

RESOURCES, ENVIRONMENT, AND RURAL DEVELOPMENT IN URUGUAY, 1779-1913

by

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Abstract

This dissertation examines the history of agricultural change in Uruguay over the long nineteenth century, as a case study in the agrarian roots of Latin American long-term development. Cowhides were first exported on a large scale in 1779, under Spanish rule, starting a series of commodity booms that culminated with frozen beef in 1913. By then, Uruguay had the highest number of cows per person and one of the highest per capita incomes in the world; the country only retains the first of those accolades today. How were resources (natural and human) put to work to lay that development path? Which were its environmental basis and limits?

To answer these questions, I draw on a wide range of previously under-utilised primary sources, as well as on present-day scientific literature on grassland ecology. My approach is methodologically eclectic, and techniques vary as suits the diversity of the materials and the questions asked in each chapter. These include different quantitative methods (from descriptive statistics to regression analysis), georeferencing and an array of data visualizations, as well as instances of micro-historical narrative. A major concern throughout is to place the Uruguayan case in comparative perspective, mainly within Latin America but also beyond, in order to consider the findings of this dissertation in relation to the wider history of ‘agrarian capitalism,’ and to interrogate the usefulness of that term itself.

It is found that in the late-nineteenth century, as lands were enclosed with steel wire, traditional grazing on unfenced ranges gave way to agricultural innovations for which latifundia were neither an obstacle nor a necessity. Fertile land, still physically abundant, was now institutionally scarce, which encouraged immigrants to concentrate in cities and find urban occupations. However, agriculture remained the largest employer in the economy, with rural wage labour becoming increasingly permanent rather than seasonal. While these changes underpinned the rising productivity of agriculture, they greatly limited the resources for smallholder farming, completing a process of concentration and specialization which began during the ill-named ‘lost decades’ in the aftermath of independence.

This profound transformation in working people’s relation to the land shaped the agricultural landscapes, economic specialization, and demographic patterns that define modern Uruguay. But rural development and its legacy were also about what did not change. Throughout the nineteenth century and beyond, the agricultural export economy continued to draw its comparative advantage from the ecological services of its grassland environment. As these became more expensive relative to the declining terms of trade of beef, leather, and wool, Uruguayan agriculture entered a long cycle of stagnation: the background to the country’s divergent twentieth-century *siesta*.

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Preface

There was a game I used to play to pass the time when we travelled north to see my grandparents. I would look out the window, where the green plains were flying by, and try to find an angle where I could see a landscape of ‘only nature.’ To my childhood self that meant no people, which is not difficult in large parts of rural Uruguay, but also no fences, no houses, no tractors, no artificial ponds. Just grass, trees, livestock, and sky. I often succeeded, or so I thought. As I grew up, I realised the game was rigged from the start: it was impossible to find ‘only nature’ because the grasslands were a domesticated landscape. The complexity of nature had long been simplified, and a new complexity, economic and environmental, had taken its place. This dissertation is about the crucial century in that transformation, how it made Uruguay relatively rich, and which were its limits.

In a way, then, the story of this thesis started more than two decades ago. In a more concrete sense, though, it developed over the last three years of research, learning, and teaching. These were made possible by a Cambridge International Scholarship awarded by the Cambridge International Trust, as well as by additional research funding generously provided by the Ellen McArthur Fund, King’s College Cambridge, and the Faculty of History’s fieldwork and travel grants. I am also greatly indebted to the Cambridge Group for the History of Population and Social Structure (Campop) for its facilities, research environment, and much else besides. Collective thanks are due as well to the students I was fortunate to teach in courses (‘papers’ in Cambridge lingo) on Latin American history, global history, and historical argument and practice. Teaching encouraged me to keep my own research in perspective and expanded my horizons, as I had to grapple with the often vast periods and regions covered by the few Cambridge courses on the history of the majority world (which is a problem for undergraduates, but turned out to be a great learning experience for me as their supervisor).

My largest debt is to my supervisor, Gareth Austin, whose constant advice has been endlessly stimulating and will continue to shape my thinking. To those who know Gareth, I can simply say being supervised by him is exactly as wonderful as you think it would be. To those who do not, let me say I left every supervision meeting knowing many more things than before, and filled with enthusiasm and renewed curiosity. I cannot think of a better way of mentoring.

At the Faculty of History I learnt much from Leigh Shaw-Taylor and Amy Erickson in regular conversations over coffee. Leigh also offered invaluable suggestions on how to construct reliable estimates from birth record data, while Oliver Dunn shared extremely useful tips for curating a personal digital archive. Mourat Güvenç from the Istanbul Studies Centre visited us in April 2019 and taught an impromptu course which changed the way I thought about data description and visualization. I also received important advice, particularly on what became Chapter 2, from William O’Reilly over several conversations, as well as from Nicholas Guyatt and Caroline Goodson. My resolve to work on the ‘lost decades’ was strengthened by an email exchange with William Gervase Clarence-Smith, by chats with María Alejandra Irigoin and Victor

Bulmer-Thomas, and by timely encouragement from Tony (A.G.) Hopkins over lunch at King's College. At my college special thanks go to John Arnold and Roseanna Webster, with whom I convened a work-in-progress seminar and from whom I learnt a great deal. I owe much also to my fellow PhD students in economic history; in particular, I am immensely grateful to Tom Westland for his scholarly generosity, his cooking, and above all for his friendship.

Throughout my PhD work, I benefitted from many conversations away from Cambridge. Especially important was the dialogue with scholars from Universidad de la República in Montevideo. Several chapters were shaped by sound advice from the economic historians María Inés Moraes, Henry Willebald, and Pablo Castro, and the agronomists Marta Chiappe, Gabriel Oyhantçabal, and Virginia Rossi. Important suggestions came from Spain too, particularly from Alfonso Herranz-Loncán and Marc Badia-Miró in Barcelona, Dácil Juif in Madrid, and Juan Infante-Amate in Seville. Of the many conferences where I presented preliminary results, none left such a deep impression as the *re:work* summer school in Addis Ababa in November 2019, to which I owe the pleasure of visiting Ethiopia as well as the opportunity of discussing my work with Fred Cooper, who made crucial points I am still thinking about. Exchanging drafts with Samantha Payne, who I also met in Addis, was a great help. The archivists and librarians of the institutions mentioned in the list below also deserve my thanks, which they will receive again in person as I will undoubtedly find myself back in their workplaces in the years to come.

Two of the chapters are at 'review and resubmit' stage with academic journals: Chapter 2 with the *American Historical Review* and Chapter 4 with the *Economic History Review*. I would like to thank the editors Alex Lichtenstein and Giovanni Federico, as well as the anonymous reviewers, for their insightful suggestions which have significantly improved those papers and this thesis in general. Additionally, in the first year of my PhD I published an early version of the railway data appearing in Chapter 4 in the *Revista Uruguaya de Historia Económica*; I am thankful to its anonymous reviewers for their detailed comments.

I have been incredibly fortunate to share this journey with Ellen Gordon as we were both working on our PhDs and spending time in Uruguay, the UK, Argentina, Ecuador, and Spain. In the final stages of this thesis, we had to move house several times (including across the Atlantic) amidst the coronavirus pandemic, but her brilliance and kindness made it all better. My final thanks are to my parents, who first taught me the importance and the joy of being curious about the world. This thesis is dedicated to them.

Finally, here are the required declarations: this dissertation is the result of my own work and contains nothing which is the outcome of work done in collaboration; it is not substantially the same as any work that has already been submitted before for any degree or qualification; it does not exceed 80,000 words in length (excluding footnotes and lists of sources), and while many errors were prevented by the advice of friends and colleagues, the ones that remain are all of my own making.

Emiliano Travieso
King's College, Cambridge, September 2020

Notes on translations, software, and abbreviations

Language and translations

All translations are mine. For simplicity, they are all into ‘modern’ English: when working with documents in ‘archaic’ Spanish I translate ‘vuesa merced’ as ‘you’ (instead of ‘thy grace’), and so on. Following the Faculty’s guidelines, the original Spanish (less frequently Portuguese or French) is provided in footnotes. I apologise to readers because this often makes for bottom-heavy pages, but my hands were tied. Also for simplicity, the word ‘Uruguay’ is generally used somewhat loosely to refer to the territory of the present-day republic, and distinctions between its different historical names are only made when relevant to the argument.

Software, colours, and typefaces

All the statistical analysis and graphs in this dissertation were produced using R 3.5.3 and RStudio 1.3, equipped with the following packages: tidyverse, ggthemes, tinter, extrafont, grid, ggpubr, cowplot, colorspace, spdep, RCurl, olsrr, and stargazer. Full references to these statistical software (all open-source) can be found in the section ‘Sources’. Maps were drawn in ArcMap 10.7.1, licensed by ESRI. The Appendix is a guide to the replication packages for all analyses, graphs, and maps. The files themselves are included as Additional Materials to this dissertation.

Data visualizations were inspired by the design principles of Jacques Bertin, *Sémiologie graphique* (Paris, 1973) and informed by the library of graphs and the technical advice found in Claus Wilke, *Fundamentals of Data Visualization* (Sebastopol, CA, 2019). The default colour palette chosen for graphs is colourblind-friendly; it was presented by Masataka Okabe and Kei Ito in their article ‘Colour Universal Design’ (<https://jfly.uni-koeln.de/color/>). The sequential colour scheme used for Maps 4.1 and 4.2 is also colourblind friendly and was developed by Mark Harrower and Cynthia Brewer, ‘Colorbrewer.org: An Online Tool for Selecting Colour Schemes for Maps.’ *The Cartographic Journal* 40, 1 (2003): 27-37. Map 5.1 is an exception: because more categories were needed, a custom colour scheme was used, borrowed from the population density maps in Osamu Saito and Leigh Shaw-Taylor (eds.), *Occupational Structure and Industrialization in a Comparative Perspective* (Cambridge, forthcoming).

I have typeset the dissertation myself using the typefaces Minion, created by Robert Slimbach, and Montserrat, designed by Julia Ulanovsky. The glyphs marking the end of each chapter are examples of cattle brands from the colonial period, photographed by myself in the Archivo General de la Nación in Montevideo (MVD, ExMHN, Cajas cronológicas, Caja 6). I borrowed this design idea from Juan Carlos Garavaglia’s *Les hommes de la pampa* (Paris, 2000).

Abbreviations for archives and libraries

BA: Archivo General de la Nación (Buenos Aires, Argentina).

BN: Biblioteca Nacional (Montevideo, Uruguay).

MVD: Archivo General de la Nación (Montevideo, Uruguay).

AGA: Archivo General Administrativo.

ExMHN: Ex-Archivo Museo Histórico Nacional.

CAR: Parroquia, Archivo y Museo de Nuestra Señora del Carmen (Carmelo, Uruguay).

FB: Archivo Liebig's-Anglo (Fray Bentos, Uruguay).

UL: Cambridge University Library (Cambridge, United Kingdom).

Abbreviations for academic journals

AER: American Economic Review

AHR: American Historical Review

EcHR: Economic History Review

EEH: Explorations in Economic History

HAHR: Hispanic American Historical Review

JEH: Journal of Economic History

JLAS: Journal of Latin American Studies

QJE: Quarterly Journal of Economics

RHE: Revista de Historia Económica - Journal of Iberian and Latin American Economic History

RUHE: Revista Uruguaya de Historia Económica

Introduction

The Latin American countryside is often blamed for the region's historic economic backwardness. Agricultural land, it was long argued, was irrationally divided and underused, producing a landscape dominated by archaic, inefficient haciendas. Rural labour was no better: peasants and farm hands held on to traditional, 'pre-capitalist' values, while large landowners were almost feudal, busier preparing for the next civil war than investing in innovations. Although this view has been falsified in many contexts, it continues to overshadow discussions about Latin American development. Scholars in many strands of dependency theory (1960s-70s), new institutional economics (1980s-90s), and, more recently, 'path dependence' and 'persistence' literatures have looked for the origins of rural backwardness in Iberian colonialism and its 'extractive institutions'. And yet, until well into the twentieth century most Latin Americans successfully sustained their livelihoods through agriculture, and some Latin American countries greatly prospered on the back of the agrarian economies that emerged from the colonial past. Uruguay's livestock export agriculture made the country rich in the late-nineteenth century, when it accounted for a third of GDP. By 1913 Uruguayan incomes were only 10% lower than France's and about three times higher than the Latin American mean (excluding Argentina, which underwent a similar process). What was the environmental basis of Uruguay's prosperous agrarian capitalism? Which were the ecological limits facing it as a result of periods of extensive growth (c.1779-1870s) and agricultural intensification (c.1880-1913)? How can they contribute to explain the later stagnation of Uruguayan agriculture in the twentieth century?

This dissertation examines Uruguay's rural development during the long nineteenth century—the crucial period of the 'Great Divergence'—by taking both the natural environment and the colonial legacy seriously.¹ In so doing, it purposefully crosses the historiographical divide of 'modernization' (c.1870s), which has left most accounts of Latin American export-led growth during the First Globalization separated from colonial and early-independent history. The thesis argues that 'rural modernization' in Uruguay between 1880 (by when most lands were enclosed) and 1914 must be explained in relation not only to the opportunities and challenges of the world economy of the First Globalization, but also to the potential and limits of its own environment, a 'second nature' resulting from geography as well as from preceding history. In telling the story of how a small economy exploited its environment to transform itself from a colonial backwater to a prosperous agricultural exporter, this dissertation will challenge both triumphalist accounts of economic modernization and declensionist 'disaster capitalism' narratives. Agricultural intensification significantly increased living standards for people in Uruguay, while at the same time contributing decisively to ecological change with far-reaching consequences. Though economic historians have in recent years

¹ Economic historians use the term 'Great Divergence' as a shorthand for the emergence and consolidation of an enormous gap in levels of material welfare between rich Western societies and most of the rest of the world since c.1750, ushered in by the Industrial Revolution. For a brief overview see Robert C. Allen, *Global Economic History: A Very Short Introduction* (Oxford, 2011): 1-13.

focused on institutions as history's crucial legacy, this thesis will argue that the environment can be as powerful a bearer of the past's grip on the present.

This introduction discusses two ways in which this case study can contribute to the general economic history literature, argues for an interdisciplinary approach to Uruguay's rural past, and maps out the structure and style of the dissertation. Conceptual debates are then taken up in Chapter 1, which also defines the geographical and chronological boundaries of the case study more precisely.

1 Contributions

While the questions that drive this dissertation are specific to Uruguay's economic history, they can contribute to two broader debates in the field, concerning Latin America's part in the Great Divergence and economy-environment interactions in global economic history. Over the last two decades, scholars have continued to provide evidence for Latin America's long-run decline relative to the United States or to the West more generally, but there is no consensus on its timing or its foundations.² While some influential interpretations emphasised the path-dependent effect of 'initial' colonial institutions, scholars have more recently questioned the standard account of the Iberian colonial state as predatory and monolithic and rekindled other competing explanations, from factor endowments to early-independent political economy.³ Because not all of Latin America fell behind at the same time or to the same extent, any explanation for Latin America's relative backwardness should also account for very large variations *within* the continent, as an earlier generation of economic historians noted.⁴ In this context, the 'reversal of fortune' thesis, in which Uruguay is cited as a positive example, has succeeded in making such long-term debates once again relevant to economists and other social scientists, but its tendency to 'compress history' can blind it to crucial changes

² Luis Bértola and José Antonio Ocampo, *The Economic Development of Latin America Since Independence* (Oxford, 2012); Victor Bulmer-Thomas, *The Economic History of Latin America since Independence*, third edition (Cambridge, 2014); Robert H Bates, John H Coatsworth, and Jeffrey G Williamson, 'Lost Decades: Postindependence Performance in Latin America and Africa,' *JEH* 67, 04 (2007); Leandro Prados de la Escosura, 'Lost Decades? Economic Performance in Post-Independence Latin America,' *JLAS* 41, 02 (2009). Chapter 1 discusses in detail the state-of-the-art of Latin American economic history, which is only hastily sketched in this paragraph.

³ See, respectively, Douglass C. North, 'Institutions and Economic Growth: An Historical Introduction,' *World Development* 17, 9 (1989) and David S. Landes, *The Wealth and Poverty of Nations* (London, 1998); Regina Grafe and Alejandra Irigoin, 'A stakeholder empire: the political economy of Spanish imperial rule in America,' *EcHR* 65, 2 (2012); Stanley L. Engerman and Kenneth Lee Sokoloff, *Economic Development in the Americas since 1500: Endowments and Institutions* (Cambridge, 2012) and John H Coatsworth, 'Economic and institutional trajectories in nineteenth-century Latin America,' in *Latin America and the World Economy Since 1800*, ed. John H. Coatsworth and Alan M. Taylor (Cambridge, MA, 1998). Page numbers and specific citations are provided in Chapter 1.

⁴ Jorge Gelman, 'Senderos que se bifurcan. Las economías de América Latina luego de las Independencias,' in *Institucionalidad y desarrollo económico en América Latina*, ed. Luis Bértola and Pablo Gerchunoff (Santiago, 2011); Leticia Arroyo Abad, 'Persistent inequality? Trade, factor endowments, and inequality in republican Latin America,' *JEH* 73, 1 (2013); Ciro Flamarion Cardoso and Héctor Pérez-Brignoli, *Historia económica de América Latina* (Barcelona, 1979).

in the trajectories it tries to trace.⁵ By offering an economic history of Uruguayan agriculture that spans the late-colonial period and the First Globalization boom, this dissertation provides a detailed, ‘decompressed’ case study of one Latin American nineteenth-century trajectory representative of the Southern Cone economies, which became, during the key century of the Great Divergence, comparatively much richer than the rest of the region. Rather than producing a new set of cross-country regressions, the focus on a single case, observed in comparative perspective, can provide new insights into the agrarian bases for long-term divergence within Latin America as well as between the region and the leading world economies.

This thesis also aims to contribute to the study of environment-economy interactions in global economic history, which have been, relative to institutions and technology, overlooked in our field, with quantitative historians of agrarian societies divided ‘between those who count calories and those who count cash.’⁶ Working on the long-term development of modern livestock agriculture in the country with the highest ratio of cattle to people in the world (then and now) offers a unique chance to bring economic and environmental history into dialogue with one another.⁷ In particular, it provides an opportunity to go beyond the two ‘before and after’ stories that dominate accounts of environment-economy interactions in periods of ‘transition to capitalism’ or ‘modernization’. In the ‘disaster capitalism’ narratives, more common in environmental history, the story is often one of a fall from grace: a human community lived in relative harmony with nature, making a rational use of its resources and allowing ecosystems to replenish, until capitalism (either from the outside or the inside, from above or from below) and its handmaiden, the modern state (either colonial or national), brought about feverish agricultural intensification and the beginning of the end of a sustainable relationship with the environment. On the other hand, the ‘Promethean capitalism’ narrative, often found implicit in our own sub-discipline, is a story of dramatic progress: a society was bound by an inefficient allocation of resources or a political economy which limited accumulation (the tale can be told in both Marshallian and Marxist prose), until the right set of institutions or the powerful levers of technological change allowed it to tap into productive resources that had been locked away in nature, irrationally underused all along.

⁵ Daron Acemoglu, Simon Johnson, and James A. Robinson, ‘Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution,’ *QJE* 117, 4 (2002); Gareth Austin, ‘The ‘Reversal of Fortune’ Thesis and the Compression of History: Perspectives from African and Comparative Economic History,’ *Journal of International Development* 20, 8 (2008).

⁶ Gareth Austin, ‘Introduction,’ in *Economic development and environmental history in the Anthropocene: perspectives on Asia and Africa*, ed. Gareth Austin (London, 2017); the quotation is from Paul Warde, *Ecology, Economy and State Formation in Early Modern Germany* (Cambridge, 2005): 20.

⁷ The ratio was 8 cows per person in 1908 and is now almost 3.5. The only other countries where cattle outnumber people are New Zealand (2.2), Argentina (1.2), Australia (1.1), and Brazil (1.1), while in Botswana the ratio is almost 1 to 1. The world average is 0.13 head of cattle per person, and the ratio in the United States and the European Union are 0.29 and 0.18 respectively. *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*, Tomo II, Parte II (Montevideo, 1911); FAS/USDA, *Livestock and Poultry: World Markets and Trade* (Washington, 2017).

This dissertation can challenge both ‘before and after’ narratives because the rise of capitalist livestock agriculture was the main driver of ecological change as well as economic development in nineteenth-century Uruguay. It will do so by interrogating the ‘before’ in light of the ‘after’, asking to what extent the vast anthropogenic landscape transformation and the regionally leading income levels associated with Uruguay’s export-oriented agriculture preceded its ‘modernization’, and considering the historical legacies of the dynamic relationship between ecological change and economic development.

2 Approach

Because this dissertation is driven by questions rather than by the intention of exploiting a dataset or testing a theory, the empirical toolkit is a varied one, chosen to fit the challenges each chapter faces and the nature of the primary material available. Since the period chosen is unusually long, deliberately crossing the traditional watersheds of colonial/post-colonial (c.1810-1830) and ‘pre-modern’/‘modern’ (c.1870-1880) periodizations, sources for economic history are of diverse volume, quality, and survival rates: encouraging but patchy for the late-colonial years, at their scarcest in the decades following independence, more generous and consistent during the First Globalization. Working across archives and libraries in Uruguay, Argentina, and the UK, this dissertation relies on a wide range of sources, from manuscript ledgers kept by the colonial viceroyalty in the late 1700s to printed statistical reports produced by the modern republic in the early 1900s, but also on records left by individual people, ranches, and corporations.

This eclectic body of sources are combined with a careful consideration of present-day scientific literature on the historical ecology of Uruguay’s grasslands. The discussion focuses on nature-economy interactions, asking how local environments sustained agrarian development as well as how that development transformed the specific natural resources that gave rise to it. Throughout, I tried to count what could be meaningfully quantified, narrate stories which could not, and deploy statistical methods to extract the message from large datasets when the sources allowed me to construct them. As a result, distant but interconnected methodological paths are explored, from econometrics and historical economic geography to the reconstruction of occupational structures and micro-historical gazes on individuals and localities.

If sources are eclectic by necessity, my approach to theory is so by choice. This is a practical decision rather than an ideological one: being flexible allowed me to fruitfully engage with evidence and conclusions from different schools and eras of economic historiography on rural development in Uruguay, Latin America, and the wider world. Thinking about ‘agrarian capitalism’—a system in which rural economic resources, including mostly privately-owned land and mostly free labour, are allocated chiefly through markets⁸—facilitates a dialogue with the vast and influential scholarship of the 1960s and 1970s, when the

⁸ Chapter 1 offers a fuller discussion of the concept (pp. 39-41).

economic past became the chief concern for historians of Latin America. Some of the debates of the time, notably the obsession with figuring out which ‘mode of production’ colonial Latin America should be shoehorned into, are best let lie, but that is not reason enough to put that entire historiography on the discard heap.⁹ This dissertation also tries to learn from the careful consideration of gender and of the everyday, pioneered by rural historians in the 1980s, which challenged several macro-narratives of the region’s economic past. Finally, I will not shy away from relying on mainstream economic theory or deploying econometric methods when they can add to understanding, bringing much of the analysis closer to the language and argumentative style of new economic historians.

A flexible approach to theory is also useful in that it lends itself better to interdisciplinary readings, which in this thesis encompass three concentric circles. First, within the sub-disciplines of history, the approach chosen here defines ‘economic history’ broadly (i.e. research into the economic past, whether it uses the tools of the economist or not), and it makes an effort to bring it into a closer dialogue with environmental history. Second, within the wider circle of the social sciences, this dissertation is an attempt to do ‘social science history’, that is, to use the methods and the language of social scientists (in my case, of geographers as well as economists) to analyse the past. Third, in explaining long-term agricultural development, I ventured beyond the realm of the social sciences into the natural ones. My intention has been to grasp the general message of relevant research in animal and plant science, and the reader will find nothing more sophisticated than that in this dissertation. But, as the law of marginal returns suggests, I benefitted enormously from the very basic knowledge I gained from reading and conversing with life scientists. Some questions for which I would have looked for answers in markets or institutions had instead straightforward technical or biological explanations.¹⁰ This helped me to ask better questions to the sources and to be parsimonious about my answers: if something was explained by the natural processes at play, there was no immediate need to come up with political or cultural rationales for it. Moreover, the evidence of contemporary agronomy is especially relevant to understand past farming systems in the Uruguayan case because many of the techniques of livestock agriculture—pasture-based grazing, open-air herd management on horseback, early calving—have changed remarkably little in the long term when compared to the system of landholding, the set of labour relations, or the technologies for the processing and marketing of livestock by-products.

⁹ Positions varied from an adherence to the canonical list of modes of production explicitly mentioned by Marx (which led many to argue that colonial Latin America had to be ‘feudal’) and issuing modes *à la carte* (a ‘colonial mode of production’ with many variants); see the debate between Ernesto Laclau, ‘Feudalismo y capitalismo en América Latina,’ in *Modos de Producción en América Latina*, ed. Carlos Sempat Assadourian, et al. (Buenos Aires, 1973) and Andre Gunter Frank, ‘Dependence is dead, long live dependence and the class struggle: an answer to critics,’ *World Development* 5, 4 (1977). A survey of the Latin American controversy is Colin Henfrey, ‘Dependency, modes of production, and the class analysis of Latin America,’ *Latin American Perspectives* 8, 3-4 (1981); for a global overview, see Aidan Foster-Carter, ‘The modes of production controversy,’ *New Left Review* 1, 107 (1978).

¹⁰ Several of these will become apparent in the chapters that follow. A persuasive plea, in West African context, for social scientists to study farming systems with greater care can be found in Paul Richards, ‘Farming systems and agrarian change in West Africa,’ *Progress in Human Geography* 7, 1 (1983).

