the rough market, the jewelry market is competitive and information about prices and quantities is available.

[18] Carat is a measure of weight for diamonds and other precious stones equal to 200 milligrams. The word is based on the Greek name for the carob seed, which was used as a standard of measurement.

[19] These are referred to as the four Cs of (carat weight, cut, clarity and color).

[20] Current spelling is Sakhalin

[21] The American oil company was Sinclair Oil.

CHAPTER 7

[1] The definition of the Russian North, for the Soviets, was based on a boundary of stable agricultural development that is depends on average temperature formula. To apply the formula, take the sum of all "vegetation" days that are over + 5°C (41°F). If the sum is less than 1600° the area qualifies as the Russian North. (Slavin, 1961a)

[2] This word is derived from the Russian word *svoi*, one's own, and literally means to "make something one's own." (Kirby, 1974, p. 168; Vitebsky, 1990, p.25)

[3] Soviet refers to the Soviet Union 1917-1991. Russian will be used in the broadest sense possible, meaning that which is associated with Russian territory after 1991, the Russian language or the people living within Russia.

[4] Also known as the "Brundtland Report."

[5] Following the Alaskan tradition, I will use the term "Native" (with a capital "n") interchangeably with "indigenous."

[6] In violation of international law.

[7] Unfortunately, Dr. Bogdanov died in August 1993.

[8] Alaska has three refineries (one medium-sized refinery and two small refineries) that produce petrol and jet fuel for the local markets, as "easy" import substitutes. Alaska also produces some urea close to an LNG export complex in the Cook Inlet.

[9] The European predecessor for such development may be considered Holland of the 17th century.

[10] Certainly Sakha's economy was open within the Soviet Union and even had indirect, but strong, links to the global markets (see Chapter 3).

[11] The trip was infamous because the American delegation was completely mislead by their KGB minders, as related by historian John Stephan:

"Lattimore was also impressed by what he thought he saw [in the Russian Northeast]. Noting that Dalstroi [the organization that ran the gold mining labor camps], 'a combination of Hudson's Bay Company and TVA,' operated 'a first-class orchestra and a good light-opera company,' he concluded that 'high-grade entertainment just naturally seems to go with gold, and so does high-powered executive ability,' as exemplified by Nikishov and his wife (*komendant* of Maglag [Magadan labor camp]), who had 'a trained and sensitive interest in art and music and also a deep sense of civic responsibility.' Many years later, recalling his visit to Kolyma, Lattimore allowed that he was 'totally ignorant about the actual situation.'" (Stephan, 1994, p.232)

[12] Whale baleen, hundreds of plates of which grow in the whale's mouth and allow the whale to filter out food from the sea water, is a substance surprisingly similar to a modern flexible plastic. This baleen was used for girdle stays and buggy whips.

[13] Interestingly, Rogers also notes that the top three in-shipments consisted of, "tin cans ($5,219,000) [for salmon canning], petroleum products ($2,679,000), and alcoholic beverages (1,968,000)." (Rogers, 1962, p. 82)

[14] See Chapter 2.

[15] Marshall, the study's author, wrote and phoned 50 companies and found 51 North Slope Native employees and there may be up to 10 more people who he couldn't confirm. The report includes this classic quote, "... British Petroleum, whose spokeswoman thought her company may have one ..."(Marshall, 1991a)

[16] Sachs and Warner call these qualifying and non-qualifying countries. (Sachs and Warner, 1995a, p. 8)

[17] Value-added production is referred to in Russian as *globokaya pererabotaka* ("deep production")

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This thesis was designed by Shannon Weiss of Illusions too in Anchorage, Alaska, USA., telephone 1 907 337 3370.