3 Style, standpoint, and structure

Like most research in economic history, this dissertation is primarily concerned with explanation: what was the resource basis and the environmental *causes* and *consequences* of Uruguay's rural development before 1913? But rather than a piece of historical economics, it is an attempt at *history*, that is, at telling true stories about the past to evoke other ways of life, often very different from our own.¹¹ In practice this means that the reader will encounter frequent changes in style and tone: narrative history being framed by the analysis of structures, the lean quantitative contours of livestock production marbled by the lives of individual, named rural people. These are, after all, only two modes of presenting ideas and evidence and I see no reason why economic historians should give one of them up: descriptive prose and the sparse lines of graphs have nothing to fear from each other.

The standpoint chosen is rural and local, but not narrowly so: an important concern is to understand the changing dynamics between city and country as well as the connections between global processes and local scenarios. External demand from global markets was a necessary condition for the agricultural transformations that this dissertation studies, and many of them reshaped urban spaces more rapidly and intensely than rural life. But changes occurred only through local resources and rural strategies, and so the focus will be on them. All the while, a comparative perspective prevents hypotheses from becoming too provincial, recalibrating the sights to identify what is exceptional about nineteenth-century Uruguay and what is typical of Latin America, or even of agrarian societies in general. As Marc Bloch argued long ago, historians working on monographical studies can gain much from reading preceding scholarship 'on topics analogous to theirs, not only, as everybody does, concerning their own region, not even only, as almost everybody does, concerning neighbouring regions, but also, and this is forgotten too often, about more remote societies.'¹² The relevance of any case study, whether large or small, is greatly enhanced by thinking and reading comparatively. Thus, there is not a 'comparative chapter' in this dissertation: all look for relevant comparisons to make sense of Uruguayan economic history, and to make that history count beyond its chronological and geographical confines.

The chapters are therefore connected and make reference to each other, but should also stand on their own: each looks at a series of interrelated questions from a particular set of sources, and use different methodologies to make inroads into diverse aspects of Uruguay's long-term rural development. Following

¹¹ On history as the art and science of telling true stories about the human past, see John Arnold's brief and brilliant *History: A Very Short Introduction* (Oxford, 2000); a persuasive and entertaining defence of historical economics is Deirdre N. McCloskey, *Econometric History* (Basingstoke, 1987).

¹² 'Aux auteurs de monographies, il faut répéter qu'ils ont le devoir de lire ce qui s'est publié avant eux, sur des sujets analogues aux leurs, non seulement, comme ils le font tous, à propos de leur propre région, non seulement même, comme ils le font presque tous, à propos des régions immédiatement voisines, mais aussi, ce qui est trop souvent négligé, à l'occasion de sociétés plus lointaines' Marc Bloch, 'Pour une histoire comparée des sociétés européennes,' *Revue de synthèse historique* XLVI, XX (1928): 46. For a more recent defence of the comparative approach also as a way of writing historical case studies, see Jürgen Kocka, 'Comparison and beyond,' *History and Theory* 42, 1 (2003).

Chapter 1, which elaborates on theory and historiography, the next four chapters are divided chronologically in two parts. Each of these parts corresponds to a broad ‘spatial code’ for agrarian development, that is, a set of structures which shaped the economic use of rural landscapes.¹³ It also corresponds to a specific scholarly literature in ‘modern’ or ‘pre-modern’ Latin American economic history. Seldom defined, the concept of ‘modernization’ is associated with an export-led transition towards modern economic growth, mobilised by imported industrial technology and foreign capital, that took place in most Latin American economies c.1870-1913. ‘Modernization’ is used in this dissertation as a descriptive container for the purposes of engaging with historiography, but it is handled with care because it complicates comparative perspectives: describing 1850s Uruguay as ‘pre-modern’ would confuse most global historians. That transition to an industrial-era agricultural export economy is, in my telling, not the culmination nor the beginning of the story but its turning point.

Chapters 2 and 3 deal with the period before that turning point. Chapter 2 uses land, tax, credit, and employment records of both wage earners and slaves to describe the late-colonial agrarian economy, as well as qualitative sources to reconstruct the agricultural calendar and daily labour routines. It argues that the hybrid labour system of large colonial estancias, where free labourers worked alongside slaves and often under their direct supervision, was an efficient response to the specifics of local landholding structures, crop choices, and the patterns of cattle herd behaviour. Chapter 3 relies on local records to overcome the source hiatus following the demise of the colonial state. Economic historians have labelled the period immediately after independence (c.1830-1870) as ‘lost decades’ in Latin American history, but the contours of economic and ecological change in the Uruguayan countryside—the demise of slavery and the rise of sheep farming—can be glimpsed from the sources we do have, which should not be overlooked simply because the national state had not yet developed its record-keeping infrastructure.

In the aftermath of wire-fenced enclosures, chapters 4 and 5 focus on land and labour during the First Globalization. Chapter 4 uses a new spatially-explicit dataset of rural districts to explore, through regression analyses, the impact of unit sizes and soil types on the propensity to invest in cattle crossbreeding. The results show that latifundia (very large landholdings) were not any more or less likely to improve their cattle herds than smaller units: location and soils, rather than the size of holdings, determined the extent of agricultural intensification. Chapter 5 reconstructs the population geography and the occupational structure of Uruguay in the late-nineteenth and early-twentieth century to interrogate the long-standing claims that ‘modernization’ greatly limited economic opportunities for rural workers. It innovates by using not only censuses but also individual level records, including thousands of birth certificates, to provide evidence for productivity gaps within agriculture and between it and manufacturing. Finally, the Conclusion borrows title and inspiration from a seminal book on the economic history of an agrarian society which, from the perspective of nineteenth-century Uruguay, was extremely remote. It reflects on how the transformations of

¹³ Henri Lefebvre’s concept of ‘spatial code’ (introduced in *The production of space* (Oxford, 1991)) is defined and tailored to our present purposes in Chapter 1.

Uruguayan agriculture during the Great Divergence shaped the subsequent history of the country as well as the conditions for its future development.

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chapter one

Debates, Context, and Concepts

This chapter sets the stage for the rest of the thesis by introducing the reader to Uruguay in the long nineteenth century and its part in narratives of Latin American development. Because this dissertation takes an eclectic approach to theory and methodology, what follows is not a systematic exposition of methods and sources (which will be presented as they are called upon), but a critical reflection on the most influential thesis surrounding long-running debates in Latin American and Uruguayan economic history. Besides staking a position in those debates, this first chapter identifies a series of issues and hypothesis which then are taken up in greater detail and with new evidence in subsequent ones.

The aim throughout is to foreground how a resource perspective on Uruguayan historical rural development can contribute to our understanding of Latin America's relative backwardness and on the implications of this story for global economic history, in particular regarding the place of geography in explanations of economic change in the past. The need to cross disciplinary boundaries is emphasised: if economic historians want to understand how the natural world interacts with long-term development paths, we have to learn from the experts on environmental change, whose understanding of geography is much more useful (and exciting) than the one generally implicit in our own sub-discipline.

Section 1 delves deeper into the debate about Latin America's long-term development, discussing the most influential explanations based on colonial origins, domestic institutions,¹ and factor endowments. Sections 2 introduces the chronological and geographical boundaries of the case study, and places it in comparative perspective. Section 3 surveys the main interpretive strands in the specialist literature on Uruguay's historical rural development and identifies old questions which remain open and new ones that need to be asked. Section 4 returns to conceptual issues: it defends the environment as a perspective and not merely as a set of 'initial conditions' for long-term economic development, and argues for its place on the stage beyond the first act in the stories economic historians tell.

¹ In the economic history literature, institutions are most commonly defined as 'the rules of the game, the patterns of interaction that govern and constrain the relationship of individuals' including 'formal rules, written laws, formal social conventions, and informal norms of behavior' and 'the means by which rules and norms are enforced.' Douglass C. North, John Joseph Wallis, and Barry R. Weingast, *Violence and Social Orders: a conceptual framework for interpreting recorded human history* (Cambridge, 2009): 259. See also the seminal North, 'Institutions'.

1 Who is to blame for Latin American backwardness?

No Latin American country is considered a developed economy, and rightly so: most of the region is in the bottom half of the global income distribution, inequalities between households and communities are notoriously world-leading, and basic physical infrastructure is sorely lacking across large swathes of the continent.² And yet, the region has undoubtedly developed: the secular trend since we have reliable figures is, despite its unevenness, one of substantial improvements in poverty alleviation, educational attainments, and life expectancy. Indeed, some Latin American countries have become fairly affluent by global standards. Uruguay is one of the smallest economies in the continent, but it is a good site to think about Latin America's divergent development, because despite the fact that it has failed to catch-up with the West, it is classified as a high-income economy by the World Bank, enjoys a high Human Development Index rating, and boasts the lowest levels of income inequality in the region.³

If there is one challenge that economic historians of Latin America cannot renounce it is to explain the region's secular failure to converge towards the material standards of living of the leading world economies, not least to the two very rich neighbours to the north—Canada and the United States. So who is to blame for Latin American relative backwardness? In academic circles, as well as in the political arena, three suspects have been repeatedly brought in for questioning throughout the decades. While many scholars would agree they acted together, the quest for the prime suspect continues. This section surveys the most influential answers in the comparative literature, and tests them using the case of Uruguay in comparative perspective. Uruguay is of course not representative of Latin America as a whole: it is far smaller than its immediate neighbours and, like all cases, has its peculiarities. In many ways it could be seen as an outlier because of its archeologically shallow pre-colonial past, its unusually short colonial history, and its extraordinary ecological homogeneity when compared to almost every other Latin American country. But that is, I will argue, precisely the point: explanations for Latin American backwardness should be tested also when trying to account for differences within the continent. And those were, and continue to be, very large indeed.

² Prevailing popular views about Latin America seem to believe some of these features of backwardness are somehow part of Latin America's 'essence'. A 2003 article in *The Economist* began: 'Inequality is as Latin American as good dance music and magical-realist fiction.' Nov. 6th, 2003.

³ World Bank Country & Lending Groups, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>; UNDP, *Human Development Report 2019* (New York, 2019); UN ECLAC, *Panorama social de América Latina 2019* (Santiago, 2019): 22.

1.1. Colonial origins

‘For those who see history as a competition, Latin America’s backwardness and poverty are merely the result of its failure. We lost; others won. But the winners happen to have won thanks to our losing.’⁴ The opening pages of Eduardo Galeano’s *Open veins of Latin America* (1971), incidentally the most widely translated and reprinted book ever written by a Uruguayan, took the *dependentista* interpretation, then in full swing in Latin American universities, to a much larger audience across the continent and beyond. Europe, through the Iberian powers, had extracted wealth and sweat from Latin America and set the region on an underdevelopment trajectory.⁵ In *dependentista* scholarship this was framed as part of a wider critique of imperialism and what scholars in that tradition saw as its continued role in Latin American poverty and inequality.⁶ Imperial influences extended beyond the formal empires of Spain and Portugal (as well as France in the case of Haiti, almost always included in this literature), to encompass the ‘neo-colonial’ designs of Britain in the late-nineteenth century and the United States in the twentieth. The argument about neo-colonial extraction exerted much less of an influence in later global economic historiography, perhaps because it has been generally accepted that Latin America had already fallen behind before Anglo-American ‘neo-imperialism’ appeared on stage. Whether Anglo-American interventions (from Britain’s ‘informal empire’ to the United States’ military invasions) played a part in stifling Latin American development is a question in dire need of more (and better) quantitative evidence, and should become fertile ground for the methodological tools of the new economic history in order to test *dependentista* claims in a rich historical context.⁷ I look forward to tackling that issue in the future; it falls beyond the scope of this dissertation.

⁴ Eduardo Galeano, *Open veins of Latin America* (New York, 1973): 2. The original Spanish edition was published in 1971 simultaneously in Montevideo by Universidad de la República and in Mexico City by Siglo XXI, and it had an immediate political impact in those cities and almost everywhere in between; see Isabel Allende, ‘The Open Veins of Latin America,’ *Monthly Review* 48, 11 (1997). Despite its many empirical limitations and its, in my view, mistaken thesis, the book continued to be for many young Latin Americans throughout the decades (including the one writing this) a stimulating first encounter with their continent’s economic history.

⁵ To square the successful Iberian extraction of Latin America’s resources with the relative backwardness of Spain and Portugal within Europe, *dependentistas* pointed out that those resources ultimately fuelled north-western European industrialization: in Galeano’s much-cited metaphor ‘Spain owned the cow, others drank the milk.’ *Open veins*, 22.

⁶ In the social sciences, two of the most influential versions were Fernando Henrique Cardoso and Enzo Faletto, *Dependency and Development in Latin America* (Berkeley, 1979) and Andre Gunder Frank, *Capitalism and Underdevelopment in Latin America* (New York, 1967). Within historical writing, a representative and influential English-language study in the *dependentista* tradition is Stanley J. Stein and Barbara H. Stein, *The Colonial Heritage of Latin America: Essays on Economic Dependence in Perspective* (New York, 1970). Classics in the Spanish and Portuguese language scholarship are Sergio Bagú, *Economía de la Sociedad Colonial. Ensayo de Historia Comparada de América Latina* (Buenos Aires, 1949) and Celso Furtado, *Formação Econômica da América Latina* (Rio de Janeiro, 1969).

⁷ Recent contributions which show there was a negative impact are Noel Maurer, ‘The Empire Struck Back: Sanctions and compensation in the Mexican oil expropriation of 1938,’ *JEH* 71, 3 (2011); Xavier Duran and Marcelo Bucheli, ‘Holding Up the Empire: Colombia, American oil interests, and the 1921 Urrutia-Thomson Treaty,’ *JEH* 77, 1 (2017).

But as far as Iberian colonialism is concerned, there are loud—and largely unacknowledged—echoes of *dependentista* voices in the currently dominant institutionalist interpretations of economic divergence between North and Latin America. This is more evidently the case with Northian institutionalism, dominant in the 1990s, which emphasised how pernicious the Iberian cultural and institutional legacy was for long-term economic development; but it is also true, perhaps more subtly but not less consequentially, in the neo-institutionalist orthodoxy of the early twenty-first century, epitomised by the highly stimulating and hugely influential work of Acemoglu, Johnson, and Robinson (AJR).⁸ Let us look more closely.

The first, 'new institutional economics' version tied development prospects to the predominant national identity of European settlers and the institutions they brought with them. North and Landes were two of the main proponents of this thesis, which essentially transplanted to the Americas a cultural rationale for the economic leadership of Britain vis-à-vis the rest of Europe. North argued that Spanish American 'failure' was a consequence of 'a centralized monarchy in Castile (...) that defined the institutional evolution of both Spain and Latin America' through 'a minute regulation of the economy.'⁹ In Latin America, Landes claimed, 'the skills, curiosity, initiatives, and civic interests of North America were wanting' because Spain exported 'its weaknesses': 'its spiritual homogeneity and docility, its wealth and pursuit of vanities.'¹⁰ This culturalist argument can be traced back in modern European thought at least to Max Weber, and also has a venerable tradition in Latin American thinking.¹¹ Already in 1889 the Cuban intellectual and political leader José Martí offered a succinct formulation: 'North America was born of the plough, Spanish America of the hunting dog.'¹²

Despite extensive work by historians of colonial Latin America challenging that perception, the idea of a monolithic institutional template prevailing throughout a centralist, bureaucratic and extractive Spanish empire in the New World remains hugely influential as a historical background for development economists and political scientists working on Latin America.¹³ The economic history of Uruguay in the long-

⁸ The best critical discussion of the 'new institutionalist orthodoxy' in relation to Latin America's colonial legacy and long-term development is Rafael Dobado González, 'Herencia colonial y desarrollo económico en Iberoamérica: una crítica a la "nueva ortodoxia"', in *Latinoamérica y España, 1800-1850: un crecimiento económico nada excepcional*, ed. Enrique Llopis and Carlos Marichal (México, 2009).

⁹ North, 'Institutions', 1329; cf. Regina Grafe and Maria Alejandra Irigoin, 'The Spanish Empire and its legacy: fiscal redistribution and political conflict in colonial and post-colonial Spanish America,' *Journal of Global History* 1, 2 (2006).

¹⁰ Landes, *Wealth and Poverty*, 312.

¹¹ For Landes culture held all the answers: 'Max Weber was right. If we learn anything from the history of economic development, it is that culture makes almost all the difference.' Weber's famous, and by now largely discredited, thesis linked Protestantism with economic rationality and the rise of capitalism. David S. Landes, 'Culture Makes Almost All the Difference,' in *Culture Matters: How Values Shape Human Progress*, ed. Samuel P. Huntington and Lawrence E. Harrison (New York, 2000); Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London, 1930).

¹² 'Del arado nació la América del Norte, y la Española, del perro de presa.' José Martí, *Discurso en la Sociedad Literaria Hispanoamericana*, December 19th 1889.

¹³ María Alejandra Irigoin and Regina Grafe, 'Bargaining for Absolutism: a Spanish Path to Nation-State and Empire Building,' *HAHR* 88, 2 (2008).

nineteenth century falsifies such a generalization: if Spanish colonial institutional heritage is congenitally incompatible with economic prosperity, then the globally leading living standards in Uruguay (and in next-door Argentina) at the turn of the twentieth century are difficult to explain. Regional variation across Latin America is, I would argue, the strongest evidence against what Frankema has termed the ‘metropolitan institutions perspective’ on the New World divergence.¹⁴

A more recent variation on this theme emphasises not metropolitan political culture but metropolitan real wages, and argues for their impact through migration and labour markets. Allen, Murphy, and Schneider (AMS) argue that between colonization and independence North American cities were already the most prosperous in the world, whereas Latin America’s lagged behind. Those initial differences in wages explain, in their view, long-term divergence in per capita incomes, and are in turn explained by contemporary real wages in London and Madrid.¹⁵ While it could be persuasive from a region-wide perspective, this argument fails to explain the very significant real wages differentials within colonial Spanish America that become apparent when the barebones subsistence baskets are adjusted to include local dietary preferences. Attempts to construct real wages for colonial Montevideo have failed to produce plausible results, I think, because they persist in using a European basket as a model, which substitutes cheap local beef with expensive pulses.¹⁶ Indeed, when the consumption basket across the river in colonial Buenos Aires is modified from a generalised, and quasi-vegetarian, ‘Latin American basket’ (as the one used in AMS’s estimates) to allow for significant consumption of beef (which makes historical sense, both in terms of the pattern suggested by qualitative sources and relative food prices), real wages there turn out to be amongst the highest in the world.¹⁷ Arroyo Abad, Davies, and van Zanden have documented these substantial differences in real wages between Latin American cities in colonial times, which suggest that the settlers’ wages in their labour market of origin were not as influential as AMS posit.

But let us turn to the most influential and in my view most sophisticated versions of ‘colonial origins’ arguments. AJR’s two major contributions to this literature are a decisive improvement over its neo-Weberian precedent (and remain, in my opinion, better than AMS’s attempt) because they have the potential to account for variation within Latin America.¹⁸ Even if, in my view, they fail on that count, both their

¹⁴ Ewout Frankema, *Has Latin America Always Been Unequal? A Comparative Study of Asset and Income Inequality in the Long Twentieth Century* (Leiden, 2009): 45.

¹⁵ Robert C Allen, Tommy E Murphy, and Eric B Schneider, ‘The Colonial Origins of the Divergence in the Americas: A Labor Market Approach,’ *JEH* 72, 4 (2012): 888.

¹⁶ Cf. María Inés Moraes and Florencia Thul, ‘Los salarios reales y el nivel de vida en una economía latinoamericana colonial: Montevideo entre 1760-1810,’ *Revista de Historia Económica* 36, 2 (2017).

¹⁷ Leticia Arroyo Abad, Elwyn Davies, and Jan Luiten van Zanden, ‘Between conquest and independence: Real wages and demographic change in Spanish America, 1530–1820,’ *EEH* 49, 2 (2012). Even today Uruguay and Argentina top the international rankings of beef consumed per capita, with more than 120 pounds per person per year. FAS/USDA, *Livestock*.

¹⁸ Daron Acemoglu, Simon Johnson, and James A. Robinson, ‘The Colonial Origins of Comparative Development:

contributions deserve the attention and reflection of global economic historians. In their 2001 article, AJR point not to the national identity of the colonisers but to the colonisation policies they adopted as a result of the mortality rates they faced. The empirical basis for this claim are constructed through cross-country regressions showing that initial settlement practices determined early institutions (particularly rules concerning private property and constraints on executive power) which persisted after independence and explain long-run (and indeed present-day) economic performance. Where settlers faced low levels of potential mortality, they attempted to replicate European (i.e. ‘good’) institutions; where Europeans were more likely to die as a result of the local disease environment the institutional response was to set up ‘extractive states.’¹⁹

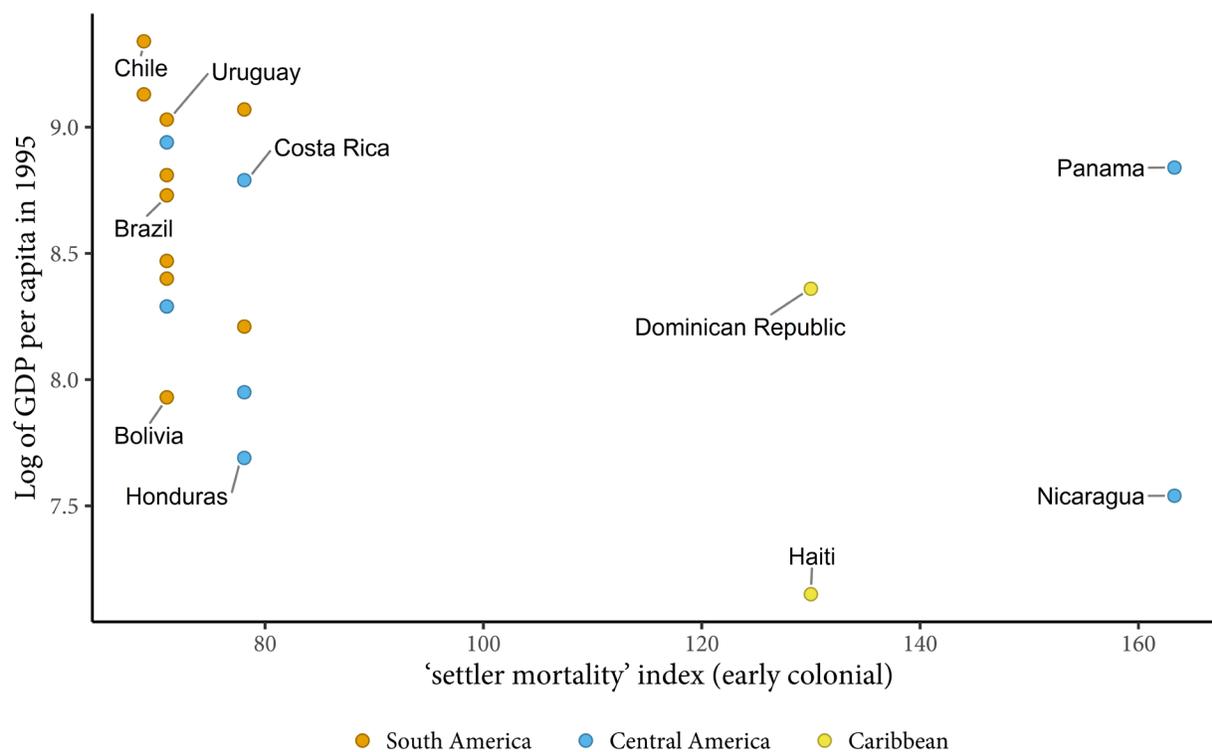
Latin America in general, and Uruguay (together with Argentina and Chile) in particular, present a problem for AJR’s analysis. Even if we assume that their choice of evidence on settler mortality is plausible (a big if, as Albouy has shown) and that it constitutes a strong instrumental variable (which was persuasively challenged by O’Brien), their version of the colonial origins thesis fails to explain variation within South America, Central America, or the ‘Latin’ Caribbean.²⁰ If we reproduce AJR’s main regression with their own dataset, specifications and scale, but plotting only Latin American countries, the correlation between colonial settler mortality and income per capita in 1995—the cornerstone of their argument—largely disappears, with only four outliers showing some significant variation in the independent variable (Graph 1.1). Observed together, the differences between these four cases (Panama, Dominican Republic, Nicaragua, and Haiti) are evidence against the hypothesis, as they all had high levels of ‘settler mortality’ related to their disease environments, but show substantial income divergence in 1995. There is also no correlation between the two variables within Central America and the ‘Latin’ Caribbean more broadly.

An Empirical Investigation,’ *AER* 91, 5 (2001); Acemoglu, Johnson, and Robinson, ‘Reversal of Fortune.’ Two of the authors have since reached a much broader audience with their message in Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (New York, 2012).

¹⁹ Acemoglu, Johnson, and Robinson, ‘Colonial Origins.’

²⁰ David Y. Albouy, ‘The Colonial Origins of Comparative Development: An Empirical Investigation. Comment,’ *AER* 102, 6 (2012); Patrick O’Brien, ‘Colonies in a globalizing economy, 1815-1948,’ in *Globalization and Global History*, ed. Barry K. Gills and William R. Thompson (London, 2006).

GRAPH 1.1. Testing AJR's 'colonial origins' within Latin America
(using the same specifications and dataset as the original paper)



Notes: only some countries are labelled to avoid overcrowding the figure. AJR do not include Cuba; to be able to reproduce their exercise, I also exclude it here. Most of Mexico is not strictly in Central America, but geographically in North America and historically in 'Mesoamerica'; for simplicity, the category 'Central America' includes Mexico here. Source: author's recalculation of the data in Acemoglu, Johnson, and Robinson, 'Colonial Origins', 1398.

Neither does 'settler mortality' in colonial times explain income differences within South America in 1995. Given that any approach that tries to account for Latin American backwardness must also explain variation within the subcontinent, the case of Uruguay, as well as Argentina and Chile, are difficult to fit into AJR's conclusions, as they had virtually the same levels of colonial 'settler mortality' as Bolivia and Guatemala but enjoyed considerably higher living standards in 1995 (and the gaps are even bigger in 2020). Perhaps this is why even though AJR cite Donald Denoon's classic work as historiographical support for the exceptionalism of 'settler colonies' as those which had 'representative institutions which promoted what the settlers wanted and what they wanted was freedom and the ability to get rich by engaging in trade,' they fail to mention that Denoon's understanding of 'settler capitalism' encompasses Argentina, Uruguay and Chile (and indeed South Africa), whereas AJR only Australia, New Zealand, Canada, and the United States.²¹

²¹ Acemoglu, Johnson, and Robinson, 'Colonial Origins', 1374; Donald Denoon, *Settler Capitalism: The Dynamics of Dependent Development in the Southern Hemisphere* (Oxford, 1983).

In a 2002 article, AJR articulated an influential variation: the ‘reversal of fortunes’ (RF) thesis. Again, to a large extent AJR replicate and extend to diverse parts of the world, apparently without realising so, an argument with a long and distinguished pedigree in Latin Americanist scholarship, namely that the density and organization of pre-Columbian populations determined the kind of institutions that Europeans established after conquest.²² They further argue that the effects of said institutions (and indeed some of those institutions themselves) persisted over five centuries and contribute to explain the world income distribution today. The authors rely on Uruguay, as well as neighbouring Argentina, to advance their argument, comparing them with Guatemala and Bolivia respectively. In their account, as areas with very low urbanization rates at the time of European conquest, Argentina and Uruguay gave way to more ‘inclusive institutions’ and economies with ‘little forced labour’, which would explain their present-day prosperity relative to areas more densely populated at the time of Spanish arrival.²³ A pattern of ‘little forced labour’ in the colonial River Plate, however, is simply not supported by the sources, as Chapter 2 of this dissertation will show in detail. The colonial rural economy produced a hybrid pattern of labour relations, which relied on both slave and free labour in changing ratios determined by seasonality and by short-term fluctuations in demand, with the largest and most export-oriented estancias employing more slaves than free workers for the majority of permanent tasks. Uruguay’s rural economy in particular, despite being consistently classified by historians as a ‘society with slaves’ rather than a ‘slave society’, relied on slave labour to a large extent after independence as well, as Chapter 3 will prove.²⁴

Furthermore, the danger of compressing history which Austin pointed out mainly in reference to Africa also applies to AJR’s analysis of Latin America: there is simply too much history between the first Iberian settlements and the late twentieth century.²⁵ In fact, by the early 1700s—long after Spanish conquest—the Bolivian *altiplano* (colonial Upper Peru) was still richer than the River Plate: Potosí was the largest urban and trading centre in the Western Hemisphere, and only second to Seville in the Spanish empire.²⁶ The ‘reversal’ between these two areas was a result of the eighteenth century decline of Upper Peruvian silver mining and the rise of the livestock export economy in the late-colonial River Plate, both endogenous economic developments that cannot be traced back to Spanish conquest and initial settlements. The story then became one of persistence (and indeed deepening) of fortunes over the nineteenth century. Afterwards, the trend changed towards convergence between Latin American economies in general, and Bolivia experienced significant catching-up with Argentina and Uruguay until a series of crises in the late-twentieth

²² Stein and Stein expressed it succinctly already in 1970: ‘had the Englishmen found a dense and highly organized Amerindian population, the history of what is called the United States would record the development of a stratified, bi-racial, very different society.’ Stein and Stein, *Colonial Heritage*, 128.

²³ Acemoglu, Johnson, and Robinson, ‘Reversal of Fortune’, 1244, fn. 18.

²⁴ The classic use of the ‘slave economy/society with slaves’ distinction in Latin American economic historiography is Cardoso and Pérez-Brignoli, *Historia económica*.

²⁵ Austin, ‘Compression of History’.

²⁶ Jane E. Mangan, *Trading Roles: Gender, Ethnicity, and the Urban Economy in Colonial Potosí* (Durham, 2005).

century.²⁷ Coming up with a single label (whether it is ‘persistence’ or ‘reversal’) for the comparative development of these two regions would obscure more than it would explain.

Similarly, when AJR argue that income differences between Uruguay and Guatemala have not only reversed from 1500 to 1995 but that ‘are now much larger’ than they once were, they are missing centuries of change.²⁸ According to their figures, in 1500 ‘Guatemala’ was 42 percent richer than ‘Uruguay’, and in 1995 Uruguay was 105 percent richer than Guatemala. This simple story changes when we take into consideration that by 1920 Uruguayan incomes were 250 percent higher than Guatemala’s, pointing to a ‘reversion of the reversal’ during the twentieth century, with the Guatemalan economy outperforming Uruguay significantly.²⁹ This also puts the ‘original’ reversal into perspective: when did it start and how long did it last for? The Uruguay-Guatemala comparison demonstrates how merely adding a third observation complicates the narrative, and makes the whole process messier and more dynamic, i.e. more historical.

Below present-day inequalities, within Latin America and elsewhere, there are many historical layers. Looking at the diverse and changing fortunes of Latin American economies through time highlights the dangers of what Bloch called ‘the idol of origins’:³⁰ not all of Latin American economic history was perfectly contained within the seeds of Iberian colonization. But even as a set of explanations connecting the colonial period to the present, the institutionalist orthodoxy is exceedingly narrow. Both ‘old’ and ‘new’ institutionalism focus almost exclusively on colonial *origins*: the explanatory variables are not institutions or processes which developed throughout the colonial period, but only factors limited to its onset. All the weight is placed upon the *original* identity of the colonisers or the institutions set up during *initial* colonization. Indeed, no consideration is given to how the duration of the colonial period—notably varied across the region—could have affected colonial institutions or their legacy. While most of the region gained its independence sometime between the 1800s and 1820s, ‘colonial origins’ themselves have very different chronologies depending on the country. The beginning dates for military conquest and, even more importantly for our purposes, the setting up of colonial economies varied hugely across Latin America: the earliest was in the island of Hispaniola, where Spanish mills were producing molasses as early as 1515; the latest in Uruguay, where the first colonial estancias to slaughter cattle were set up in the 1670s.³¹ This lack

²⁷ Alfonso Herranz-Loncán and José Alejandro Peres-Cajías, ‘Tracing the reversal of fortune in the Americas: Bolivian GDP per capita since the mid-nineteenth century,’ *Cliometrica* 10, 1 (2016); Bértola and Ocampo, *Economic Development*, 258-61.

²⁸ Acemoglu, Johnson, and Robinson, ‘Reversal of Fortune,’ 1244.

²⁹ The figures are taken from Jutta Bolt, Robert Inklaar, Herman de Jong, and Jan Luiten van Zanden, ‘Rebasing “Maddison”: new income comparisons and the shape of long-run economic development,’ *Maddison Project Working Paper*, 10 (2018).

³⁰ Marc Bloch, *Apologie pour l’histoire, ou métier d’historien* (Paris, 1949): 19-23.

³¹ Genaro Rodríguez Morel, ‘The Sugar Economy of Española in the Sixteenth Century,’ in *Tropical Babylons: sugar and the making of the Atlantic World, 1450-1680*, ed. Stuart B. Schwartz (Chapel Hill, 2004); Julia Sarreal, *The Guaraní and Their Missions: A Socioeconomic History* (Stanford, 2014): 65-92.

of attention to something as crucial as the duration of colonial experience is one of the major weaknesses of this strand of institutionalist economic history in its approach to Latin America's long-term development, and is emblematic of its wider 'compression of history' problem.³²

1.2. Domestic institutions

A second group of institutionalist interpretations move beyond colonial origins to consider the persistent effect of practices that developed in Latin America in a colonial or early-independent setting. These are also part of the 'history matters' movement in development economics, but for them the key to understanding Latin American economic backwardness is not to be found in the initial policies or rules of Iberian colonization but in the institutions that developed throughout the colonial period and/or in the aftermath of independence.³³ There are three major strands, emphasising different institutions and conjunctures: the 'persistence school' identifying colonial economic institutions which set countries or particular regions on a growth-limiting institutional path; the 'legal origins' scholars emphasising the development of different frameworks for economic activity; and the proponents of the 'lost decades' thesis who argue the cycle of political unrest and civil strife following independence was the defining moment for Latin American institutional trajectories.

In 'persistence' studies a particular historical institution is identified, defined as a 'treatment' applied to some regions and not others, and then its effects on long-term development are calculated and the mechanisms behind them are discussed. Melissa Dell's research into the very long-term negative effects of the *mita* system of labour coercion in Peru continues to spark studies into the persistent legacy of other colonial institutions (some of which continued to exist after independence), including missions, monastic orders, and slavery.³⁴ It can only be assumed that this literature will continue to expand, in a gold rush for

³² Austin, 'Compression of History'.

³³ Referring to a common feature of the titles or first sentences of such articles, Jan de Vries has coined the expression 'history matters movement' to name this fast-growing economics and social science literature devoted to studying path-dependent processes in historical data sets containing 'natural experiments'. Many historians are rightly shocked to read about 'proofs' that 'history matters' to understand development, a finding that hardly needed discovering. Jan de Vries, 'Changing the Narrative: The New History That Was and Is to Come,' *Journal of Interdisciplinary History* XLVIII, 3 (2018): 328; Nathan Nunn, 'The importance of history for economic development,' *Annual Review of Economics* 1, 1 (2009).

³⁴ Melissa Dell, 'The persistent effects of Peru's mining mita,' *Econometrica* 78, 6 (2010); Felipe Valencia Caicedo, 'The mission: Human capital transmission, economic persistence, and culture in South America,' *QJE* 134, 1 (2019); Maria Waldinger, 'The long-run effects of missionary orders in Mexico,' *Journal of Development Economics* 127 (2017); Daron Acemoglu, Camilo García-Jimeno, and James A Robinson, 'Finding Eldorado: Slavery and long-run development in Colombia,' *Journal of Comparative Economics* 40, 4 (2012). These results have been criticised by economic geographers for their lack of attention to the problem of spatial autocorrelation: Morgan Kelly, 'The Standard Errors of Persistence,' SSRN Working Paper, 2019. Chapter 4 will address this methodological problem as it relates to the impact of latifundia on agricultural innovation in Uruguay.

‘good, bad, and ugly colonial activities’ which can perhaps be correlated with better or worse outcomes in present-day development.³⁵ Again, this line of inquiry is not new in economic history, although because of its concern with the distant past it might have felt like a breath of fresh air to development economists. Classic works in Latin American economic historiography had famously argued for the persistent effect of colonial-era economic institutions, such as the sugar *ingenio* in Cuba, the *fazendas* of Brazil, and Uruguay’s ‘latifundist estancia.’³⁶ This dissertation hopes to show, through the analysis of the latter, that economic institutions have a history of their own, and their impact on growth and development is not always the same: they cannot be assumed to be tools of persistence because they are themselves subject to change. There were estancias in Uruguay’s countryside throughout the more than 130 years covered by this thesis, but their economic value, their impact on inequality, and the kind of commercial agriculture they practised changed through time. Chapters 2, 3, and 4 will show how social relations in estancias shifted dramatically in the nineteenth century, notably because of the demise of slavery, and so did productive strategies, as land became more valuable and new export commodities available. It would be unhelpful, not to mention quite boring, to instead debate whether the estancia as an institution was ‘good’ or ‘bad’ for Uruguayan historical development.

A second strand of the ‘domestic institutions’ approach is provided by the legal origins school. The time of ‘origin’ here is not the early-colonial period, but the aftermath of independence, when the newly independent Latin American states settled on a legal framework inspired by French law, partly as a result of the previous experience with Iberian colonial law, which was also based on the Latin civil law tradition. In the influential interpretation of La Porta, López de Silanes, and Shleifer the fact that North America’s legal system developed instead along an English common law path contributed to stronger financial markets and lower government regulation which—perhaps because their article was published just before rather than just after the 2008 financial crisis—the authors unequivocally associated with higher levels of economic development.³⁷ Other scholars have responded by emphasising ‘legal pluralism’ in the formerly colonised

³⁵ Miriam Bruhn and Francisco A Gallego, ‘Good, Bad, and Ugly Colonial Activities: Do They Matter for Economic Development?’ *Review of Economics and Statistics* 94, 2 (2012).

³⁶ This is a sprawling literature which I cannot survey here; seminal references for the cases mentioned are, respectively, Manuel Moreno Fragnals, *El ingenio: el complejo económico social cubano del azúcar* (La Habana, 1964); Gilberto Freyre, *Casa-grande e senzala: formação da família brasileira sob o regime de economia patriarcal* (Rio de Janeiro, 1936); Lucía Sala de Touron, Nelson de la Torre, and Julio C. Rodríguez, *Evolución económica de la Banda Oriental* (Montevideo, 1967). For a survey of research in the early 1970s into the history and effects of some of those institutions, see the contributions to Enrique Florescano, ed. *Haciendas, latifundios y plantaciones en América Latina* (Mexico City, 1975).

³⁷ Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, ‘The economic consequences of legal origins,’ *Journal of Economic Literature* 46, 2 (2008): 298; see also Edward L Glaeser and Andrei Shleifer, ‘Legal origins,’ *QJE* 117, 4 (2002). This argument had been articulated before by Jonathan RT Hughes, ‘What Difference Did the Beginning Make?’, *AER* 67, 1 (1977) and North, ‘Institutions’, and is very much espoused by development economists who emphasise the alleged lack of clearly-defined property rights as the crucial obstacle for development in parts of Asia,

world, and have shown how it was often not possible for local authorities (either national or colonial) to apply *pret à porter* legal systems imported wholesale from elsewhere. Indeed, a diversity of legal systems coexisted within colonial empires and even within a single colony, and colonial authorities were often quite reluctant to apply their own legal traditions or rules.³⁸ Chapter 2 of this dissertation will show that local conditions mattered more than legal traditions to determine effective rules surrounding land and labour during the colonial period when, at least in the letter, all of Spanish America was under a single code. In so doing it will falsify one crucial assumption of the ‘legal origins’ literature on the pivotal issue of access to agricultural land: that ‘English land law provided a legal and institutional basis for a relatively equal distribution of freehold land in the American colonies, while Spanish and Portuguese law led to the creation of large estates and unequal distribution of land throughout what would become Latin America.’³⁹

Finally, there are scholars who point to the political unrest following independence as the time when Latin American institutional trajectories went wrong. Chapter 3 deals with the problems of growth accounting in early-independent Latin America which affect the evidential backbone of the ‘lost decades’ thesis. For now it suffices to consider how a causal link between political violence in the aftermath of independence, ‘institutional breakdown’, and limits to economic growth has been used to explain Latin American backwardness.⁴⁰ The most influential framework in this stream of literature is North, Wallis, and Weingast’s binary model of ‘open access orders’ and ‘natural states’, later christened ‘limited access orders’: again an alternative between a set of ‘good’ and one of ‘bad’ institutions.⁴¹ In my view, one problematic methodological issue here is that the ‘open access order’ is in effect defined retroactively as requiring a set of threshold conditions that the authors identify from a dozen present-day developed OCDE economies (the rest of the world being considered ‘natural states’), and then cast backwards or sideways to other times and places—exactly the opposite of a ‘reciprocal comparison.’⁴² As in this literature all of Latin America is defined as ‘natural states’, the framework seems ill-suited to explain variation across the continent, and hence I would

Africa, and Latin America; see Hernando de Soto, *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (New York, 2000).

³⁸ See the overview in Leigh Gardner and Tirthankar Roy, *The Economic History of Colonialism* (Bristol, 2020): Box 7.1.

³⁹ North, Wallis, and Weingast, *Violence*, 77.

⁴⁰ Douglass C. North, William Summerhill, and Barry Weingast, ‘Order, Disorder and Economic Change: Latin America vs. North America,’ in *Governing for Prosperity*, ed. Bruce Bueno de Mesquita and Hilton Root (New Haven, 2000); Coatsworth, ‘Trajectories.’ For an unsuccessful attempt to quantify the effects of ‘institutional breakdowns’ on growth rates, see Rok Spruk, ‘The Rise and Fall of Argentina,’ *Latin American Economic Review* 28 (2019).

⁴¹ ‘Natural states’ solve the threat of endemic violence, which the authors identify as the core problem all societies deal with ‘through the formation of a dominant coalition whose members possess special privileges’; an ‘open access order’, by contrast, benefit from ‘impersonal markets and impersonal exchange’ which ‘prevents the political system from manipulating economic interests.’ North, Wallis, and Weingast, *Violence*, 18-25; see also Douglass C. North, John Joseph Wallis, Steven Benjamin Webb, and Barry R. Weingast, *In the Shadow of Violence: Politics, Economics, and the Problem of Development* (Cambridge, 2013).

⁴² For a definition of the principle of ‘reciprocal comparison’ in economic history, see Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton, 2000): 8.

argued cannot be trusted as a tool to explain Latin American historical economic backwardness. I find Schlueter's application of this framework to Uruguay in particular, in the context of the comparison with New Zealand, unpersuasive precisely because it is somewhat teleological: the label of 'limited access order' is applied to Uruguay at the beginning of the enquiry rather than arising as a plausible explanation when looking for answers to the gap in living standards between the two countries.⁴³ Furthermore, even if we consider 'limited access order' and 'open access order' as the boundaries of a continuum along which societies move, it is not always clear in which direction historical development is moving. Between Chapter 2 and Chapter 4 of this dissertation, Uruguay's rural economy became more 'open access' in some fundamental ways, such as by abolishing labour coercion, but more 'limited access' in others, as common rural folk were increasingly less able to obtain a plot of their own.

1.3. Geography and endowments

Because the Americas hold an immense range of geographical variation, a third group of general explanations for the inequalities in material standards of living between New World societies has concentrated on location and natural endowments. Following AJR's distinction, we can broadly differentiate between 'simple geography' hypotheses which point to time-invariant features resulting from a country's location as explanations for its development trajectory, and a group of 'sophisticated geography' interpretations that consider how the natural environment shapes patterns of economic development (including institutions) in particular conjunctures, and how that influence endures even if the geographical 'first movers' themselves change or become less important through time.

'Simple geography' hypotheses have a long genealogy in political and economic thought, which includes, but is not limited to, some rather crude versions very popular with late-nineteenth century elites in Uruguay and in other temperate-zone settler societies, as well as in Victorian Britain.⁴⁴ A much more interesting set of 'geography hypotheses' returned at the turn of the twenty-first century, with a series of studies emphasizing that coastal, temperate areas have the highest levels of 'economic density' (multiplying national average incomes by local population densities) in the world, whereas nearly all tropical countries are low income economies, three times poorer than the average temperate country.⁴⁵ Such explanations can

⁴³ Andre Schlueter, *Institutions and Small Settler Economies: A Comparative Study of New Zealand and Uruguay, 1870-2008* (Basingstoke, 2014).

⁴⁴ The idea that the physical environment, and climate in particular, directly defines the rhythms of social development is often traced back to Montesquieu's *De l'esprit des lois* (1758). On the Victorian hierarchy of climates and its racist overtones, see David N Livingstone, 'The moral discourse of climate: historical considerations on race, place and virtue,' *Journal of Historical Geography* 17, 4 (1991).

⁴⁵ The seminal paper is John Luke Gallup, Jeffrey D Sachs, and Andrew D Mellinger, 'Geography and economic development,' *International Regional Science Review* 22, 2 (1999); and, with specific reference to Latin America, John Luke Gallup, Alejandro Gaviria, and Eduardo Lora, *Is Geography Destiny? Lessons from Latin America* (2003). These

also seem at first sight very persuasive to account for historical economic inequalities across the Americas, as Graph 1.2 shows.

However, I agree with AJR's critiques of such explanations, which have been further elaborated and evidenced in a Latin American context by Nugent and Robinson through an effective comparison of coffee agriculture in Colombia, Costa Rica, El Salvador, and Guatemala.⁴⁶ First, latitude is by definition static, standards of living are not. If we chose a different benchmark year, say 1975 when the tropical oil-exporters were booming and Venezuela was richer than Uruguay, and Chile poorer than Ecuador, or sometime in the upswing of import-substitution industrialization, when large mostly tropical economies—Brazil, Colombia, Mexico—outperformed more lightly populated temperate-zone countries, then the relationship would no longer be so persuasive. It should be noted, however, that some of the explanatory factors (urbanization in 1500 in the 'Reversal of Fortunes') or instrumental variables (settler mortality in the beginning of colonization in 'Colonial Origins') used by neo-institutionalists themselves are every bit as static as latitude.

Second, a correlation or an instrumental variable does not an explanation make.⁴⁷ We should instead try to understand when and why latitude seems to correlate with higher incomes. In 1913, after decades of favourable terms of trade for primary producers, and especially so for temperate agricultural producers, latitude is just a stand-in for the commodity lottery. Countries in the Americas whose location allowed them to specialise in temperate-zone agricultural commodities (such as Uruguayan beef and wool) competed against high-income producers in Europe and Australasia and thereby reaped the benefits of international trade to a much larger extent than those who produced tropical agricultural commodities (coffee, cacao, bananas) for which the marginal world producer was a low-income economy.⁴⁸ In contexts when growth was less tied to export agriculture, such as the import-substitution era in the mid-twentieth century, latitude is less impressive as an apparent explanation of divergences in living standards across the Americas.

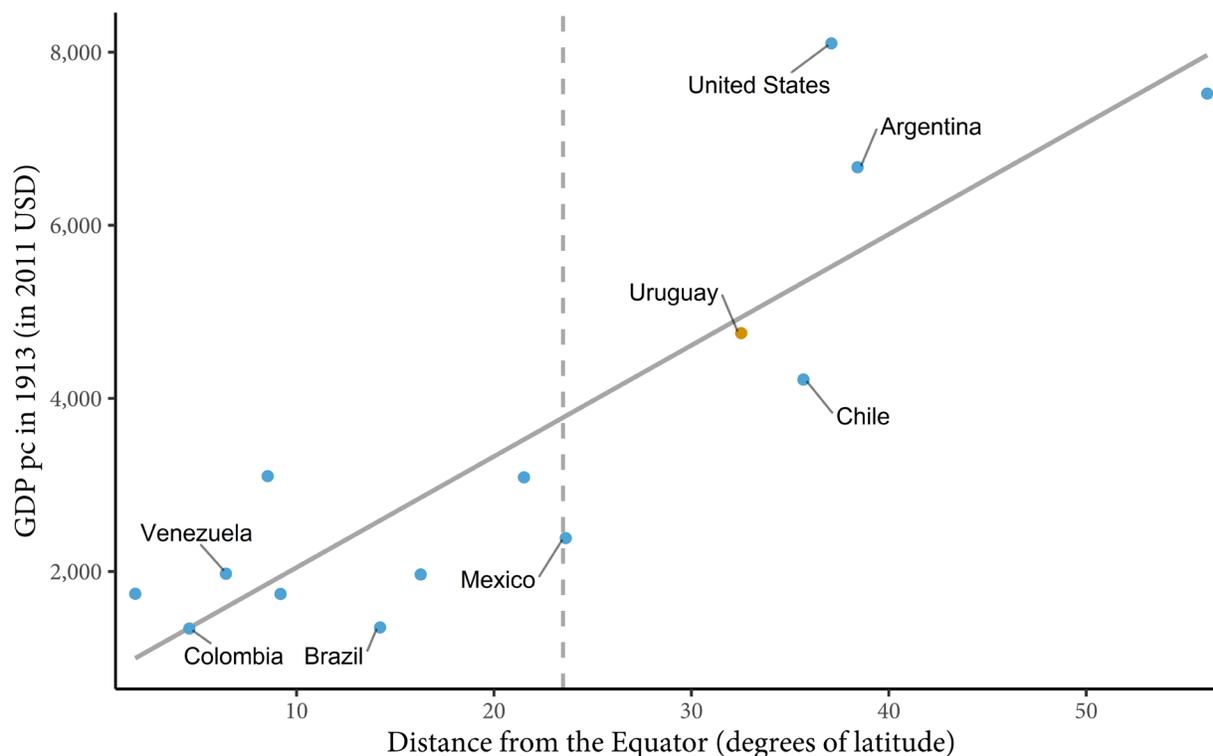
approaches were inspired by the extremely thought-provoking work of Diamond, *Guns, germs, and steel: the fates of human societies* (New York, 1997) which appeared a few years earlier.

⁴⁶ Jeffrey B. Nugent and James A Robinson, 'Are Factor Endowments Fate?', *RHE* 28, 1 (2010).

⁴⁷ On the difference between an instrumental variable and an explanation in the context of AJR's analysis, see Dani Rodrik, *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth* (Princeton, 2007): 185-86.

⁴⁸ Díaz Alejandro is credited with the idea of the 'commodity lottery', which was then popularised by Bulmer-Thomas in his classic economic history of Latin America. Carlos F. Díaz Alejandro, 'Latin America in the 1930s,' in *Latin America in the 1930's: The Role of the Periphery in World Crisis*, ed. Rosemary Thorp (London, 1984); Bulmer-Thomas, *Economic History*. For conclusive evidence of how the lottery was biased against tropical agricultural commodities in this period, and an interpretative model of its consequences, see Giovanni Federico and Antonio Tena-Junguito, 'Lewis revisited: tropical polities competing on the world market, 1830-1938,' *ECHR* 70, 4 (2017).

GRAPH 1.2. *Tristes tropiques?* Distance from the Equator and average incomes in 1913
 Distance calculated from the centroid of each country; dashed line = tropics



Notes: distance from the equator is calculated from the geometric centre of each country's mainland territory: to avoid having negative values, I have multiplied the southern latitudes (usually expressed as negative) by -1. Observations include every country in Latin America or North America with a per capita GDP estimate for 1913 in the Maddison Database. Only some observations mentioned in the discussion are labelled to avoid overcrowding the figure.

Sources: incomes from Bolt et al., 'Rebasing 'Maddison''; centroid latitudes from Google Public Data Explorer.

Similar weaknesses could be pointed out in the 'resource curse' narrative which has been applied to Latin America and many other contexts in the developing world, another 'simple geography' framework from which this dissertation deliberately steers clear. Depending on local conditions and global contexts, the discovery or expansion of natural resources can be a blessing or a curse, much like any other positive shock in a resource base (including fast population growth).⁴⁹ In particular, natural resources can sustain both specialization and diversification, a discussion Chapter 5 will engage with in when explaining structural change in Uruguay during the First Globalization.

But not all environmentally-based explanations of economic backwardness or development need be static. The best-known approach to long-term divergence in the Americas to successfully offer a

⁴⁹ For an overview of the natural resources as blessing or curse literature in development economics, see Frederick van der Ploeg, 'Natural Resources: Curse or Blessing?', *Journal of Economic Literature* 49, 2 (2011).

‘sophisticated geography’ perspective is Engerman and Sokoloff’s. In their view, the local environments European colonisers found in the New World shaped institutions and, in particular, the distribution of political power and economic resources.⁵⁰ With the exception of plantation crops, especially sugar, most New World agriculture did not benefit from economies of scale, which allowed widely different patterns of land distribution to emerge in different colonies. Those endogenous institutional responses to local geographical contexts defined different distributional arrangements which persisted after the initial endowments themselves changed, and, in Engerman and Sokoloff’s view, contribute to explain large gaps in literacy and political voice into the late-nineteenth and early-twentieth century, by which point the income gap between North and Latin America had widened immensely. This perspective is both analytically clear and historically nuanced. While acknowledging that all New World territories were in general land-abundant, Engerman and Sokoloff consider how the specific content of ‘land’ varied significantly and contributes to explain different colonial experiences, *within* Latin America as well as between North and South. Uruguay in particular is singled out in their analysis, together with Argentina and Costa Rica where the main crops were also grown by smallholders in the colonial economy, as the most ‘progressive’ of Latin American nations in terms of literacy and voting rights by the late-nineteenth century.

My point of contention, and the reason why I think Engerman and Sokoloff’s approach could turn out to be too pessimistic about future perspectives for convergence, is that geography is still treated by them as a sort of ‘prime mover’ which is front and centre as a catalyst in the genesis of institutions, but then exits the stage, rather than continuing to shape economic strategies through time—and being in turn shaped by them. Keeping geography in the cast of historical explanations is important because it is more than capable of change, not only in terms of its relative economic value (especially in response to technology and terms of trade), but also materially as a result of productive strategies, as Chapters 3 and 4 explore in relation to sheep-farming and cattle crossbreeding in nineteenth- and early twentieth-century Uruguay. Furthermore, because Engerman and Sokoloff are still working within the neo-institutionalist framework, they see institutions as the fundamental, or even the only, long-term drivers of historical change: ‘initial’ geography matters, but only through them. As Chapter 5 will show, geography and natural resources also affect long-term economic development through channels which are not ‘institutional’ in the Northian sense (i.e. ‘rules of the game’), such as demographic growth, immigration, and population geography.



⁵⁰ Kenneth L Sokoloff and Stanley L Engerman, ‘Institutions, factor endowments, and paths of development in the new world,’ *Journal of Economic Perspectives* 14, 3 (2000); Engerman and Sokoloff, *Economic Development*.

So who is to blame for Latin American economic backwardness? As Bulmer-Thomas notes in the preface to the latest edition of his *Economic history of Latin America*, the diversity of experiences

suggests great caution when seeking to explain the relative backwardness of Latin American countries today. Not only are the differences among the republics enormous, but there have also been many role reversals, with countries performing well subsequently performing poorly and vice versa. Sweeping generalizations designed to explain Latin America's performance in terms of inherited colonial institutions or factor endowments are simply incapable of capturing this complexity.⁵¹

But neither caution nor dissatisfaction with the current neo-institutionalist fashion should move us to abandon all hope of general explanation. I still believe grappling with very large questions such as this one is what makes up the very core of our sub-discipline, and if we are not willing to engage with them, then others will answer for us. It also matters greatly for the social value of what we do: why should public monies continue to sustain economic historians (instead of being invested towards other worthwhile ends) if we do not dare offer answers to the big questions of long-term development? So, without abandoning the historian's healthy scepticism of grand theories, let me take a stand. If I had to confine myself to one of the boxes I have spent the last few pages stacking up, it would be within the 'sophisticated geography' camp, but with two caveats.

First, geography shapes more than institutions. While it is easy to agree that institutions in the Northian sense matter greatly, they matter insofar as they relate to resources which precede them: the best property rights regime alone could not have made a great agricultural civilization emerge in Antarctica. But the indirect impact of geography does not end there: specific natural resources can also attract people, who then have an influence all of their own as producers and consumers. When thinking about the divergence between the United States and Latin America, we should pay attention to how the extraordinary variation in natural resources across the New World affected the ability of different regions to attract population, in the context of the secular demographic deficit that characterised the Americas.⁵² Before the 'age of mass migration', that deficit was addressed with brutal violence by the transatlantic slave trade, and if we were looking at inequalities between colonies in the Americas in the eighteenth century it would be easy to

⁵¹ Bulmer-Thomas, *Economic History*, xx.

⁵² With the exception of central Mexico and the Andean highlands, whose higher historical population densities also explain much of their long-term development; see Ewout Frankema, 'The biogeographic roots of world inequality: Animals, disease, and human settlement patterns in Africa and the Americas before 1492,' *World Development* 70 (2015): 276-79. Long-term comparisons *within* particular regions in Latin America can highlight the impacts of historical settlement patterns: one which I think could be extremely fruitful would be comparing Ecuador and Uruguay, countries of a similar scale with extremely different settlement patterns before, during, and after colonial rule.

conclude that the leading colonies were those that could use slaves more profitably because their export agriculture benefitted from substantial scale economies, regardless of the nationality of the colonial authorities.⁵³ Going into the mid-nineteenth century and beyond, large-scale voluntary migration solved the demographic deficit to different extents in different places, and it would be difficult to imagine the United States' trajectory of economic development without its continental-size market.⁵⁴ This also partially accounts for divergence within Latin America: the fastest-growing economies of the nineteenth century, the ones which urbanised earlier and have in general the best development indicators today, were the ones which attracted more migrants: the Argentine littoral, São Paulo and its hinterland, Cuba, Chile's central valley, and Uruguay.

Second, 'geography' should not be taken merely as an initial condition, but as an ongoing influence. Countries cannot move places, but their places do change, and the same location can have different implications for growth across time. This is why the environment's contributions, broadly understood, can help to account for both growth and stagnation. Uruguay's temperate grasslands explain its nineteenth-century growth, under a diversity of political regimes and in spite of decades of conflicts; they also explain its more disappointing twentieth-century performance, not only because world market trends shifted, but also because pastures themselves had changed as a result of the rural development they had sustained.

A key advantage of this approach, and a reason why it could appeal to historians of different periods of Latin America's past, is that it does not prioritise one of them over all others as the key conjuncture in which the continent's fortune was set. Indeed, explanations in history are never far from debating timing. If Latin America's economic decline is predominantly an early-nineteenth century phenomenon then it can be more easily traced to the 'wrong' set of colonial institutions or blamed on post-colonial decades of 'macho warlordism' (to use Landes's rather unsophisticated category).⁵⁵ However, if there is evidence for a late-twentieth century decline then explaining current economic performance primarily as a function of colonial legacies is less plausible. The next section turns from causation to chronology, and discusses how our understanding of the rise and fall of Uruguay's relative prosperity can illuminate debates on Latin American backwardness and on economic development in the periphery more generally.

⁵³ Frankema, *Latin America*, 49.

⁵⁴ An insightful reflection into the differences and similarities of forced and voluntary migration to the Americas is David Eltis, 'Free and coerced transatlantic migrations: Some comparisons,' *AHR* 88, 2 (1983).

⁵⁵ Landes, *Wealth and Poverty*, 313.

2 Context: the Great Divergence, Uruguay, and the long-nineteenth century

This section maps out the place and period where our story unfolds. This dissertation is an old-fashioned national case study, but one framed in comparative and global perspective. Therefore, the case of nineteenth-century Uruguay is introduced in its relevant contexts: Uruguay's long-term development and Latin America's diverse growth trajectories, both set against the background of the 'Great Divergence' in global economic history. The geographical setting is then defined with reference to both ecological and political boundaries, and the relevance of such a small case study is considered. Finally, periodization is discussed in relation to the historiography and the history, justifying the choice of dates for the story's beginning and end.

2.1. Uruguay's long divergence

The economic history of Uruguay in comparative perspective could be summarised in two local divergences in living standards, set against the background of the Great Divergence in global economic history. It is a tale of both material development and relative backwardness. Uruguay was a rich country by the standards of the late-nineteenth century, and it is a high-income economy by the standards of the early twenty-first. And yet between those two conjunctures it has more or less persistently lost ground vis-à-vis the leading world economies: a 'long divergent siesta' in Bértola's words.⁵⁶ Before this siesta, however, there was a time of differentiation from most of the rest of Latin America during the early-nineteenth century, when economic growth in the territories of present-day Uruguay and the Argentine littoral took a different path to that of their neighbours, more resembling other successful settler economies in the world periphery, such as Australia and New Zealand.⁵⁷ Estimates of average incomes in Uruguay and Argentina are very dubious before 1870, the first year for which sources provide reasonably good sectorial output data and consequently grounds for plausible historical national accounts. By then, however, both countries already had income levels substantially higher than their neighbours.⁵⁸

⁵⁶ Luis Bértola, 'An overview of the economic history of Uruguay since the 1870s,' in *EH.net Encyclopedia* (<https://eh.net/encyclopedia/bertola-uruguay-final/>).

⁵⁷ For a survey of the comparative economic historiography of these four 'southern settler economies' and a reciprocal Uruguay-New Zealand comparison, see Emiliano Travieso, 'United by grass, separated by coal: Uruguay and New Zealand during the First Globalization,' *Journal of Global History* 15, 2 (2020): 272-77.

⁵⁸ The reconstruction of historical national accounts since the 1870s for Uruguay and Argentina was pioneered by Bértola and Cortés Conde and Harriague respectively. Their revised figures remain the sources for the latest version of the Maddison Project Database since 1870. The benchmarks for 1800, 1820, 1850 and 1860 are based on guesstimates by Prados de la Escosura, themselves built on Newland and Poulson's estimates of per head growth of agricultural output in the Argentine littoral on the basis of volumes of cattle hides exports, which were then applied to Uruguay wholesale. Luis Bértola, *El PBI de Uruguay 1870-1936 y otras estimaciones* (Montevideo, 1998); Roberto Cortés Conde and Marcela Harriague, *Estimaciones del producto interno de la Argentina* (Buenos Aires, 1996); Prados de la Escosura, 'Lost Decades?'; Carlos Newland and Barry Poulson, 'Purely Animal: Pastoral Production and Early Argentine Economic Growth 1825-1865,' *EEH* 35, 3 (1998); Bolt et al., 'Rebasing "Maddison".'

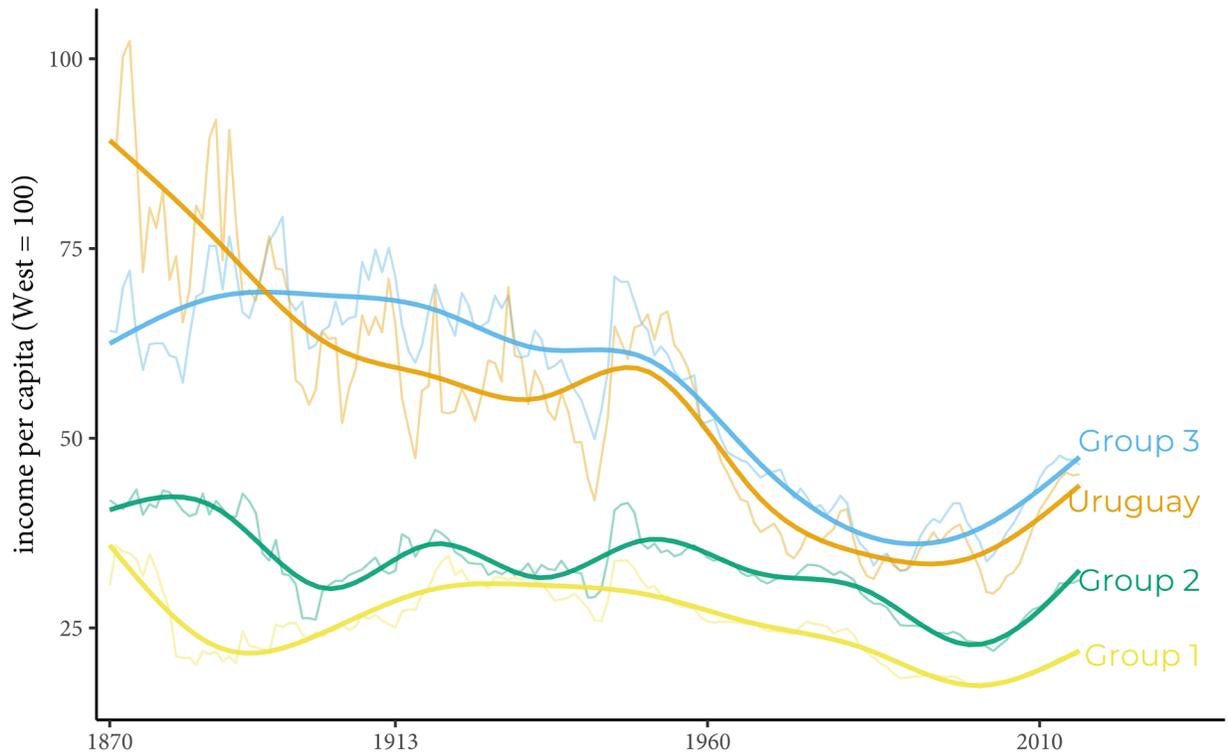
Graph 1.3 shows Uruguay's long-term per capita income in comparison with four globally-leading Western economies (the US, the UK, France, and Germany) and the three groups into which Latin American economic historiography usually divides the region. The first group encompasses the sites of the largest pre-Columbian societies which later became core regions of the Spanish American empire and most of which developed large mining sectors (Mexico, the northern Andean countries, most of Central America, and Paraguay). The second group comprises countries characterised by a history of tropical export agriculture and in most cases large-scale slave plantations (Brazil, the 'Latin' Greater Antilles, Venezuela, and part of Central America). The third group is the southern cone countries, which were lightly populated before European arrival (and indeed for a long time after it), and specialised in temperate-zone grain and livestock agriculture, as well as mining in the case of Chile.⁵⁹ It should be borne in mind that 100 in the graph was a fast-moving goalpost, as rich Western economies enjoyed cycles of historically unprecedented growth.

Despite the fact that divergence relative to the West was already noticeable in the late-nineteenth century, by 1913, when the basis of the modern agrarian export economy had been consolidated under the First Globalization, Uruguayan living standards still rivalled France's. The relative decline sharpened during the mid- and late-twentieth century, as both time series analysis and prevailing popular perceptions in Uruguay suggest.⁶⁰ This can be traced to the disruption of trade during the interwar period and was strikingly evident by the 1950s, when incomes in Uruguay had clearly stagnated and fell behind the industrialised world, as the rest of Latin American economies caught up with it (as well as with neighbouring Argentina). The relative leadership of Uruguayan living standards in the Latin American context disappeared almost entirely during the military dictatorship (1973-1985), after which incomes were barely 10% higher than the mean of the rest of the region. The regional predominance achieved in the long-nineteenth century has only regained footing in the early-twenty-first century as a result of a new episode of globalization and commodity export-led growth, this time resulting from Chinese demand. In 2016 incomes in Uruguay were 50% higher than the Latin American mean, but still represented less than half of average incomes in the rich West. Uruguay's long-term trajectory, if not necessarily its present income level, is therefore emblematic of Latin American divergent development, and of both the promise and the pitfalls of a narrow specialization pattern.

⁵⁹ The classic reference for this typology of Latin American economies is Cardoso and Pérez-Brignoli, *Historia económica*. For a recent application incorporating more quantitative evidence, see Bértola and Ocampo, *Economic Development*, 9-16.

⁶⁰ Luis Bértola and Gabriel Porcile, 'Argentina, Brasil, Uruguay y la Economía Mundial: una aproximación a diferentes regímenes de convergencia y divergencia,' in *Ensayos de Historia Económica. Uruguay y la región en el mundo (1870-1990)*, ed. Luis Bértola (Montevideo, 2000); Gabriel Oddone, *El declive: una mirada a la economía de Uruguay del siglo XX* (Montevideo, 2010).

GRAPH 1.3. A long divergence: Uruguay, Latin America(s), and the West, 1870-2016
Comparative trends in average incomes (Western incomes = 100)



Notes: 'Western incomes' are calculated as the simple mean of the PPP per capita GDP of France, Germany, the United Kingdom, and the United States. 'Group 1' is the simple mean of Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Colombia, Ecuador, Peru, Bolivia, and Paraguay; 'Group 2' of Cuba, Haiti, Dominican Republic, Costa Rica, Panama, Venezuela, and Brazil; 'Group 3' of Argentina, Chile, and Uruguay. National incomes are added to the group average when since the year for which there are estimates in the Maddison Database. Yearly data shown for all series in light lines; dark lines represent the trend calculated using a generalised additive model.

Source: Bolt et al., 'Rebasing 'Maddison'', using their single benchmark series of real GDP per capita in 2011 USD.

2.2. The scenario: Uruguay, or grasslands north of the River Plate

This dissertation is a study of rural economic resources and activities in a grassland region north of the River Plate, which was known in the eighteenth and nineteenth centuries as the Banda Oriental. It included the colonial jurisdiction of Montevideo south of the Río Negro as well as the formerly (until 1767) Jesuit-managed countryside north of it. After a successful rebellion against Spain, this territory became the independent Provincia Oriental (1811-1821), later the Provincia Cisplatina under Luso-Brazilian rule (1821-1828), and, with some territorial losses along the way, the modern Republic of Uruguay since 1830. This is, by South American standards, an unusually small territory—a 'little country' (*paisito*) as Uruguayans

themselves often call it.⁶¹ It is also very ecologically consistent when compared to the rest of Latin America: its lowlands and hilly plains are located entirely within the warm temperate subtropical zone, with a small range of perennial grasses as the dominant land cover, and elevations rarely reaching 300 metres.⁶² The scale and homogeneity of the territory, as well as its historically small population, make economic and ecological change more easily tractable and legible than in a larger, more environmentally diverse country. In more pragmatic terms, the scale also lends itself well to a long-term study by a single researcher within the confines of a three-year doctoral dissertation. However, it could also pose a challenge for the external validity of the findings: why should economic historians care about the development path of such a small country?

The default historian's answer, and I think a very valid one, would be that every story is valuable, including small ones, because they all have a place in the kaleidoscope of past human experience, which is what history is ultimately about.⁶³ But I think I can also argue for the external validity of the findings on Uruguay from the perspective of understanding economic change, in the present as well as the past. The previous section hopefully persuaded the reader that if we want to understand Latin American economic backwardness we need to grapple with the region's historical diversity; because Uruguay is an outlier in terms of its present-day development indicators, it holds one of the keys to the Latin American puzzle. Furthermore, a major concern of this dissertation is uncovering the implications that the history of Uruguay's rural economy during the long-nineteenth century has for our understanding of long-term growth in what was once called the 'Third World'. Explaining how and to what extent the rise and transformations of export agriculture can sustain higher living standards in developing regions, and with what consequences for their environments, is a major task for economic historians of most countries in the majority world, large or small. Furthermore, few countries have developed an export economy so consistently dependent on livestock agriculture, and no other has as many cows per person, which makes Uruguay a uniquely useful site to think about economy-environment interactions in historical perspective.

⁶¹ Uruguayan geography textbooks are usually quick to point out, however, that at 176,000 square kilometres the territory is not small by European standards; see Cayetano di Leoni and Santa di Lorenzo, *Geografía Escolar. 4º y 5º Año: Uruguay y las Américas* (Montevideo, 1972). On the cultural history surrounding the idea of *paisito*, see William Acree, 'Uruguay, Gateway to Nineteenth-Century Cultural History of the Río de la Plata,' *History Compass* 11, 4 (2013).

⁶² A classic introduction to the physical geography of Uruguay is Jorge Chebataroff, *Tierra uruguaya: introducción a la geografía física, biológica y humana del Uruguay* (Montevideo, 1960); for a more recent overview of the country's physical and human geography, see Marcel Achkar, Ismael Díaz, Ana Domínguez, and Fernando Pesce, *Uruguay: naturaleza, sociedad, economía. Una visión desde la geografía* (Montevideo, 2016).

⁶³ Of course, the postmodern philosophy of history would argue that the very question should be dismissed, because 'history and historical consciousness belong to culture, and no question can be asked about the usefulness of culture' (Frank R. Ankersmit, 'Historiography and postmodernism,' *History and Theory* 28, 2 (1989): 139). I retain what some may consider a naïve, 'modernist' position that we should in fact ask questions about the usefulness of historical research for human development, broadly understood. That does not mean that historians should only study large processes: the history of a single day, a single locality, or a single individual can illuminate big why questions, as micro historians have persuasively shown; for a defence of microhistory on these grounds, see Filippo de Vivo, 'Prospect or refuge? Microhistory, history on the large scale: A response,' *Cultural and Social History* 7, 3 (2010).

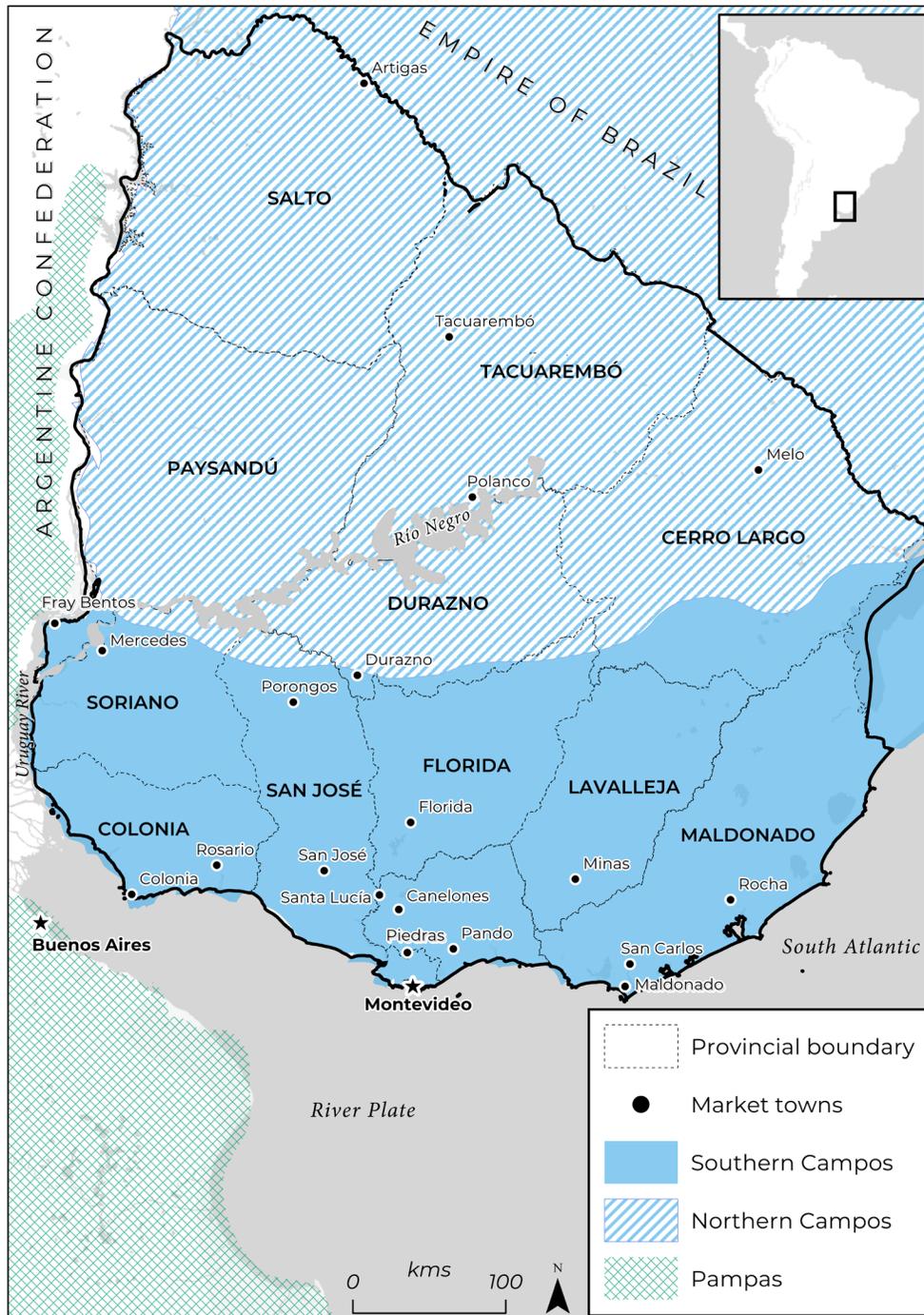
And finally, as it happens in all fields of scientific enquiry, we do not know which findings will in hindsight turn out to be pivotal, so we have to study all cases, whatever their size.

Map 1.1 shows mid-nineteenth century Uruguay in its environmental context. If before 1830 Uruguay was fought over by its two large neighbours and has since often been described as a ‘buffer state’ between them, its geography, read from north to south, also occupies an area of transition between the southern limits of the Brazilian forest zone and the treeless Argentine Pampas across the Plate estuary. Within the broad biogeographical region known as River Plate Grasslands (RPG)—encompassing all of Uruguay, most of the Argentine littoral, and the southern tip of Brazil—Uruguay is entirely situated within the ‘Campos’ biome, characterised by extensive grassland cover dotted by many stretches and patches of woodland alongside rivers and ridges.⁶⁴ The Campos grasslands themselves differ from their humid Pampas counterparts on the other side of the estuary because their soils are generally shallower and hence not equally suitable to extensive cereal agriculture. This contributes to explain why they were largely left out of the global process of ‘grassland conversion’ since the late-nineteenth century, during which vast grazing areas were turned to cropland, from the American great plains and the Canadian prairies to the Russian and Ukrainian steppe and the Sahel of West Africa.⁶⁵

⁶⁴ The canonical definition of the RPG in the agronomic literature and the typology of its sub-regions is A. Soriano, ‘Río de la Plata Grasslands,’ in *Natural Grasslands*, ed. R. T. Coupland (Amsterdam, 1991). More recent specialist research has confirmed the usefulness of the classification and developed it further, see Germán Baldi and José M. Paruelo, ‘Land-use and land cover dynamics in South American temperate grasslands,’ *Ecology and Society* 13, 2 (2008) and José M. Paruelo, Estebán G Jobbágy, Martín Oesterheld, Rodolfo A Golluscio, and Martín R Aguiar, ‘The Grasslands and Steppes of Patagonia and the Río de la Plata Plains,’ in *The Physical Geography of South America*, ed. Thomas T. Veblen, Kenneth R. Young, and A. R. Orme (Oxford, 2007). A recent analysis of long-term change in the Uruguayan Campos is Pierre Gautreau, ‘Rethinking the dynamics of woody vegetation in Uruguayan campos, 1800–2000,’ *Journal of Historical Geography* 36, 2 (2010); for a survey of the recent specialist research into the Brazilian Campos, see Gerhard E Overbeck et al., ‘Brazil’s neglected biome: the South Brazilian Campos,’ *Perspectives in Plant Ecology, Evolution and Systematics* 9, 2 (2007). The discussion in this paragraph and the next is informed by these works.

⁶⁵ New Zealand was another exception to the global pattern: see Travieso, ‘United by grass,’ 273. For an environmental history perspective on the process of grassland conversion, see John R. McNeill, ‘Energy, population, and environmental change since 1750: entering the Anthropocene,’ in *The Cambridge World History. Volume VII, Part 1, Production, Destruction, and Connection, 1750-Present*, ed. John R. McNeill and Kenneth Pomeranz (Cambridge, 2015): 72.

MAP 1.1. Uruguay in the mid-nineteenth century



Notes: 'market towns' are those which by 1862 had regular stage-coach services connecting directly to the capital.

Sources: biogeographical regions taken from Soriano, 'Rio de la Plata Grasslands'. Market towns in the mid-nineteenth century taken from *The Republic of Uruguay* (1862), 28.

The Southern Campos concentrate the most fertile lands in Uruguay, and share floristic similarities with the rolling Pampas—tussock grasses predominate and subtropical grasses are rare—but have been, as a whole, much less influenced by crop farming than them. The Northern Campos extend onto the neighbouring Brazilian province of Rio Grande do Sul, and are characterised by basaltic substrate soils covered by more subtropical grasses than the other subdivisions of the River Plate Grasslands. These broad differences between the two Campos landscapes contribute to the environmental basis of a long-term north-south divide within Uruguay. As Chapter 5 will demonstrate for the first time with local data, the Southern Campos concentrated most of Uruguay's population at the start of the twentieth century, and, as Map 1.1 shows, they were already home to almost all market towns by the mid-1800s. Chapters 3 and 4 will return to biogeographical variation across Uruguay as a factor behind differences in productive strategies.

One of the ways in which this dissertation is old-fashioned is in its clinging to a national unit of analysis, which has fallen out of favour in environmental history, even if it remains standard in quantitative economic history.⁶⁶ As argued above, ecological as well as political boundaries were taken into account when defining the scope of analysis, but it must be acknowledged that when these entered in conflict, such as along the Uruguay-Brazil border, administrative boundaries were preferred. While the primary work is restricted to the two Campos regions on the Uruguayan side of the estuary and up to the Brazilian border, the discussion will, however, be framed in the context of the wider region and informed by recurrent comparisons, especially but not solely across Latin America.

A final point on the geographical setting: the centralism that has traditionally characterised the historiographies of Uruguay and Argentina, in which most stories are told from or with predominant reference to the capital cities, should be challenged but not ignored. It reflects two important structural features: firstly that both countries have been, since the late-eighteenth century, more urbanised than the rest of Latin America; and secondly that Montevideo and Buenos Aires have historically been 'too big' for the rest of their countries, departing from the rank-size rule of urban hierarchy.⁶⁷ The perspective chosen here prioritises rural locations and strategies, so Montevideo will come into view only when we need to follow rural produce or rural people to the capital, or when decisions made there affect how resources are mobilised in the countryside. Telling the story from the capital's perspective would be misleading, but leaving it out entirely would be implausible.

⁶⁶ In economic history, quantitative estimates are often only possible and most informative at the national level, where most economic policy is formulated; in environmental history, many processes would be impossible to understand within the pencil-fine borders of nation-states. On the limits of the national scale in comparative and global economic history, see Kenneth Pomeranz, *The Great Divergence: China, Europe, and the making of the modern world economy* (Princeton, 2000): 7-10; on environmental history's potential to encourage debates about scale, see John R. McNeill, 'Observations on the nature and culture of environmental history,' *History and Theory* 42, 4 (2003): 35.

⁶⁷ A lognormal distribution of city sizes would mean that the second city in a country should be half as large as the first, whereas in the River Plate the second population agglomeration in each country has been about ten times smaller than the urban continuum around the port-capitals throughout the twentieth century. Chapter 5 will further explore this hypothesis in the Uruguayan context. For a discussion of the rank-size rule and urban hierarchy in economic history, see E. A. Wrigley, *Poverty, progress, and population* (Cambridge, 2004): 253-57.

2.3. The period: crossing a historiographical divide

Despite its *longue durée* continuities, the long-nineteenth century remains an unusual choice in the historiographies of Uruguay, the River Plate, and Latin America more broadly. Historians of the subcontinent have tended to confine themselves to one side of a nineteenth-century divide, whether in the form of a political watershed (independence from Spain or Portugal and state building, c. 1830) or a technological one ('modernization', c.1870). Economic historians in particular, usually keener on long time scales than their colleagues in cultural or political history, have mostly set their watches to start in the mid- to late-nineteenth century.⁶⁸ The problem Hopkins pointed out in relation to West Africa in 1973, namely that very few comprehensive economic histories of developing regions dare to cast their net further back than the late nineteenth century, is perhaps even truer for Latin America now than it was then.⁶⁹ When edited works deal with broader timeframes, as does the *Cambridge Economic History of Latin America*, they do so separating the colonial era and 'short nineteenth century' from the 'long twentieth century' (1870-2000) in different volumes.⁷⁰

If this trend continues, the most studied decades of Uruguay's economic past (c. 1870-1913) run the risk of becoming truncated from preceding history. This would be problematic because it could create the misleading impression of 'modernization' (meaning largely the economic impact of industrial technologies of transport and food production brought to the region by foreign, usually British, capital) creating a prosperous agrarian export economy out of thin air, rather than greatly expanding the limits of already well-developed economic strategies. Such is to a large extent the way in which some global economic historians read the Southern Cone's past: countries where economic history 'began in earnest only in the middle of the 19th century.'⁷¹

Crossing the nineteenth-century divide is possible because 1779-1913 may be seen as a distinct period defining the long road to agrarian capitalism and broadly coinciding with the onset and development of industrialization in north-western Europe and the Great Divergence in global economic history. From a local perspective, as was argued in the previous sections, it could be said to be the period of Uruguay's divergence with respect to most of its Latin American peers, and, before 1870, with respect to most of the

⁶⁸ Landmark examples for Latin America as a whole are Bulmer-Thomas, *Economic History*; Bértola and Ocampo, *Economic Development*; and for Uruguay and Argentina: M. H. J. Finch, *La economía política del Uruguay contemporáneo, 1870-2000*, 2a. edition (Montevideo, 2005); Lucas Llach and Pablo Gerchunoff, *Entre la equidad y el crecimiento. Ascenso y caída de la economía argentina, 1880-2002* (Buenos Aires, 2004).

⁶⁹ A. G. Hopkins, *An Economic History of West Africa* (London, 1973): 3-4.

⁷⁰ Victor Bulmer-Thomas, John H. Coatsworth, and Roberto Cortés Conde, *The Cambridge Economic History of Latin America*, 2 vols. (Cambridge, 2006); only one chapter deals with the decades immediately following independence.

⁷¹ Allen, *Global Economic History*, 74.

world periphery.⁷² 1779 is a useful starting point for both historical and archival reasons, as it signals the opening of the colonial customs in Montevideo and the first year when cattle hide exports surpassed 400,000 units, marking the beginning of the transition from a peasant economy in the Spanish borderlands to a frontier export economy. Three policy changes from Madrid in the late 1770s contributed decisively to that early transition: the creation of the Viceroyalty of the River Plate in 1776, which transferred administrative power over the latter region from Lima to Buenos Aires; the Treaty of San Ildefonso in 1777, which closed the last chapter of the military and diplomatic struggle between the Iberian empires in the River Plate, with Spain gaining definitive sovereignty over Colonia del Sacramento; and the Edict of Free Trade which in 1778 enfranchised the ports of Montevideo and Buenos Aires, allowing them to trade directly with other Spanish colonies and import slaves duty free. Those institutional changes resulting from the Bourbon Reforms in the metropolis certainly favoured economic opportunity, but it was local responses to it that brought about change and transformed political borderlands into economic frontiers.⁷³ To emphasise that perspective I prefer 1779 as a starting year to 1776, 1777 or 1778, the dates most often used as watersheds by historians of colonial and early-nineteenth-century River Plate.⁷⁴

1913 is an appropriate year to draw this study to a close. From the perspective of the international economy, it marked the change of trend in the terms of trade of foodstuffs and other agricultural commodities, creating new challenges for primary exporters. The First World War also disrupted transatlantic migration routes, affecting the main source of workers for the labour-scarce River Plate. From a local point of view, 1913 was the first year when the value of Uruguayan frozen beef exports surpassed that of salt-cured beef, marking the consolidation of a modern agrarian export economy. By then railway networks traversed the plains, wire-fencing separated landed estates, and subsistence farming was negligible. Meanwhile, in the now densely populated port city of Montevideo steamships arrived with large cargoes of coal and were loaded with corned beef and frozen meat, electricity was readily available, and a market for locally manufactured consumer goods emerged. Uruguay was more heavily urbanised than any other Latin American country, and export values and average incomes per capita were, together with Argentina's, by far the highest in the region.

⁷² Williamson has persuasively argued that the most significant century in the Great Divergence from the perspective of the periphery was the one before 1870. Jeffrey G Williamson, 'Globalization and the Great Divergence: terms of trade booms, volatility and the poor periphery, 1782–1913,' *European Review of Economic History* 12, 3 (2008).

⁷³ On the historiographical genealogies behind the categories of 'borderland' and 'frontier', with reference mainly to North America, see Pekka Hämäläinen and Samuel Truett, 'On Borderlands,' *Journal of American History* 98, 2 (2011).

⁷⁴ Representative examples for different areas of the broader region are Jonathan C. Brown, *A Socioeconomic History of Argentina, 1776-1860* (Cambridge, 1979); Lyman L. Johnson, *Workshop of Revolution: Plebeian Buenos Aires and the Atlantic World, 1776-1810* (Durham, 2011); Julia Sarreal, 'Disorder, Wild Cattle, and a New Role for the Missions: The Banda Oriental, 1776-1786,' *The Americas* 67, 4 (2015); Julio Djenderedjian, 'Roots of Revolution: Frontier Settlement Policy and the Emergence of New Spaces of Power in the Río de la Plata Borderlands, 1777-1810,' *HAHR* 88, 4 (2008).

The late-nineteenth century ‘rural modernization’ under the First Globalization is therefore the hinge upon which our story turns rather than its point of departure. That hinge, in Uruguay’s grasslands, was made of imported wire. Wire fencing was the instrument of enclosures between 1872 and 1882: it reflected and defended the increased value of land and livestock resulting from changing factor ratios and the improved quality of cattle and sheep following intensive cross-breeding.⁷⁵ Just as it divided the countryside, wire-fencing also divides the rest of this dissertation in two parts, each of them characterised by a different ‘spatial code’ for extensive livestock agriculture, a concept which will be defined and extended below.

3 Uruguayan rural history and ‘agrarian capitalism’

The most urbanised country in Latin America, Uruguay’s history is nonetheless defined by its rural world.⁷⁶ As Chapter 5 demonstrates, agriculture was the main employer in the economy at least until the early twentieth-century, and the country’s long-term comparative advantage in livestock agriculture continues to dominate the export economy and the landscape. Rurality is also very much present in everyday Uruguayan urban life through diet, language, and art as well as through downstream industries connected to agriculture (marketing, shipping, and, increasingly, hospitality and agro-tourism). It is therefore unsurprising that rural development has occupied such a prominent role in research and reflection in or about Uruguay, capturing the imaginations of political leaders, foreign commentators, and scholars of different disciplines. While each chapter will deal in detail with the conventional wisdom surrounding specific questions, this section introduces four generations of the specialist historiography and sets out this dissertation’s contributions in that context. Because many of the scholarly debates were had across the estuary, both Argentine and Uruguayan literature are sometimes considered.

3.1. Four vintages

Regarding economic history as such, four main vintages of research and reflections on the agrarian question can be identified.⁷⁷ The classic interpretation was developed in the 1960s and 1970s by a series of works

⁷⁵ The two classic accounts of the expansion of wire fencing in Uruguay José Pedro Barrán and Benjamín Nahum, *Historia Rural del Uruguay Moderno: Tomo I* (Montevideo, 1967): 532-56 and Raúl Jacob, *Consecuencias sociales del alambramiento* (Montevideo, 1969). A similar process was underway in the late nineteenth century in the American Plains, where barbed wire—rather than the very limited ability of state authorities to prevent encroachment—gave formal land titles real meaning. For an economic analysis of wire-fencing from 1880 to 1900 in the US, see Richard Hornbeck, ‘Barbed wire: Property rights and agricultural development,’ *QJE* 125, 2 (2010).

⁷⁶ See urbanization estimates for Latin America since 1870 in Bértola and Ocampo, *Economic Development*, 128.

⁷⁷ As I was revising this chapter in August 2020, Moraes published a critical survey of the specialist scholarship.

influenced by the *Annales* school, in some cases relying on a Marxist or *dependentista* theoretical toolbox, that established a consensus narrative of historical agrarian development in the region.⁷⁸ Barrán and Nahum's seven-volume *Historia Rural*, published from 1967 to 1978, was the most ambitious of these projects, and it built a powerful narrative centred on the 'diabolical blessing' of the natural grasslands and its counterpart in *mentalités*: the traditional values and lack of innovative capacity of ranchers who formed a 'cattle establishment' essentially defined since the late colonial period.⁷⁹ The rural landscape on both sides of the River Plate was presented by this generation of scholars (often basing their interpretation on colonial reports and travellers' journals) as a kingdom of cows, before and after colonial rule, where the abundance of beef made crop farming a negligible and unpalatable occupation.⁸⁰

The second historiographical vintage was the 'renaissance of rural history' that developed in the late 1980s, coinciding with the return to democracy after the Argentine and Uruguayan military dictatorships, and offered a revisionist view of the 'pre-modern' rural world in the River Plate. Instead of the traditional contradiction between the landless, nomadic, and invariably male free-rider (*gaucho*) and the 'feudal', and also male, absentee landowner (*estanciero*), these authors proposed a landscape peopled with young families making their living in 'productive units' of diverse sizes, which did not necessarily nor usually coincide with 'units of property', where cattle raising left room for grain agriculture and land markets (albeit segmented and imperfect) existed.⁸¹ Exploiting tithe records and probate inventories to construct case studies of local areas, the historians of the 'renaissance', led by Garavaglia and Gelman, painted a more vivid picture of the rural world in the late-colonial period and beyond, and drew attention to major blindspots of previous

My assessment broadly coincides with hers, including my perception of my own place in the literature: an early version of Chapter 4 of this dissertation is cited by her as part of the 'new agrarian history' of Uruguay. See María Inés Moraes, 'Agrarian history in Uruguay: From the "agrarian question" to the present,' *Historia Agraria*, 81 (2020).

⁷⁸ After Pivel Devoto's pioneering *Raíces coloniales de la Revolución Oriental de 1811* (Montevideo, 1952), which founded 'post-traditional' economic historiography in Uruguay, the most influential work on the rural economy was Washington Reyes Abadie, Oscar H. Bruscherá, and Tabaré Melogno, *La Banda Oriental: pradera, frontera, puerto* (Montevideo, 1965). For a Marxist perspective, see the seminal work by Sala de Touron, de la Torre, and Rodríguez, *Evolución económica*. A sophisticated reading of the economic history of Uruguay, with emphasis on the agrarian question and influenced by dependency theory, is Instituto de Economía, *El proceso económico del Uruguay* (Montevideo, 1969).

⁷⁹ José Pedro Barrán and Benjamín Nahum, *Historia Rural del Uruguay Moderno*, 7 vols. (Montevideo, 1967-1978). They published an English-language summary of their conclusions as José Pedro Barrán and Benjamín Nahum, 'Uruguayan rural history,' *HAHR* 64, 4 (1984). For an excellent analysis of the intellectual journey behind Barrán's economic history writing, see María Inés Moraes, 'Más que historia, más que economía: la historiografía económica de Barrán y Nahum,' *Revista de la Biblioteca Nacional* 8 (2013).

⁸⁰ Horacio C. E. Giberti, *Historia económica de la ganadería argentina* (Buenos Aires, 1954); Aníbal Barrios Pintos, *De las vaquerías al alambrado* (Montevideo, 1967); Ernesto Campal, *La pradera* (Montevideo, 1969).

⁸¹ Carlos A. Mayo, *Estancia y sociedad en la Pampa, 1740-1820* (Buenos Aires, 1995). Key works of this period in the specialist English-language scholarship are Ricardo D. Salvatore and Jonathan C. Brown, 'Trade and Proletarianization in Late Colonial Banda Oriental: Evidence from the Estancia de las Vacas, 1791-1805,' *HAHR* 67, 3 (1987); Ricardo D. Salvatore and Jonathan C. Brown, 'The Old Problem of Gauchos and Rural Society,' *HAHR* 69, 4 (1989).

scholarship, notably in the history of the everyday.⁸² For the mid-nineteenth century, Hilda Sabato challenged mainstream views on land tenure particularly in regards to sheep raising in the Buenos Aires province.⁸³

A third and more recent strand of scholarship developed since the late 1990s and was theoretically and methodologically informed by the New Economic History.⁸⁴ Tellingly, most of these scholars were trained as economists and taught in economics faculties, and came at economic history from that perspective, unlike those of the previous generations. More and better counting was put at the service of testing some of the claims of the classic interpretation, which still was (and in some questions remains) the conventional wisdom. In particular, the classic view regarding traditionalist mentalities of rural producers even after technological modernization was revised when Millot and Bertino argued that latifundia and rational capitalist behaviour were not only compatible but mutually reinforcing, a question revisited, with new evidence, in Chapter 4.⁸⁵ Other authors in this strand questioned some of the results of the scholars of the 'renaissance', particularly as they relate to the use of tithe records as a proxy for sectoral output, claiming that the predominance of cattle over wheat was, already in the colonial period, stronger than the revisionists claimed.⁸⁶ Samuel Amaral's *The Rise of Capitalism on the Pampas* is the best example of a lengthy study in this new tradition, providing a micro-economic analysis of pastoral estancias before their modernization as firms à la Coase, and of *estancieros* as entrepreneurs looking to minimise transaction costs.⁸⁷ Perhaps a sign of the times, whereas previous works had discussed social relations of production and tried to uncover the strategies and livelihoods of workers and peasants, Amaral focused on the behaviour of large ranchers, treating labour relations only as a function of the employers' demand.⁸⁸ This led him to the astonishing claim that labour in the countryside was not scarce and there was indeed under-employment, which, as Chapter 2 argues, would make the level and trend of real wages in the River Plate countryside difficult to explain and does not square with the extremely low labour/land ratios in the region, especially before the mid-nineteenth century.

⁸² Gelman and Garavaglia reviewed the 'renaissance' in Juan Carlos Garavaglia and Jorge Gelman, 'Rural history of the Rio de la Plata, 1600-1850: results of a historiographical renaissance,' *Latin American Research Review* 30, 3 (1995). Two landmark studies are Juan Carlos Garavaglia, *Les hommes de la Pampa: une histoire agraire de la campagne de Buenos Aires (1700-1830)* (Paris, 2000) and Jorge Gelman, *Campesinos y estancieros: una región del Río de la Plata a fines de la época colonial* (Buenos Aires, 1998).

⁸³ Hilda Sabato, *Agrarian Capitalism and the World Market: Buenos Aires in the Pastoral Age, 1840-1890* (Albuquerque, 1990).

⁸⁴ Cf., for Latin America's largest economies, the contributions to Stephen H. Haber, ed. *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico, 1800-1914* (Stanford, 1997).

⁸⁵ Julio Millot and Magdalena Bertino, *Historia económica del Uruguay. Tomo II, 1860-1910* (Montevideo, 1996).

⁸⁶ Samuel Amaral and José María Ghio, 'Diezmos y producción agraria: Buenos Aires, 1750-1800,' *RHE* 8, 3 (1990).

⁸⁷ Samuel Amaral, *The Rise of Capitalism on the Pampas: The Estancias of Buenos Aires, 1785-1870* (Cambridge, 1998). A similar approach for the period between independence and 'modernization' informs the estimates and analysis in Newland and Poulson, 'Purely Animal'.

⁸⁸ On the contrast between the two approaches, see Jonathan C. Brown, 'Review of *The Rise of Capitalism on the Pampas: The Estancias of Buenos Aires, 1785-1870*,' *HAHR* 90, 1 (2000), 214-15.

But not all work produced with the tools of the new economic history has followed the same interpretative line or focused on the same questions. In the twenty-first century, a ‘new agrarian history’ of Uruguay is integrating the new themes opened up by the ‘renaissance’ of rural history with the methods often associated with new economic history approaches, whilst keeping in mind the classic debates of the 1960s and 1970s. These studies are often characterised by a more explicitly regional or comparative framework, pay more attention to reconstructing local economies, and emphasise technical change in overlooked local subsectors.⁸⁹ My own work is part of this ongoing generation of research and aims to make some specific contributions to it, which are detailed in Chapters 2 to 5.

3.2. ‘Agrarian capitalism’: controversy and a working definition

These different vintages of local economic historiography agree on the centrality of livestock agriculture in the economic history of Uruguay and the River Plate grasslands in general, but differ greatly in several important conclusions regarding the nature of rural livelihoods (was there a peasantry proper, and did gauchos actually exist?), the rationality of economic agents in the countryside (were large landowners an obstacle to capitalism?), and the timing of structural changes (how large was the preponderance of ranching over farming, and when did it develop?). Among those structural changes, the rise of agrarian capitalism is a major point of contention. The clarity of the debate is not helped by the fact that the term itself is seldom discussed, as often happens with the word ‘capitalism’ agrarian or otherwise,⁹⁰ and the implied meanings differ greatly between authors.

For the first generation of historians reviewed here, capitalism often meant two different things. For the Marxists, it was about relations of production: proletarianization buttressed by ‘modern bourgeois property relations’ surrounding the means of production. Those relations were, in early Uruguay, anchored in the ‘merchant periphery’ of the economy, in opposition to what they considered the predominant ‘feudal features’ of a countryside where ‘primitive accumulation’ was slowly taking place.⁹¹ For their contemporaries

⁸⁹ María Inés Moraes, ‘Tendencias y coyunturas agrarias del Litoral rioplatense, 1760-1800: un análisis cuantitativo,’ *Investigaciones de Historia Económica* 10, 1 (2014); Jorge Álvarez, ‘Technological Change and Productivity Growth in the Agrarian Systems of New Zealand and Uruguay (1870-2010),’ in *Agricultural Development in the World Periphery*, ed. Vicente Pinilla and Henry Willebald (2018); Julio Martínez-Galarraga, Adrián Rodríguez Miranda, and Henry Willebald, ‘Patterns of regional income distribution in Uruguay (1872-2012): a story of agglomeration, natural resources and public policies,’ in *Time and Space: Latin American Regional Development in Historical Perspective*, ed. Marc Badia-Miró, Daniel Tirado-Fabregat, and Henry Willebald (London, 2020); Pablo Castro Scavone, ‘La mecanización del agro en Uruguay 1908-2010, aplicación de un modelo logístico para medir su trayectoria,’ *RUHE* 8, 13 (2018); Alcides Beretta Curi, ‘Los caminos de innovación en el agro: inmigración, redes de agricultores, elites y viticultura en el Uruguay de la modernización (1870-1900),’ *Tempos Históricos* 16, 2 (2012).

⁹⁰ This is a problem stretching far beyond Uruguay: ‘capitalism’ often goes undefined even in ‘new histories of global capitalism’; see, for example, Sven Beckert, *Empire of Cotton: A Global History* (New York, 2014).

⁹¹ ‘*Rasgos feudales*,’ or ‘*feudatarios*,’ was an expression used to describe economic relations in the countryside by

Barrán and Nahum, it was primarily about economic mentalities: the slow transition to agrarian capitalism over the nineteenth century was to be traced in the emergence of positive rural attitudes towards profit-maximization and capital accumulation, which were shaped by material changes (sheep farming, wire-fencing, beef factories).⁹² Later scholars influenced by the ‘new economic history’ had, on the other hand, a much less demanding definition of rural capitalism, and hence a longer chronology for it: simply ‘the prevalence of market forces’ which they saw as ‘prevailing on the pampas in the early nineteenth century, when the colonial mercantilism vanished.’⁹³ More recent scholarship is, I think usefully, less concerned with choosing one of these meanings of ‘capitalism’ (bourgeois property of the means of production, profit-driven mental attitudes, brisk markets in factors and goods), and has added to the emphasis on institutional aspects a renewed interest in the technological trajectory that shaped actually existing rural capitalism in the region.⁹⁴

‘Agrarian capitalism’ will be used in this dissertation as an analytical device (not the only one) to think about the major changes in the way Uruguayan resources were mobilised for rural development in the long nineteenth century. For these limited purposes, I define it as an economic system in which rural resources are for the most part privately owned—including agricultural land and free labour which is owned by the workers themselves—and allocated primarily through markets.⁹⁵ Additionally, the term for me suggests not only ‘capitalism in the countryside’ (i.e. rural capitalism) but that capitalism extends *from* the countryside to define the economy as a whole: an agrarian capitalist society is also one where economic development is rural-based, meaning that agriculture employs more labour and/or produces more output than manufacturing or services.⁹⁶ To the classic question of since when and to what extent Uruguay’s countryside became capitalist, this thesis adds its mirror image: in which sense(s) is ‘agrarian capitalism’ useful to understand Uruguay’s long-term rural development? Both issues will haunt us throughout the chapters that follow; we will finally confront them in the Conclusion.

the influential Marxist historians Sala de Touron, de la Torre, and Rodríguez, *Evolución económica; Estructura económico-social de la colonia* (Montevideo, 1967); *Después de Artigas (1820-1836)* (Montevideo, 1972). The colonial estancia was also described as the ‘feudal core’ of that society by earlier historiography, notably by Pivel Devoto, *Raíces coloniales*, who was far from Marxism.

⁹² Barrán and Nahum, *Historia Rural I*; José Pedro Barrán and Benjamín Nahum, *Agricultura, crédito y transporte bajo Batlle, 1905-1914* (Montevideo, 1978).

⁹³ Amaral, *Rise of Capitalism*, 2.

⁹⁴ The best example is María Inés Moraes, ‘El capitalismo pastor. Dinámica tecnológica e institucional de la ganadería uruguaya entre 1870-1930,’ *Historia Agraria* 29 (2003).

⁹⁵ Of the range of definitions lately proposed by scholars, the one I am using has the most in common with Jürgen Kocka’s in his *Capitalism: A Short History* (Princeton, 2016). For an overview of the recent debates see the contributions to Jürgen Kocka and Marcel van der Linden, eds., *Capitalism: The Reemergence of a Historical Concept* (London, 2016).

⁹⁶ Many scholars have debated whether the historical origins of capitalism were ‘agrarian’ or ‘merchant’. The literature is vast; see, for example, the contrasting positions persuasively articulated by Ellen Meiksins Wood, *The Origin of Capitalism: A Longer View* (London, 2017): 95-121 and by Kocka, *Capitalism*, 25-53.

If these are questions which remain open to answers, yet others need to be asked and given centre stage. First among them is the role of women in the rural economy, which this dissertation explores by studying the division of labour and access to resources along gender lines in both colonial and post-colonial contexts. Second, the part played by coercion in the rural economy is poorly understood, which led the foremost historian of slavery in Uruguay to ask ‘is it possible to integrate slavery to the narrative of Uruguayan economic history before 1860?’⁹⁷ This dissertation argues it is, and fruitfully so: slavery and emancipation have a crucial part to play in our understanding of long-term rural development in Uruguay. Third is the natural environment: despite studying an extraordinarily useful site to think about the relationships between animals and people, Uruguayan historiography has yet to find its environmental turn.⁹⁸ Cows and sheep will therefore be near the centre of this dissertation, but the story will not be told from their perspective, but from that of the women and men who worked with them. I would find it fascinating to read a history of Uruguay written from the point of view of the cattle that have so greatly outnumbered people ever since the eighteenth century, but writing it is far beyond my literary powers. Instead, animals and soils will figure prominently in quantitative figures and estimates, which will try to account for ecological flows as well as economic values.

Throughout the dissertation, I try to not merely add these dimensions to the more traditional questions in the specialist literature, but to consider how thinking more deeply about gender, coercion, and the environment can inform our understanding of the classic debates surrounding the rise of agrarian capitalism in Uruguay, and Latin America more generally. The result will not be a comprehensive account of long-term economic development in rural Uruguay, much less an *histoire totale* of the Uruguayan countryside, but a series of journeys into that history from a resource perspective. That being said, and despite the fact that each chapter should stand on its own, this dissertation hopes to be more than the sum of its parts. The thread that joins them is an analytical approach aimed at bringing economic and environmental history into dialogue with one another.

4 ‘Geographical possibilism’ and economy-environment interactions

Whereas economic historians have been almost universally agreeing that ‘institutions matter’ for three decades,⁹⁹ it seems more difficult for many of them to acknowledge that geography does too. Because the

⁹⁷ Alex Borucki, ‘¿Es posible integrar la esclavitud al relato de la historia económica uruguaya?’, *Boletín de Historia Económica* 3, 4 (2005).

⁹⁸ A pioneering contribution explicitly dealing with eco-systems in the analysis of the agrarian economies of next-door Buenos Aires was advanced by Juan Carlos Garavaglia, ‘Ecosistemas y tecnología agraria: Elementos para una historia social de los ecosistemas agrarios rioplatenses (1700-1830)’, *Desarrollo Económico* 28, 112 (1989).

⁹⁹ A quick online search suggests that 236 articles published in the *Economic History Review* between 1990 and 2020 had the word ‘institutions’ in their abstract, compared to only 90 with the words ‘geography’ or ‘environment’, and 147 with the word ‘technology’. These are, of course, not mutually exclusive.

approach followed in this dissertation (as well as its title) emphasises resources and environment, two words once associated with ‘geographical determinism’, it is important to make some conceptual points clear before venturing forward. While some geography-based explanations are decidedly unhelpful, we ignore environment-economy interactions at our own risk—and this applies both to scholarship about the past and to development policy for the future. A plausible solution is recovering the old concept of ‘geographical possibilism’ and reworking it in light of recent developments in both environmental history and life sciences. Specific methodological avenues through which that integration can take place are taken up in each of the following chapters, but for now let us consider the general criticisms levelled at economic history approaches which focus on resources and the environment.

We can classify objections to geography as an explanation—or, more accurately, as a set of explanatory variables—in two groups. The first arrives to economic history from neo-institutionalist approaches to development economics, but would also be at home in some historiographical circles. I am referring to the notion that geography is by definition static, or in economics parlance ‘time invariant’, and hence can only explain persistence in historical development, never change.¹⁰⁰ If geography matters for long-term economic prosperity, then how can geographically ‘blessed’ places be poor? Or, if the blessings of natural resources are in fact a curse in disguise, then how come the curse is sometimes lifted?¹⁰¹ To this some historians might add that geographical explanations can too easily fall into determinism, denying agency to the people of the past and obscuring the many contingencies that make up history.¹⁰² Perhaps these worries, in the context of the postmodern assault on *histoire totale*, led to what Genovese and Hochberg called in the late 1980s a ‘debilitating separation of geography from history.’¹⁰³ Among historically-minded economists, a static role for geography is welcomed, as it makes adding geographical control variables easier (a dummy for landlockedness, another for tropical location) and it can provide useful exogenous, once-and-for-all treatments, after which persistence sets in: whether a region had oil gold and silver deposits, or how rugged its terrain was.¹⁰⁴

The second set of objections comes to our sub-discipline from the very core of neoclassical economics: producers care about total costs and so they will readily substitute one factor for another. So, at the aggregate level, scarcity of fertile land will be solved like any other scarcity: it is just a matter of calculating what the

¹⁰⁰ Acemoglu, Johnson, and Robinson, ‘Reversal of Fortune’, 1259-60.

¹⁰¹ Stephen Haber and Victor Menaldo, ‘Natural Resources and Democracy in Latin America: Neither Curse nor Blessing,’ in *The Oxford Handbook of Latin American Political Economy*, ed. Javier Santiso and Jeff Dayton-Johnson (New York, 2012).

¹⁰² This became an increasingly popular position among those questioning the basic tenants of social science history, in a historiographical transformation that Lawrence Stone famously called ‘The Revival of Narrative: reflections on a new old history,’ *Past & Present*, 85 (1979). See, for a brief overview, Georg G. Iggers, *Historiography in the twentieth century: from scientific objectivity to the postmodern challenge* (Middletown, 2005): 97-100.

¹⁰³ Eugene D. Genovese and Leonard Hochberg, *Geographic Perspectives in History* (Oxford, 1989): vii.

¹⁰⁴ The ‘persistence school’ discussed above in section 1.2 is full of examples of this selective integration of geography into explanatory models.

elasticity of substitution is. Or simply assuming it away: ‘the elasticity of substitution between natural resources and labour-and-capital-goods is no less than unity.’¹⁰⁵ If that is so, development ad infinitum can be achieved by reinvesting the rents from natural resource exploitation in physical capital, thereby preventing the stock of productive capital from ever depleting.¹⁰⁶ To this theoretical reasoning, some economic historians add the evidence of reconstructed national accounts: since 1800 ‘the gifts of nature have ended up as economically speaking trivial—at two or three percent of national income.’¹⁰⁷ In this perspective, differences in natural resources between economies cannot explain divergent outcomes because they make up an insignificant percentage of costs for most industries, are responsible for a small and decreasing share of national output in most countries, and they are not to be considered more ‘basic’ or ‘essential’ than any product which enters into the production of other products.

These objections are almost part of the common sense of most economic historians, and both stem from a rather narrow construction of ‘resources’ and ‘geography’. However, they are analytically distinct, so let me tackle them individually. If we are willing to overcome self-imposed barriers to intellectual exchange with other disciplines, then it becomes obvious that no one who thinks deeply about geography believes it to be ‘static’ in any meaningful way. This is true most evidently of geographers, but it also applies to agronomists, philosophers, rural and urban sociologists, architects, and many others. In a sprawling literature across all these fields, spaces (‘natural’ and ‘built’, although the distinction is blurred) are thought of as the products of interrelations, and geography is seen as a process, not a closed system.¹⁰⁸ The way we approach geography, particularly when thinking about long-term development, should not ignore the expert advice of scholars in other disciplines, who seem to agree that ‘if space is a product, our knowledge of it must be expected to reproduce and expound the process of production.’¹⁰⁹ And if there is a process of production behind all economic spaces, then studying it requires a kind of history: good news for our guild.

From a historian’s point of view, then, geography and factor endowments are more long-lasting than (most) policies and (many) institutions, but that is no excuse to think of them as static—it just means we should measure their change on a longer scale.¹¹⁰ Which should not be a problem: changing time scales is after all the historian’s bread and butter—and, for economic historians in particular, the long-term is often where we feel more at home. Studying such transformations is interesting among other things because the

¹⁰⁵ R. M. Solow, ‘Intergenerational Equity and Exhaustible Resources,’ *Review of Economic Studies* 41 (1974): 41.

¹⁰⁶ Assuming additionally that physical capital does not depreciate. John M. Hartwick, ‘Intergenerational Equity and the Investing of Rents from Exhaustible Resources,’ *AER* 67, 5 (1977): 972.

¹⁰⁷ Deirdre N. McCloskey, *Bourgeois Dignity: Why Economics Can’t Explain the Modern World* (Chicago, 2010): 167.

¹⁰⁸ A highly readable way into this vast literature is Doreen B. Massey, *For Space* (London, 2005): 9-19.

¹⁰⁹ Lefebvre, *Production*, 36.

¹¹⁰ In this sense, Sugihara’s approach to what he calls factor-endowment *conditions* (hence subject to change) is more historical than Engerman and Sokoloff’s; see Kaoru Sugihara, ‘The second Noel Butlin lecture: labour-intensive industrialisation in global history,’ *Australian Economic History Review* 47, 2 (2007).

direction of that change cannot always be neatly traced in an ‘environment versus economy’ axis. The historical evolution of forest and shrubland formations in Uruguay across both the northern and southern Campos nicely illustrates this point. While the initial development of export-oriented livestock production in the late-colonial period (studied in Chapter 2) and the introduction of sheep-farming in the 1860s (Chapter 3) reduced floristic diversity on the evergreen prairies, the further development of the sector in the late-nineteenth century created new ecological niches for indigenous forests (*montes nativos*) to thrive and persist up to the present. The intensification of livestock agriculture between the 1870s and the 1900s had the unintended effect of encouraging a diversity of native forest vegetation features: the enclosure of pastureland and the construction of transportation networks, roads first and railroads later, fragmented the landscape and created gaps where woody vegetation could thrive, undisturbed by livestock herds.¹¹¹ The consequences of agricultural intensification included, in this particular context, both productivity increases (Chapter 4) and *more* ecological diversity. This historical result resonates with experimental findings by life scientists who have shown that the relationship between grazing and plant species composition and structure is difficult to generalise, even within a single biogeographical region, such as the River Plate Grasslands.¹¹² To economic historians interested in the environment (or environmental historians interested in the economy), this story suggests that instances of unintended re-afforestation are not invariably the result of economic catastrophe, but can in fact be linked to episodes of economic growth.¹¹³

Regarding the second set of objections, while I often admire the elegance of neoclassical economic theory and its ability to offer counter-intuitive insights, there is a fundamental limitation in thinking about the impact of geography on economic growth only in terms of the changing market cost of natural resources. Firstly, relative cheapness cannot be automatically equated with a lack of importance.¹¹⁴ Water provision, for example, is a minor cost for livestock producers in a well-irrigated landscape such as Uruguay’s southern Campos, but cows still need freshwater and no amount of specialised labour, veterinary advice, or GPS tracking systems will change that. As I write this in a time of lockdown during a pandemic I am even more aware than usual that not ‘all products are basic.’¹¹⁵ Secondly, markets are notoriously bad at offering price signals consistent with sustainability beyond a short time horizon: if this applies to urban mortgage markets,

¹¹¹ Gautreau, ‘Rethinking the dynamics.’

¹¹² Alice Altesor, Martín Oesterheld, Elsa Leoni, Felipe Lezama, and Claudia Rodríguez, ‘Effect of grazing on community structure and productivity of a Uruguayan grassland,’ *Plant Ecology* 179, 1 (2005).

¹¹³ Cf. Peter Boomgaard, ‘The Forests of Southeast Asia, Forest Transition Theory and the Anthropocene, 1500-2000,’ in *Economic development and environmental history in the Anthropocene: perspectives on Asia and Africa*, ed. Gareth Austin (London, 2017): 189-90.

¹¹⁴ Kander, Malanima, and Warde made this point regarding energy carriers in *Power to the People: Energy in Europe Over the Last Five Centuries* (Princeton, 2013): 7.

¹¹⁵ McCloskey provides an unusually clear statement of this radically neoclassical thesis: ‘people feel instinctively that oil is “basic,” because it enters into so many products. To this the economist answers that all products are basic, which is to say that all products enter directly or indirectly into the production of others. “Basic” is therefore pretty much meaningless. Pencils and flower pots and bed frames are as “basic” as oil.’ McCloskey, *Bourgeois Dignity*, 167.

then it surely applies to long-term soil quality.¹¹⁶ The irony is of course that if and when relative market costs change in the future, and the share of land in national income becomes once again large, it may be too late to do something about it. This is, incidentally, another reason why the Uruguayan case, a high-income country where soil rents remain relevant, matters for students of global development.¹¹⁷ Thirdly, ecologists have conclusively shown that substitutability of non-natural capital for natural capital is far from perfect: soil erosion or a nitrogen losses cannot be entirely solved by throwing more physical capital at land.¹¹⁸

Therefore, this dissertation will steer away from aggregate measures of natural capital, as they would fail to capture the fundamentals of economic and environmental change during the period. The most widely used natural capital methodology, developed by the World Bank, assumes perfect substitutability between natural resources and manufactured capital, does not account properly for depreciation in resources (particularly in soils), and, crucially for the case of Uruguay, does not consider livestock as capital (which would be very puzzling to many local rural producers past and present).¹¹⁹ While attempts to provide long-term series of natural capital are useful in signalling the changing market value of land and can be a welcome addition to estimations of national income accounts, they fall short when trying to explain economic and environmental change in a specific geographic and historical context.¹²⁰

The approach to geography I am arguing for is of course not new in economic history. Already in 1922, Lucien Febvre made a plea for a kind ‘geographical possibilism’ that placed human agency at its core (‘no necessities, only possibilities’) which was taken up in the decades that followed by the regional economic histories produced by the scholars of the *Annales*.¹²¹ Thinking about which economic strategies are made possible by the natural environment, rather than what sort of economic behaviour is ‘determined’ by it, is a good place to start. In this context, Henri Lefebvre’s concept of ‘spatial code’ can be a useful analytical tool for understanding economy-environment interactions through time. A spatial code is ‘a means of living in that space, of understanding it, and of producing it’ which emerges as a ‘practical relationship, as part of an interaction between “subjects” and their space and surroundings.’¹²² To bring this concept to (rural) economic history, we can think of a spatial code as including a system of land tenure, a preference for certain

¹¹⁶ I owe the idea of ‘time horizons’ to the Ellen McArthur Lectures delivered by Avner Offer in Cambridge in 2018.

¹¹⁷ For a present-day economic analysis, see Gabriel Oyhantçabal and Martín Sanguinetti, ‘El agro en Uruguay: renta del suelo, ingreso laboral y ganancias,’ *Problemas del desarrollo* 48, 189 (2017).

¹¹⁸ Robert Costanza et al., ‘The value of the world’s ecosystem services and natural capital,’ *Nature* 387 (1997).

¹¹⁹ World Bank, *The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium* (Washington D.C., 2011).

¹²⁰ A recent example for Uruguay is Silvana Sandonato and Henry Willebald, ‘Natural Capital, Domestic Product and Proximate Causes of Economic Growth: Uruguay in the Long Run, 1870–2014,’ *Sustainability* 10, 3 (2018).

¹²¹ Lucien Febvre, *La terre et l’évolution humaine: introduction géographique à l’histoire* (Paris, 1922): 284. For an overview of subsequent *annaliste* ideas on the integration of history and geography, see Peter Burke, *The French Historical Revolution: The Annales School, 1929–89* (Stanford, 1990): 36–40.

¹²² Lefebvre, *Production*, 16–18; 46–48. The quotations are taken from pages 47–48 and 18.

agricultural techniques, a prevailing crop repertoire, particular investments in ‘landesque capital’, etc.¹²³ As an interrelated set of structures, a spatial code has an inertia of its own, which makes it generally long-lasting, but not in perpetuity. Factor endowments make a range of spatial codes possible, but do not mechanically cause one of them to prevail. Indeed, the two parts in which this dissertation is divided correspond to two different spatial codes within broadly similar factor endowment conditions: in the late-nineteenth century, as lands were enclosed with barbed wire, traditional grazing on unfenced ranges gave way to agricultural intensification and greatly limited the resources available for peasant farming. The comparative advantage in land-extensive agriculture did not change, but the way in which it was reproduced on the ground did.

For these concepts to be effective analytical tools, rather than simply help us stage a rhetorical discussion, we need to fill them with specialist knowledge on the interactions between agriculture and ecology. After all, with a task so great as trying to understand long-term economic development, we economic historians need all the help we can get. I can only aspire to a layman’s understanding of the relevant life sciences literature on these themes, but I believe open-minded researchers (and open-minded citizens in general) should endeavour to understand the key messages from scientific scholarship, especially when it comes to our societies’ relationships with the environment. The reader will hopefully come across this understanding of geography’s place in economic history, and the curiosity for the findings of other disciplines it requires, many times in the chapters that follow.



¹²³ ‘Landesque capital’ refers to enduring landscape modifications (such as terracing and irrigation) that are tied to the land and increase its productivity; see Mats Widgren and N. Thomas Hakansson, ‘Landesque Capital: what is the concept good for?’ in *Landesque Capital: The Historical Ecology of Enduring Landscape Modifications*, ed. Mats Widgren and N. Thomas Hakansson (Walnut Creek, 2014).

Part I | The Closing Frontier, 1779-1870s

When the first large shipments of cowhides left the colonial harbours of Montevideo and Buenos Aires in 1779, their geographical location at the fringes of the Iberian New World was an appropriate measure of their political and economic position.¹ The scarcely populated plains surrounding the River Plate were then home to parochial peasant societies in which wheat agriculture was the major occupation of labour and, judging from tithe records, the largest sector in the economy.² By 1800, after two decades of external trade in local leather for African slaves monetised in Potosí silver, living standards in the two southernmost Atlantic ports were arguably the highest in Latin America and their urban growth outpaced that of Lima and Mexico City, the core cities of Spain's (then faltering) empire.³ In the decades that followed the gap only widened. In the 1860s another ecological windfall, this time starring sheep, sustained Uruguay's average incomes at levels comparable to those of rich Western societies whilst most Latin American economies grew at very modest rates.⁴

Throughout this period, the vast majority of the countryside remained unenclosed, rural slavery was widespread, and agricultural land was widely available to free households. The two chapters that follow deal with the developments within this 'spatial code' chronologically. Chapter 2 focuses on the late-colonial period, explaining how slavery, wage labour, and peasant smallholding interacted within a farming calendar dominated by grain and livestock agriculture. Chapter 3 takes on the so-called 'lost decades' following the end of Spanish colonial rule, focusing on two crucial social and economic transformations: the slow process of emancipation from slavery in the context of civil war and the fast adoption of Merino sheep by producers across Uruguay.

¹ For a classic account of cores and fringes in colonial Latin America see James Lockhart and Stuart B. Schwartz, *Early Latin America: A History of Colonial Spanish America and Brazil* (Cambridge, 1983).

² In 1782 almost 80% of tithes in the colonial hinterlands of Buenos Aires and Montevideo were levied on grain (predominantly wheat), compared to less than 15% on cattle by-products. Juan Carlos Garavaglia, *Economía, sociedad y regiones* (Buenos Aires, 1987): 36.

³ On wages see Arroyo Abad, Davies, and van Zanden, 'Between Conquest and Independence'. On population growth, Lyman L. Johnson and Susan M. Socolow, 'Población y espacio en el Buenos Aires del siglo XVIII,' *Desarrollo Económico* 20, 79 (1980); Raquel Pollero, *Historia demográfica de Montevideo y su campaña (1757-1860)* (Montevideo, 2016): 265.

⁴ The comparison between the economic performance of the River Plate and Peru over the decades following independence is particularly revealing: Jorge Gelman, '¿Crisis postcolonial en las economías sudamericanas? Los casos del Río de la Plata y Perú,' in *Latinoamérica y España, 1800-1850: un crecimiento económico nada excepcional*, ed. Enrique Llopis and Carlos Marichal (México, 2009).

chapter two

Environment and Rural Slavery in the River Plate Frontier, 1779-1810 *

In the spring of 1791, Patricio Belén became the overseer (*capataz mayor*) of a very large estancia in colonial Banda Oriental, present-day Uruguay. From his saddle, he oversaw herds totalling upwards of 15,000 tame cattle and 2,500 horses and supervised up to 80 rural workers, both slaves and free labourers. Patricio was a slave himself, as were six of the seven foremen who reported to him, each in charge of a *puesto*, a large ‘section’ of the estate, with its designated herds and ranch hands. Regardless of their managerial position, however, slaves were not allowed to sow wheat in their own plots, or at least that was the case until Francisca Ximénez, Patricio’s wife, successfully challenged the rule that same year. By then the estancia sold thousands of cowhides every year for export to Cádiz, many of which eventually found their way to Liverpool and London, as well as firewood, wheat, and meat for the urban markets of Montevideo and Buenos Aires. Slaves in this estancia—women as well as men, those herding on horseback and those tending the orchard—secured a small share of those profits, in cash and in kind: cloth and tools, tobacco and *yerba mate*.¹ If particularly well documented, the set of social relations surrounding agriculture in this estancia was not exceptional. As a colonial surveyor reported in the 1790s, throughout the Banda Oriental ‘Spaniards [i.e. Spanish people and white creoles] have no issue working alongside Negros, mulattos’ even when ‘the foreman belongs to one of these classes.’²

This chapter puts forward three propositions about how environment-economy interactions shaped this unusual character of rural slavery in the Banda Oriental, where livestock agriculture relied on free and unfree labour in different proportions throughout the year and white creoles could find themselves routinely under the supervision of black slaves. It contends, first, that resource ratios in the Banda Oriental (abundant land, scarce labour, scarce capital except for cattle) made slavery profitable, but did not completely displace free labour which remained predominant in most farms and ranches during most of the agricultural calendar. Second, that the disaggregated content of those natural resources (the specifics of climate,

* A slightly shorter version of this chapter is at third-round R&R stage with the *American Historical Review*. I thank the six anonymous reviewers and the *AHR* editor, Alex Lichtenstein, for their very many comments and suggestions.

¹ BA, IX.6-8-1, ff.687-694, ‘Cuaderno de Vestuarios de Esclabos, raciones, y otros gastos peculiares a la Administracion de esta Estancia’ (January 1794).

² ‘los españoles no ponen reparo en servir de peones junto con los negros, mulatos é indios; y aun cuando el dueño o capataz sea de alguna de estas últimas tres clases.’ Félix de Azara, *Viajes por la América del Sur* (Montevideo, 1850): 282.

topography, soils, and animals) encouraged crop choices and ranching task systems that created possibilities for enslaved workers to attain levels of managerial authority reserved for Europeans or white creoles in the countryside of most American colonies, whether Iberian, Anglo, or French. Third, that this grassland ecology influenced a set of social relations stretching well beyond livestock production, shaping the personal autonomy of slaves, as well as the gender distribution of resources and tasks. All three propositions can be summarised in an argument that is a form of ‘geographical possibilism’:³ the environment of the Banda Oriental presented slaves with opportunities that were unavailable elsewhere, and that they boldly exploited to reshape some aspects of the social relations of domination in which they were involved. For historians of Latin America, this interpretation of rural slavery in an overlooked case offers a new account of how economic resources were mobilised to sustain a late-colonial boom. To global economic and labour historians, this chapter extends an invitation to consider the environment as one of the forces that can, in different places and periods, either limit workers’ autonomy or give them strength.

The argument is developed through a game of scales, alternating between the workings of the rural economy as a whole and a micro-historical site that brings them to life. Section 1 introduces some key aspects of slavery in the River Plate countryside in the context of broader historiographical debates and sketches this chapter’s interventions. Sections 2 and 3 describe and explain the ‘spatial code’ (the series of institutions and techniques surrounding economic uses of land) that characterised rural development in colonial Uruguay.⁴ Section 2 uses quantitative sources to characterise the Banda Oriental as an economic frontier defined by widespread access to farmland but concentrated ownership of livestock. It is shown that the land market was much more restricted than elsewhere in Latin America, and considerably less brisk than the rural labour market, which included both seasonal wage negotiations and the buying and selling of property rights in people. Section 3 looks more closely at which crops were grown and which animals raised, by whom and how, reconstructing the local agro-ecology with evidence from primary sources and insights provided by modern scientific literature. Here, attention is focused on how the distribution of farming tasks—much like that of land itself—was differentiated by gender, and on how the seasonal complementarity of wheat and cattle shaped the demands for labour and the relationships between slaves and free workers. Section 4 joins the threads together in a series of entangled stories of struggles for autonomy within the world of work that the previous sections reconstructed. Throughout, the analysis highlights the effects of the interaction of the natural environment, colonial institutions, and economic forces on the character of rural slavery as a labour system and on the opportunities available to enslaved people to expand their material welfare and their social ties.

³ The term, introduced in Chapter 1, was coined by Lucien Febvre, *La terre*, 284.

⁴ Lefebvre’s concept of ‘spatial code’ was expanded upon in Chapter 1 (pp. 45-46); see Lefebvre, *Production*, 16-18, 46-48.

1 Labour in the colonial countryside: two debates

Francisca and Patricio lived in an immense, fenceless, estancia known to contemporaries and historians as ‘Estancia de las Huérfanas’, or more simply ‘Estancia Las Vacas’, and which will be our window into the ways of life surrounding economic resources and activities. It covered about 120,000 hectares of the south-west corner of the Banda Oriental (Map 2.1). The estancia had been established decades earlier by Jesuits, who kept 68 black slaves there, as recorded in the inventory they compiled at the time of their expulsion in 1767. By the late 1770s it was owned by the Hermandad de la Caridad, a lay corporation of influential male merchants and bureaucrats based at Buenos Aires, the viceregal capital standing on the opposite shore.⁵ Since the 1980s, with the ‘renaissance’ of rural history in Argentina and Uruguay, scholars have revisited this and other historical estancias as sites to discuss the nature of the late-colonial rural economy in the River Plate.⁶ For our present purposes—understanding how the natural environment shaped the autonomy of workers and the uses of land—two debates stand out.

The first debate centres on what we could call ‘the economics of the gaucho’. Gauchos were free, mobile rural workers on horseback who became the unnamed soldiers of revolutionary armies, fierce characters poets could hymn—and did.⁷ Scholars celebrated them too in their own way: traditional historiographies constructed the gaucho as a founding national myth on both shores of the Plate.⁸ But why did gauchos work for wages only for a few months each year? For European observers at the time it was straightforward: local rural people were lazy and had no use for the comforts that permanent employment could provide.⁹ Some historians have taken the evidence of contemporary comment on the gaucho’s ‘disinclination for work’ at face value and argued that it was an expression of rustic, pre-capitalist values effectively resisting

⁵ Religious and local scholars first transcribed many of this estancia’s manuscripts in the first half of the twentieth century: Carlos Leonhardt, ‘Documentos inéditos relativos a los antiguos Jesuitas en la actual República Oriental del Uruguay,’ *Revista del Instituto Histórico y Geográfico del Uruguay* V, 2 (1926) and Natalio Abel Vadell, *Antecedentes históricos del antiguo puerto de Las Vacas (El Carmelo), el extinguido pueblo de Las Víboras y de la calera de las Huérfanas* (Buenos Aires, 1955). On the Hermandad and its status in River Plate viceregal politics and commerce, see Susan M. Socolow, *The Merchants of Buenos Aires, 1778-1810: Family and Commerce* (Cambridge, 1978): 95-100.

⁶ For an overview, see Garavaglia and Gelman, ‘Rural history’.

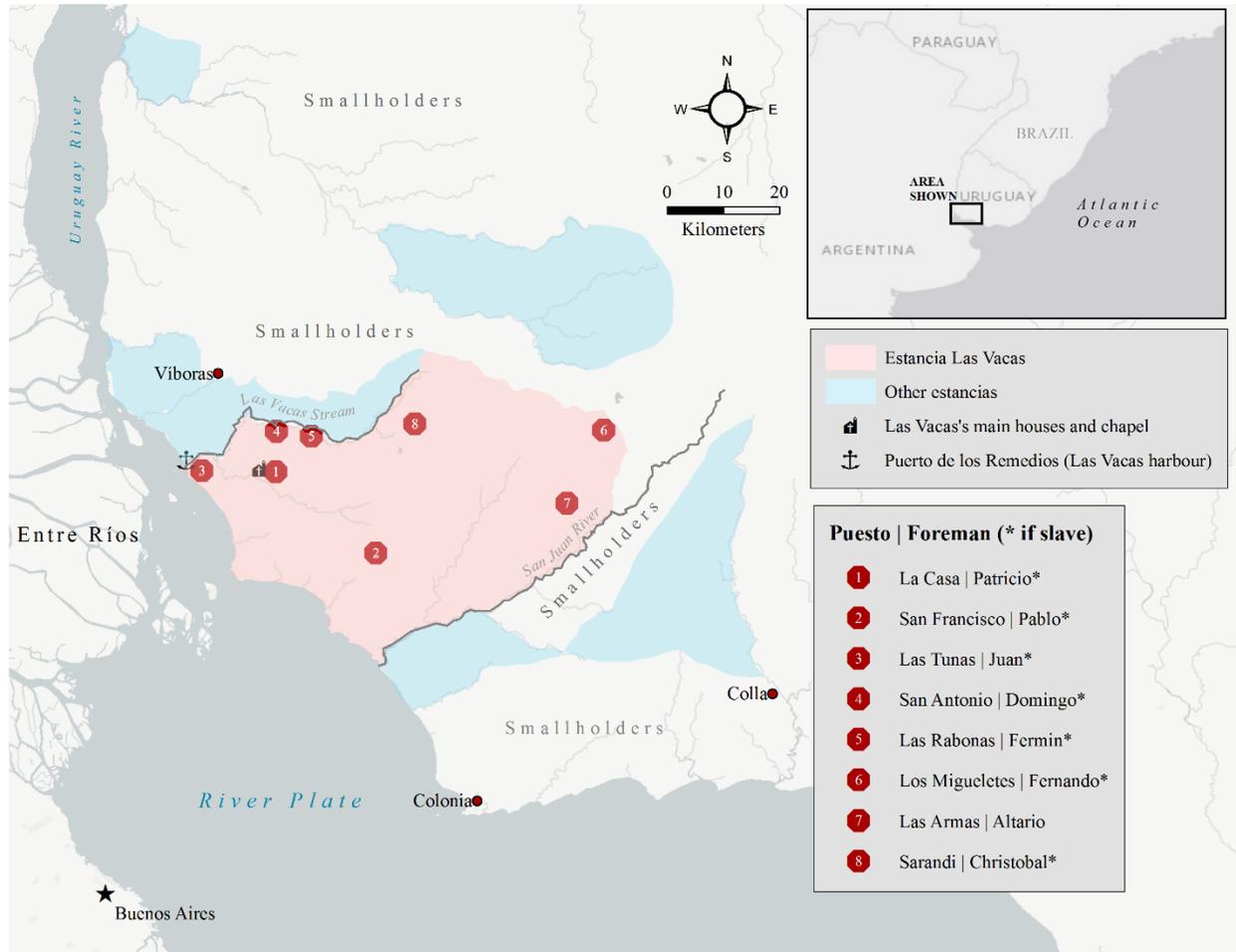
⁷ Literary celebrations of gauchos became more common as their way of life faded in the late-nineteenth century. The most influential of them, and still mandatory reading when I went to secondary school, is José Hernández, *El gaucho Martín Fierro* (Buenos Aires, 1940 [1872]). Also in 1872 across the estuary another signal fictional narrative of the gaucho was published: Antonio D. Lussich, *Los tres gauchos orientales* (Montevideo, 1964 [1872]). In the twentieth century many poets, from Borges to Neruda, continued to write odes to the gaucho.

⁸ On the gaucho’s part in nation-building, see, for Argentina and Uruguay respectively, Juan Carlos Garavaglia, ‘Gauchos: identidad, identidades,’ *América: Cahiers du CRICCAL*, 30 (2003); Museo Histórico Nacional, ‘En torno al gaucho y lo gauchesco,’ *Revista Histórica* LVI, 94-96 (1962). Three remarkable social histories of the gaucho are Ricardo E. Rodríguez Molas, *Historia social del gaucho* (Buenos Aires, 1968), Fernando O. Assunção, *El gaucho: estudio socio-cultural* (Montevideo, 1978), and Richard W. Slatta, *Gauchos and the Vanishing Frontier* (Lincoln, 1983).

⁹ See, for example, Félix de Azara, *Memorias sobre el estado rural del Río de la Plata en 1801* (Madrid, 1847): 5-7.

‘proletarianization’ (i.e. dependence on wages).¹⁰ Other scholars, however, pointed to the workings of the labour market as an explanation, arguing either that demand for ranching work was highly seasonal and low for most of the year, or that it was labour supply which was generally low and especially so in summer.¹¹

MAP 2.1. Estancia *Las Vacas* and its *puestos*, 1791



Note: location map shows present-day borders for orientation purposes.

Sources: drawn by the author. Georeferenced maps: Instituto de Historia, Facultad de Arquitectura, Plano 3264 (Montevideo, 1962), Lucía Sala de Tourón et al., *Evolución económica*, 292-3. Information on foremen and puestos taken from: BA, IX.6-8-1, f.604, ‘Plan que manifiesta los Gastos Ordinarios’, July 1791.

¹⁰ Salvatore and Brown, ‘Trade and Proletarianization’, 447.

¹¹ See, respectively, Samuel Amaral, ‘Rural production and labour in late colonial Buenos Aires,’ *JLAS* 19, 2 (1987); Amaral, *Rise of Capitalism*, 159-81, and Jorge Gelman, ‘New Perspectives on an Old Problem and the Same Source: The Gaucho and the Rural History of the Colonial Rio de la Plata,’ *HAHR* 69, 4 (1989); Gelman, *Campesinos*, 218-42; cf. Salvatore and Brown, ‘Old Problem’.

I will argue over the next sections that most free rural working people, for whom gauchos are no more than a reductive and male shorthand, chose not to be employees for most of the year because the labour market only enticed them during the months between the sowing and the harvesting of their main crops (wheat, corn, and beans).¹² Their reservation wage (the minimum rate at which they were willing to sell their labour) was high not because they valued leisure much more than consumption but because they had a strong outside option: working in a small household productive unit without entering a permanent relation of dependence. Access to fertile soils, as well as the abundance of livestock to provide muscle energy and manure, contributed decisively to making smallholder permanent cropping sustainable in the region.¹³ Present-day studies show how vulnerable these lands are to soil erosion, and therefore how ecologically fragile their economic potential can be, but as of the late-eighteenth century this was a very distant prospect, as they had never been farmed before the colonial period.¹⁴ The economics of the gaucho were, therefore, the result of an ecology and a property rights environment which made their reservation wage very high. This contributes to explain why there was a demand for slave labour in the colonial livestock economy of the River Plate, the second historiographical debate this chapter addresses, and to which we now turn.

Traditional scholarship assumed, rather than proved, the lack of versatility, individual initiative, and even horsemanship of slaves.¹⁵ Pre-industrial, extensive ranching needed autonomous riders scattered throughout the open range, and, almost by definition in these interpretations, slaves could not be autonomous which made them 'incompatible' with pastoral agriculture as it was practiced in the region.¹⁶ These premises were falsified by economic historians already in the 1960s, who found ample evidence for coerced labour in colonial estancias, but have nonetheless persisted as a predominant common sense with broad implications for the historical imagination of Argentina and Uruguay as 'white nations' in the Latin American context.¹⁷ Further challenging this myth, in the 1980s and 1990s rural historians reconstructed the colonial countryside in greater detail and showed that 'slavery was perfectly compatible with the River

¹² With tithe records as evidence, Garavaglia argued that crop farming rather than cattle raising was the major sector of the economy in the late-colonial period. Juan Carlos Garavaglia, 'Economic growth and regional differentiations: The River Plate region at the end of the eighteenth century,' *HAHR* 65, 1 (1985).

¹³ The central areas of the colonial Banda Oriental were some of the most fertile in the River Plate Grasslands biogeographical region; see Soriano, 'Grasslands.'

¹⁴ Native peoples practiced forms of semi-cultivation before European arrival, but not deliberate tilling; see Renzo Pi Hugarte, *Los indios del Uruguay* (Montevideo, 1998). On soil erosion as a result of agricultural practices over the last two centuries, see Baldi and Paruelo, 'Land-use.'

¹⁵ Carlos M. Rama, 'The Passing of the Afro-Uruguayans From Caste Society into Class Society,' in *Race and Class in Latin America*, ed. Magnus Mörner (New York, 1970): 32.

¹⁶ Giberti, *Ganadería*, 40.

¹⁷ Sala de Touron, de la Torre, and Rodríguez, *Estructura económico-social*, 143-44. On the historical 'whitening' of Uruguay and Argentina, see George Reid Andrews, *Blackness in the White Nation: A History of Afro-Uruguay* (Chapel Hill, 2010); *The Afro-Argentines of Buenos Aires, 1800-1900* (Madison, 1980).

Plate colonial estancia.¹⁸ Standing on their shoulders, this chapter places that rural world in the context of the literature on slaves' autonomy and 'internal economies' in the Americas. Because colonial Uruguay and Argentina have consistently been defined as 'societies with slaves' rather than 'slave societies' in Latin American history (a useful classification in some respects), these comparative perspectives have been somewhat neglected, particularly from the point of view of economic history.¹⁹ The significance of slaves working alongside free labourers and reaching positions of managerial authority can only be appreciated against the background of other New World histories.

From the vantage point of this thesis, which focuses on how productive resources, including people, were mobilised for agricultural development, these two debates on gauchos and slavery must be brought into dialogue with one another.²⁰ This chapter's interventions in both debates hinge on an environmental turn in the economic history of agriculture in late-colonial Uruguay. I rely on quantitative sources on land ownership and use, contemporary accounts by natural scientists, and modern scientific literature to offer a more considered analysis of the impact of soils, climate, and animal behaviour on rural work and rural workers.²¹ I also draw insights from economic models to help explain how the availability of agricultural land for free peasants posed a problem for large estancias, as output was limited by labour rather than land, and under which conditions it made sense for them to obtain slaves. On this point, I should note that I disagree with some rural historians on the merits of the explicit use of modern economic analysis to explain pre-industrial economic life: the fact that evidence suggests that large colonial landowners could not calculate, say, the present value of a slave's work compared to a free labourer's does not mean that using such conceptual tools to understand their behaviour is anachronistic, any more than is resorting to 'relations of production' or 'gender', to name two other useful categories of analysis which are also, as such, conspicuously absent from colonial-era manuscripts.²²

¹⁸ Mayo, *Estancia y sociedad*, 141. See also, for an overview, Juan Carlos Garavaglia and Jorge Gelman, 'Mucha tierra y poca gente: un nuevo balance historiográfico de la historia rural platense (1750-1850)', *Historia Agraria*, 15 (1998).

¹⁹ Borucki, 'Esclavitud'. A comparative work on New World rural slavery which does include the River Plate is Andrew Sluyter, *Black Ranching Frontiers: African Cattle Herders of the Atlantic World, 1500-1900* (New Haven, 2012).

²⁰ As Lyman Johnson argued for the case of artisans in colonial Buenos Aires, to understand the experiences of slaves in the Americas outside the world of the plantation we need to place them side by side with wage workers: 'The Competition of Slave and Free Labor in Artisanal Production: Buenos Aires, 1770-1815,' *International Review of Social History* 40, 3 (1995): 424.

²¹ The environmental perspective on the agricultural history of the River Plate was pioneered by Garavaglia, 'Ecosistemas'; 'Paisaje rural, agrosistemas y producción agraria (siglo XVIII)', in *Procesos americanos hacia la redefinición colonial*, ed. Enrique Tandeter and Jorge Hidalgo Lehuédé (Madrid, 2002).

²² Cf. Mayo, *Estancia y sociedad*, 137.

2 Resource ratios, property, and markets

In the 1770s, Montevideo and its immediate jurisdiction were home to only about 5,000 people but to more than 200,000 cattle and horses.²³ By the turn of the century there were about 1.5 million ruminants in the countryside of Buenos Aires, a city of 70,000 inhabitants.²⁴ The ratios of cattle to people in the River Plate eventually decreased from those fabulous levels of 20:1 in the late colonial period to 10:1 by the 1880s, but they remained the highest in the world by a large margin.²⁵ Population densities, on the other hand, were amongst the lowest anywhere: less than 2 people per square kilometre in the jurisdictions of Buenos Aires and Montevideo by 1800, even lower than other thinly populated areas at the time such as Sub-Saharan Africa (where recent guesstimates range from 2.3 to 5.8) or the United States (2.4), and on a wholly different order of magnitude compared to Europe (23.7, excluding Russia).²⁶

In the late eighteenth century, the 'vast countryside' of the Banda Oriental was the frontier's frontier, 'a sort of far west of mad and stormy prosperity' as Halperin defined it.²⁷ Rural settlement there had to be encouraged, in the words of one petitioner to the governor of Montevideo in 1805, to protect the colony against 'the intrigues of Lusitanian ambition and the invasions of unfaithful Indians.'²⁸ High-mobility native communities such as the Charrúa, the Genoa, and the Minuanes, their number estimated at a few thousand, continued to live in these prairies. They engaged the colonial formations (Spanish towns to their south, Portuguese to their north, and, until 1767, Jesuit missions to their north-west) at their loosely defined fringes.²⁹ The abundance of horses, who found a 'paradise' in the River Plate, further increased the ability of these small native populations to effectively resist any form of labour coercion or wholesale incorporation into the colonial economy.³⁰

²³ Pollero, *Historia demográfica*, 265; Comisión Nacional, *Archivo Artigas*, vol. I (Montevideo, 1950): 30-32.

²⁴ Juan Carlos Garavaglia, *Pastores y labradores de Buenos Aires: una historia agraria de la campaña bonaerense, 1700-1830* (Buenos Aires, 1999): 115-16; Johnson and Socolow, 'Población y espacio'.

²⁵ Michael George Mulhall, *Mulhall's Dictionary of Statistics* (London, 1884): 74-76.

²⁶ Gareth Austin, 'Resources, techniques, and strategies south of the Sahara: revising the factor endowments perspective on African economic development, 1500-2000', *ECHR* 61, 3 (2008): 590-91.

²⁷ 'una suerte de *far west* de alocada y tormentosa prosperidad' Tulio Halperin Donghi, *Revolución y guerra: formación de una élite dirigente en la Argentina criolla* (Buenos Aires, 1972): 27-28. Contemporary descriptions of this 'vast countryside' and proposals to populate it can be found in BA IX-30-3-9, Exp. 7, 'Expediente sobre el arreglo y resguardo de la campaña de este Virreynato'.

²⁸ 'las intrigas de la ambicion Lusitana y las imbasiones de los Indios infieles.' MVD, Archivo de la Escribanía de Gobierno y Hacienda, Exp. 1804, No. 100, Pedro Medrano on behalf of Juan José Durán to the Governor of Montevideo, May 6th, 1805, published in Juan E. Pivel Devoto, *Colección de documentos para la historia económica y financiera de la República Oriental del Uruguay: Tierras, 1734-1810* (Montevideo, 1964): 547-62.

²⁹ Pi Hugarte, *Indios*; Sarreal, 'Disorder, Wild Cattle'.

³⁰ Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, 2003): 84; Gustavo Verdesio, *Forgotten Conquests: Rereading New World History from the Margins* (Philadelphia, 2001).

A generous ecology translated low population densities into an abundance of fertile land, which was extremely cheap when compared to labour: four acres of farmland near Montevideo cost about the same as a ranch hand's weekly wages, and even less near Colonia.³¹ As a result, there was a land market only for property rights over particularly well-placed farms. Over three-fourths of agricultural lands were not obtained through market means, but through direct grants from the local authorities, in contrast with urban plots for which there was a more active market (Table 2.1).³²

Access to farmland was widespread among free households, most of whom relied solely on the labour of their families to produce food for themselves and sell wheat, corn, fruits, or vegetables to urban markets. Indeed, according to the surviving records summarised in Table 2.1, most of the people recorded as owning farms (*chacras* of about 280 hectares) in the Montevideo countryside in the late-colonial decades did not have the honorific title of 'Don' or 'Doña', which by then reached most subjects.³³ The cheapness of agricultural land also reached large estates. Estancias (which varied greatly in their size, but were at least of 1,500 hectares) were very rarely used as collateral when taking out a loan, thus highlighting the low economic value of property rights over large tracts of land.³⁴ This scenario contrasts with other highly productive but not so thinly populated South American agrarian hinterlands, such as the Colombian Cauca valley, where during the same period hacienda land was often used as collateral.³⁵ By the same token, sales of estancias in the Montevideo countryside were comparatively rare, with only about one in ten new owners in the late-eighteenth century having bought their land.³⁶ The very low relative frequency of sales is even more noticeable if put in a wider Latin American context: in the agricultural hinterland of Lambayeque on Perú's northern coast, Ramírez estimated that more than 54% of large haciendas were acquired through sales from 1720 to 1820, a similar proportion to the one Taylor reported for colonial Oaxaca in southern Mexico; further north in León, Brading found that more than 90% of his sample of haciendas had been sold a mean of four times between 1710 and the mid-nineteenth century.³⁷

³¹ Evidence for Montevideo in the mid-eighteenth century: 'El Cabildo al Gobernador de Montevideo, Tasación de 1751,' published in Juan Alejandro Apolant, *Padrones olvidados de Montevideo del siglo XVIII* (Montevideo, 1966). For Colonia in the late-eighteenth century: Gelman, *Campesinos*, 121-23.

³² In a West African context, Fenske has found evidence of thin land markets within a context of fenceless abundant land: James Fenske, 'Land abundance and economic institutions: Egba land and slavery, 1830-1914,' *EcHR* 65, 2 (2012).

³³ The entry for the honorary title *Don* in the *Diccionario de Autoridades* (1732) claimed its use had extended to 'the majority of subjects,' which suggests that people without the title were poorer than most. On the uses of Don and Doña see Lockhart and Schwartz, *Early Latin America*, 317-18.

³⁴ Of 187 surviving mortgage records from the Banda Oriental between 1796 and 1810 only 10 of them used estancias as a collateral. MVD, AGA, 'Registro general de hipotecas,' printed in Pivel Devoto, *Colección*, 1188-231.

³⁵ Magnus Mörner, 'Rural economy and society in Spanish South America,' in *Colonial Spanish America*, ed. Leslie Bethell (Cambridge, 1987): 297.

³⁶ Of 166 surviving estancia property deeds registered in Montevideo between 1733 and 1807 only 21 had been sold. MVD, AGA, Reg. 90, Caja 20, Libro 4.

³⁷ Susan E. Ramírez, *Provincial Patriarchs: Land Tenure and the Economics of Power in Colonial Peru* (Albuquerque,

TABLE 2.1. Surviving land titles from the Montevideo jurisdiction, 1733-1807

Kind of property	N	% market transfers	% 'Don'	% female owner
Solares (for urban housing)	62	32.3	23.4	9.4
Sitios (urban plots)	48	31.3	52.1	10.4
Chacras (arable farms)	83	18.1	43.4	4.8
Estancias (cattle ranches)	166	12.7	63.3	9.0
<i>Total</i>	<i>359</i>	<i>19.9</i>	<i>50.1</i>	<i>8.1</i>

Notes: '% market transfers' shows the share of surviving land deeds which were obtained through a sale, rather than via a *merced* or *concesión* by the Cabildo or the Governor. '% Don' refers to the share of land deeds (regardless of how they were obtained) which were owned by a person with the honorific title of 'Don' or 'Doña.' *Solares* and *sitios* were located *intramuros* (i.e. within the citadel), the former being destined to carry housing; *chacras* were farmland plots usually facing a course of water; *estancias* were very large pastoral plots averaging 6,000 acres, and often limited by natural features (forests and courses of water).

Source: MVD, AGA, Reg. 90, Caja 20, Libro 4.

Land abundance shaped the material definition of property rights over livestock, the main form of capital in this agrarian economy. Unlike in many other rural societies, in the colonial River Plate animals belonging to different people were most often not separated by hedges or fences. While land titles were usually vague in defining plot boundaries and pastures remained unfenced, the colonial state kept a register of private cattle brands.³⁸ Every cattle-owner, large or small, household or corporation, could register their brand and when they sold pastoral land they often sold the brand with it, transferring the property rights not on cattle and horses standing on the estancia land, but on animals bearing the estancia brand. Animals belonging to different owners would often graze together, which required workers to periodically conduct a collective roundup and separation (*aparte*) of the herds, based on the brands stamped on their hides. This simple technology allowed livestock to be separated legally rather than physically, as befitted the abundance of grazing resources.³⁹ Open fields also allowed for the avoidance of the Malthusian checks on the cattle population on each individual estancia: if animals were too many, they could move in and out of

1986): 227; William B. Taylor, *Landlord and Peasant in Colonial Oaxaca* (Stanford, 1972): 214-20; David A. Brading, *Haciendas and Ranchos in the Mexican Bajío: León, 1700-1860* (Cambridge, 1978): 116-18.

³⁸ A sample of original records from the cattle brand registry can be found in MVD, ExMHN, Cajas cronológicas, Caja 6. I have used some of them as glyphs to mark the end of each chapter in this dissertation.

³⁹ William Cronon made a similar observation in the context of the American Great West in his *Nature's Metropolis: Chicago and the Great West* (New York, 1991): 221, fn. 52.

neighbouring land.⁴⁰ Unfenced pastures and branded animals were central to the late-colonial 'spatial code,' which would persist until the mid-nineteenth century. As we shall see, ranching techniques were attentive to those mechanisms and to the properties of cattle themselves: to borrow from a medieval historian, this frontier society was 'thinking with ecology' rather than following metropolitan rules and practices surrounding livestock farming.⁴¹

The openness of the agricultural frontier affected how colonial law surrounding inheritance and land rights were applied by colonial authorities, for whom local conditions usually prevailed over *de jure* principles.⁴² This conceptual independence from metropolitan practices was often explicitly defended in court: even if dividing land into smaller plots made sense in Spain, a Montevideo lawyer argued, 'applying this general rule to the distribution of land can only be sensible in a country where there are many working hands capable of taking advantage of such distribution; not in a new country, where local circumstances make such a system impracticable.'⁴³ Whereas in the rest of Spanish America, from Mexico to Chile, it was often necessary to resort to primogeniture entailment (*mayorazgo*) to avoid the pulverization of land holding resulting from the civil law principle of partible inheritance, in the River Plate the abundance of agricultural land made that legal device unnecessary, even in the context of rapid population growth in the late colonial period.⁴⁴

Therefore, in late-colonial Uruguay, parents sought, and obtained, grants of 'new' public land for their children, which encouraged a pattern of early marriage and high birth rates characteristic of a newly settled frontier ('newly settled' from the perspective of the settlers themselves, of course). This had important implications for the gender division of productive resources. It was not uncommon for parents to request land for their single daughters, as opposed to only for their sons, and more than 12% of all plots (*cuadras cuadradas*) near Montevideo and 9% of estancias were registered as owned *solely* by single women or widows

⁴⁰ For a reflection on Malthusian checks on herds in the context of open grazing lands, see Tim Ingold, *Hunters, Pastoralists, and Ranchers: Reindeer Economies and Their Transformations* (Cambridge, 1980): 201-07.

⁴¹ Jamie Kreiner, 'Pigs in the flesh and fisc: an early medieval ecology,' *Past & Present* 236, 1 (2017): 27.

⁴² On the 'legal origins' thesis and how local practices undermine it, see the discussion in Chapter 1. Cf., for a similar prevalence of local conditions over metropolitan rules in the Cape Colony where grants of pastoral land were also of about 6,000 acres, Christie Swanepoel and Johan Fourie, 'Why local context matters: property rights and debt trading in colonial South Africa,' *Studies in Economics and Econometrics* 42, 2 (2018).

⁴³ 'pero esta regla general aplicada al repartimiento de terrenos, solo puede tener lugar en un Pueblo donde haya muchas manos trabajadoras capaces de hacer valer en su utilidad las ventajas de aquella particion: no en un Pueblo naciente, y que por las circunstancias locales, hace impracticable aquel Systema.' Medrano on behalf of Durán to the Governor of Montevideo, 6 May 1805. Archivo de la Escribanía de Gobierno y Hacienda, AGN-MVD, Exp. 1804, No. 100, published in Pivel Devoto, *Colección*, 547-62.

⁴⁴ Magnus Mörner, 'Economic Factors and Stratification in Colonial Spanish America with Special Regard to Elites,' *HAHR* 63, 2 (1983): 348; Carlos A. Mayo, 'Landed but not powerful: the colonial estancieros of Buenos Aires (1750-1810),' *HAHR* 71, 4 (1991): 767.

registered as household heads between 1733 and 1807.⁴⁵ A similar pattern of female ownership could be found, according to Metcalf, further north, in another South American frontier controlled by a different crown: the parishes of Santana de Parnaíba, in São Paulo's hinterland.⁴⁶

These figures underestimate women's legal rights to land, because, under civil law, assets were jointly owned by a married couple. More importantly, women's material access to a plot of their own was more widespread than legal ownership. In this landscape of unenclosed agricultural land, rural people made their living in productive units of diverse sizes, which did not necessarily coincide with units of property, particularly in the case of large *estancias*.⁴⁷ Living within the Las Vacas *estancia*, for example, Francisca had effective control over her own plot and could sell its produce, even though she had no legal rights over the land. Small-scale peasant cultivation without formal titles was even more common in the extensive crown lands (*tierras realengas*) that occupied most of the landscape in the Banda Oriental. 'Squatting' in this way was not necessarily an act of rebellion: as the revolutionary policy in the 1810s would show, and as I demonstrate in Chapter 3, the peaceful continued cultivation of a plot was understood to be a legitimate form of obtaining and preserving property. Large cattle-owners did not always agree, however, and their continued and largely unsuccessful complaints to colonial authorities are the strongest evidence for how widespread and effective squatting was. Writing to the governor of Montevideo in 1804, one *estancia* owner (*hacendado*) claimed that 'the incessant work of raising and multiplying my cattle' produced 'indubitable rights' over extensive public land, and argued that his prosperity would be 'destroy(ed) and annihilate(d)' by 'an Indian named Juan', his wife, and six children who grew food and wheat on 'his' land.⁴⁸ The fact that *hacendados* kept complaining to the colonial government about people occupying their land, or public land they claimed as their own, suggests that they could not effectively exclude poor peasants from accessing it, even those who, like Juan, were not 'citizens' (*vecinos*) in the eyes of the colonial state.⁴⁹

⁴⁵ I have found 51 surviving records of new *estancia* grants in the Montevideo jurisdiction in the late-eighteenth century requested by parents on behalf of their children: in 11 cases the beneficiaries were female, in 18 cases they were male, and in 22 cases I could not identify their gender. MVD, AGA, Reg. 90, Caja 20, Libro 4.

⁴⁶ Alida C. Metcalf, 'Women and means: women and family property in colonial Brazil,' *Journal of Social History* 24, 2 (1990).

⁴⁷ María Inés Moraes, 'Las economías agrarias del litoral rioplatense en la segunda mitad del siglo XVIII: paisajes y desempeño' (PhD diss., Universidad Complutense de Madrid, 2012), 68.

⁴⁸ 'Estos derechos incontestables Señor Governador con el incesante trabajo de criar y aumentar mis ganados para conservar y sostener la crecida familia de siete hijos y mi Esposa pretenden destruir y aniquilar un Yndio llamado Juan que seha poblado dentro delos terrenos que poseo en las propias Aguadas de mis ganados con notable perjuicio de estos y de que precisamente ha de balerse echando mano para mantener la dilatada familia de una mujer y seis hijos à donde está agregado sin tener él ni ellos una sola cabeza; à mas de esto ciembra trigo en mis terrenos' MVD, AGA, Archivo de la Escribanía de Gobierno y Hacienda, Exp. 1804, No. 100, Manuel José Galup on behalf of Feliciano Correa to the Governor of Montevideo, 23 March 1804, printed in Pivel Devoto, *Colección*, 562-64.

⁴⁹ For a survey of land disputes between *hacendados* and peasant communities in the Banda Oriental, see Sala de Touron, de la Torre, and Rodríguez, *Evolución económica*, 32-43. On the meanings of *vecino* in Spanish America see Tamar Herzog, *Defining Nations: Immigrants and Citizens in Early Modern Spain and Spanish America* (New Haven, 2003): 43-63.

This scenario of comparatively widespread physical and institutional access to agricultural land had contradictory consequences for the autonomy of labour, as it strengthened the bargaining hand of free working people while at the same time creating incentives for coercion. Where household labour did not suffice and production was stifled by labour scarcity, ‘Nieboer conditions’⁵⁰ prevailed: there was for part of the year no wage level that suited both would-be employers and would-be employees, because the latter would prioritise, as the administrator of Estancia Las Vacas acknowledged, ‘looking after his milk cows, sowing and harvesting wheat (...) as it is natural that he should prefer to do.’⁵¹ For large-scale producers who had so many cattle that they needed many dependent workers, this posed a problem because it gave would-be employees a strong outside option and allowed them to command high wages. Surveying the Banda Oriental at the request of the crown, Félix de Azara found this was true of most common folk he met in the countryside: many of them were in his eyes ‘almost naked’ but, to his dismay, when he tried to hire them to look after his animals they replied ‘I am also looking for someone to serve me, would you like to do so?’⁵² Small-scale producers relied on non-dependent institutional arrangements for extra-familial labour, particularly on *arrimados* or *agregados* (‘attached’): individuals or families incorporated to the productive unit by their own free will, who were allowed to use the resources embedded in the farm (tools, buildings and work animals) and keep most of their produce as pay for their participation in the most labour-demanding tasks during the agricultural year.⁵³

However, this cannot be considered a classic Nieboer-Domar scenario because, as we have seen, the late-colonial ‘spatial code’ entailed both a relatively open access to farmland and extremely unequal ownership of cattle.⁵⁴ Both Nieboer and Domar thought abundant livestock could dilute the conditions for

⁵⁰ The Nieboer hypothesis, in Ervsey Domar’s version, suggests a trilemma between free peasants, free land, and a non-working landowning elite: two out of those three, but never all three, are to be found in historical agricultural systems. It has been written about by historians working in different contexts, especially in Africa but also in Asia and Latin America; see, for example, Gareth Austin, ‘Factor markets in Nieboer conditions: pre-colonial West Africa, c.1500–c.1900,’ *Continuity and Change* 24, 1 (2009); David Feeny, ‘The decline of property rights in man in Thailand, 1800–1913,’ *JEH* 49, 2 (1989); Johnhenry Gonzalez, *Maroon Nation: A History of Revolutionary Haiti* (New Haven, 2019): 19–22. The original formulations are H. J. Nieboer, *Slavery as an Industrial System* (The Hague, 1900) and Evsey D. Domar, ‘The causes of slavery or serfdom: a hypothesis,’ *JEH* 30, 1 (1970).

⁵¹ ‘en cuydar sus vacas lecheras, sembrar, y recojer su simentera, y cuidar de su mujer, e hijos, como era natural lo executase con preferencia’ BA, IX.6-8-1, f.500, ‘Pliego de prevenciones con treinta articulos para el gobierno del Administrador de la Estancia de las Bacas,’ ‘Otras prevenciones para el Gobierno de la Estancia,’ art. 19.

⁵² ‘hai en estos campos muchos hombres que absolutamente no quieren trabajar, ni servir por titulo ó precio alguno. Yo he contratado muchos casi desnudos, y cuando les he preguntado si querian servirme cuidando mis caballos, me han contestado con la mayor serenidad del mundo: “yo también busco quien quiera servirme, quiere V. hacerlo?”’ Azara, *Viajes*, 284.

⁵³ Garavaglia, *Les hommes*, 61–63.

⁵⁴ 170 records of household asset valuations survive from an extraordinary tax levied in 1751 in Montevideo: cattle account for a third of the wealth and their distribution was more unequal than that of any other asset, whereas agricultural land accounted for only 10% of total wealth. My calculations on the data from ‘El Cabildo al Gobernador

coercion: if large cattle-owners can benefit from economies of scale, then they would be able to use labour more productively, and workers would be better off selling their labour to them rather than being independent producers.⁵⁵ And indeed this occurred in the Banda Oriental, but only when it suited the agricultural calendar: scale economies were constrained to times of peak labour demand in ranching, which coincided with the downtimes of peasant grain agriculture. Sustaining production year-round with free workers alone was extremely costly for a commercial estancia, which made acquiring slaves economically beneficial. Discussing the relative profitability of slavery is usually very difficult for economic historians because, as Wright pointed out in relation to the US South, it is hard to find a context in which free and coerced labour performed 'the same tasks in the same place at the same time'.⁵⁶ Late-colonial Uruguay offers one of those rare occasions.

At Estancia Las Vacas the average monthly wage of a permanent free rural labourer (*peón*) was 7 pesos, whereas the provisioning of a slave with clothes and sundries cost under 2 pesos (food was provided to both free workers and slaves), to which we should add the initial cost of buying an enslaved person, which varied with age, skill, and health, but for young rural slaves in the region averaged 300 pesos.⁵⁷ To meaningfully compare these costs over several years we need to consider their present value: the sum which, invested at prevailing interest rates, would pay for the costs over a period of time.⁵⁸ The present value of hiring a ranch hand *throughout the year* (most of them worked in the estancia for only part of the agricultural calendar) for five consecutive years was 381 pesos, whereas the present value of buying and provisioning a slave for the same period was 404 pesos; by the sixth year, the present value of *peón* wages (446 pesos) was higher than the inventory value and provisioning of a slave (422 pesos). Therefore, investing in slaves for year-round ranching tasks made economic sense if they stayed in the estancia and remained healthy for six years or

de Montevideo, Tasación de 1751' published in Apolant, *Padrones*, using the decomposition technique of Robert I Lerman and Shlomo Yitzhaki, 'Income inequality effects by income source: a new approach and applications to the United States,' *The Review of Economics and Statistics* (1985). Details can be found in the Appendix.

⁵⁵ Nieboer thought that most pastoral societies proved that 'there is no great need for slave labour where subsistence depends on capital,' while Domar toyed with the idea that the expansion of sheep breeding could have helped spur the end of serfdom in England. Nieboer, *Slavery*, 292; Domar, 'Causes of slavery', 30.

⁵⁶ Gavin Wright, *Slavery and American Economic Development* (Baton Rouge, 2006): 24.

⁵⁷ *Peón* wages taken from BA, IX.6-8-1, ff.604, 'Plan que manifiesta los gastos ordinarios que se causaran anualmente en la Estancia de Las Vacas'. Supplies for slaves included, on a yearly basis, 14 pesos worth of clothing (two shirts, one poncho, a piece of cotton cloth, a pair of trousers, a jacket, and two blankets), a provision of Paraguayan *yerba mate* (6 pesos), tobacco (2.25 pesos), and salt (0.75 pesos). BA, IX.6-8-1, ff.687-694, 'Cuaderno de Vestuarios de Esclavos, raciones, y otros gastos peculiares a la Administracion de esta Estancia' (January 1794). Average slave price in the wider region from Carlos Newland and María José San Segundo, 'Human Capital and Other Determinants of the Price Life Cycle of a Slave: Peru and La Plata in the Eighteenth Century,' *JEH* 56, 3 (1996).

⁵⁸ I have taken as reference the average annual interest rate of the surviving records of 99 loans with recorded rates recorded in Montevideo between 1796 and 1810. MVD, AGA, 'Registro general de hipotecas', printed in Pivel Devoto, *Colección*, 1188-231. For a summary of the concept of present value and how to calculate it, see David G. Luenberger, *Investment Science* (Oxford, 1998): 18-21. For a similar calculation for the Buenos Aires countryside, see Amaral, 'Rural production', 271-73.

more. This alternative was even more profitable when slaves assumed managerial positions, substituting for even higher paid workers: the overseer's salary, before Patricio took over the position, was 12 pesos per month. If the present value method for comparing profitabilities can be accused of anachronism, systematic comparisons between free and coerced labour were certainly known to contemporaries. The notion that 'young slaves save *peones*' and that large estancias were 'stocked with Negros in order to save wages' appears repeatedly in sources from Estancia Las Vacas and the Banda Oriental at large.⁵⁹

There was, therefore, an economic rationale for labour coercion in some contexts, but that does not by itself explain how slavery came to be part of this rural economy. African slaves arrived in the region on an increasing scale in the late-eighteenth century through Luso-Brazilian supply networks and under the institutional framework of the Spanish colonial state. Slave imports, mostly illegal, had begun in 1587, almost as soon as Buenos Aires was re-founded, and flourished up to the early-seventeenth century, with at least 34,000 Africans landed.⁶⁰ Legal slave trading grew rapidly in the late-eighteenth century, now with Montevideo, the best natural harbour in the region, as its main port. More than 70,000 black slaves, from a wide variety of regions south of the Sahara (Angola in the case of Patricio's father) as well as from Brazil (Rio de Janeiro in the case of his mother) arrived to River Plate ports in the last 35 years of colonial rule.⁶¹ Besides providing coerced labour for their own cities and hinterlands, Buenos Aires and Montevideo served as Atlantic entrepôts for slave trading into the South American interior and Pacific, supplying Peru and Chile.⁶² Slavery on the shores of the Plate never reached an absolute scale comparable to the major plantation economies of the New World: Brazil, the circum-Caribbean, and the southern United States. But neither did European immigration before the late nineteenth century, which meant that, by 1810, 30% of the colonial population in the jurisdictions of Buenos Aires and Montevideo was enslaved, a proportion not dissimilar, for example, to that of the American Carolinas (32% according to the 1790 American census).⁶³ With the

⁵⁹ 'cuatro esclavos mozos que ahorran 4 peones' BA, IX.6-8-1, f.609, 'Relacion delos Esclavos de Ambos Sexos, que quedan existentes en la Estancia de las Bacas' by Don Francisco Cabrera, Hermano Mayor, 31 July 1791; 'las estancias grandes ... están surtidas de negros, por ahorrarse los conchabos' Agustín de la Rosa to the Viceroy Arredondo, 22 December 1794, published in Rodríguez Molas, *Historia social*, 527.

⁶⁰ Kara D. Schultz, "'The Kingdom of Angola is not Very Far from Here": The South Atlantic Slave Port of Buenos Aires, 1585-1640,' *Slavery & Abolition* 36, 3 (2015).

⁶¹ The names of Patricio's parents appear in the parish record of his marriage to Francisca; their origins were listed by the Jesuit inventories in 1774. CAR, 'Assiento de los Cassados en esta Parroquia de las Vivoras', f.379; BA, Colonia, Gobierno, Temporalidades, Leg. 6, 'Imbentario detodo lo que contiene la estancia de las Bacas en 12 de Diziembre de 1774', printed in Vadell, *Antecedentes*, 198. Slave trade figures are taken from Alex Borucki, 'The slave trade to the Río de la Plata, 1777-1812: Trans-imperial networks and Atlantic warfare,' *Colonial Latin American Review* 20, 1 (2011).

⁶² Jeremy Adelman, *Sovereignty and Revolution in the Iberian Atlantic* (Princeton, 2006): 63-64; Alex Borucki, David Eltis, and David Wheat, 'Atlantic History and the Slave Trade to Spanish America,' *AHR* 120, 2 (2015): 437. On urban slavery in late-colonial Montevideo and Buenos Aires see, respectively, Alex Borucki, *From Shipmates to Soldiers: Emerging Black Identities in the Río de la Plata* (Albuquerque, 2015): 25-56, and Lyman L. Johnson, 'Manumission in Colonial Buenos Aires, 1776-1810,' *HAHR* 59, 2 (1979).

⁶³ Borucki, 'Slave trade', 85; Johnson, *Workshop of Revolution*, 37; United States, *Return of the whole number of*

outbreak of revolution in 1810-1811, and through the years of civil war and political instability that followed, slaves actively sought new paths to freedom.⁶⁴ The institutional framework surrounding slavery changed as well: slave trading was legally banned by creole revolutionaries in Buenos Aires in 1813 and in the Banda Oriental in 1825, and slavery was abolished by the republics of Uruguay and Argentina in 1842 and 1853 respectively.⁶⁵ Chapter 3 will chart in detail the slow and unsteady path of abolition in rural Uruguay.

Labouring peasants and African slaves and their descendants formed the bases of a hybrid labour system which underpinned economic growth in the late-colonial River Plate. Larger estancias were more likely to have slaves, and estancias with more slaves also tended to have more landesque capital (holding pens, ditches, orchards) and other capital goods (carts and tools), as well as larger cattle herds, which accounted for the lion's share of rural wealth.⁶⁶ Judging from the value and composition of their assets, large *hacendados* in late-colonial Uruguay were cattl Lords first, labourlords second, and landlords only third.⁶⁷ This section has argued that factor ratios contribute to understand their economic incentives for acquiring slaves. Let us now explore how labour was organised and how the crop repertoire and the life cycle of cattle help explain how managerial authority was reconfigured to the extent that a slave overseer could decide which free workers to hire or dismiss.

3 Agro-ecology and farming systems

In Estancia Las Vacas, as in most of southern Uruguay, arable agriculture was practiced alongside ranching. Fine-textured, fertile, dark clay soils, and a warm temperate climate provided an excellent basis for grassland cover while at the same time allowing for a range of cereal, vegetable, and tree-crop agriculture.⁶⁸ A crop repertoire focused on grains and the unparalleled natural advantages for extensive ranching had three important consequences for relations of production and work routines. First, the seasonal complementarities

Persons within the several Districts of the United States (Philadelphia, 1793), 4.

⁶⁴ Ana Frega, "La Patria me hizo libre" Aproximación a la condición de los esclavos durante las guerras de independencia en la Banda Oriental, in *"Negros de la patria": los afrodescendientes en las luchas por la independencia en el antiguo Virreinato del Río de la Plata*, ed. Silvia C. Mallo and Ignacio Telesca (Buenos Aires, 2010).

⁶⁵ George Reid Andrews, *Afro-Latin America, 1800-2000* (Oxford, 2004): 57.

⁶⁶ See, for the Buenos Aires countryside, Garavaglia, *Les hommes*, 392; and for the Banda Oriental, Moraes, 'Economías agrarias', 184. For a discussion of the concept of 'landesque capital', see Widgren and Hakansson, 'Landesque Capital'.

⁶⁷ By comparison, planters in the American Antebellum South were, according to Gavin Wright, labourlords first and landlords second. Wright, *Slavery*, 67.

⁶⁸ Pellic vertisols are the predominant soil type; for an authoritative description see Paul Driessen and Jozef Deckers, *Lecture Notes on the Major Soils of the World* (Rome, 2001): 75-88. Uruguay and the Argentine littoral are located entirely within the Cfa group of climates according to the Köppen classification; see Markus Kottek, Jürgen Grieser, Christoph Beck, Bruno Rudolf, and Franz Rubel, 'World map of the Köppen-Geiger climate classification updated,' *Meteorologische Zeitschrift* 15, 3 (2006).

between the labour demands of ranching, which peaked during the branding of young animals in autumn and spring, and wheat agriculture, with its midsummer harvest, shaped the changing balance of free and unfree labour in large estancias. Second, a physical environment better suited for grain and livestock production rather than plantation crops encouraged the emergence of diversified farm routines, for peasant smallholders and dependent workers alike. Third, the long life-cycle of cattle and their affiliative behaviour favoured longer-term overseers and promoted independent decision-making on the part of foremen, who were looking after large herds separated by miles of unfenced grasslands. These three factors help explain the emergence of a tasking system of labour organization, in which working intensely was more common than working steadily, free workers often received instructions from slaves, and the autonomy of workers grew with the size of the herds.

Wheat was the main cash crop in Estancia Las Vacas as well as in the colony at large.⁶⁹ Dark-coloured soils in the southern Banda Oriental were generally fertile enough in the late colonial period that there was little need for manure, and wheat could be grown in plots of different sizes. Its cultivation cycle employed more workers than any other economic activity in the countryside during ploughing in early autumn, sowing in May or June, and, especially, harvesting in January.⁷⁰ During the harvest, rural labour was at its scarcest: smallholders had to prioritise their own farms, and there were many opportunities for high-wage, short-term employment in farms that could not rely solely on family labour. As a result, large estancias had to pay more for piecemeal or occasional work than usual: whereas monthly wages at Las Vacas were normally between 6 and 8 pesos (24 to 32 reales), in summer *daily* wages of 4 reales were paid to temporary workers.⁷¹ Slaves in this estancia made up the majority of the workforce during January and February, whereas in winter free workers outnumbered slaves.⁷² The hybrid labour system was, therefore, flexible enough to accommodate the seasonality of the region's main crop.

Conversely, demand for ranching work decreased in January, as high temperatures and the humid subtropical climate made slaughtering and skinning more difficult, resulting in a natural seasonal complementarity between wheat and livestock production.⁷³ The main event in the calendar of the livestock economy, and the financial year of Las Vacas and most estancias, took place in autumn and sometimes additionally in spring. The *yerra* (from the local pronunciation of *herrar*, to brand with hot iron) was a time of intense work, when cattlemen branded all the cattle born the previous year (usually about a third of the

⁶⁹ Garavaglia, *Economía*, 36; Brown, *Socioeconomic History*, 41-46.

⁷⁰ José M. Pérez Castellanos, *Observaciones sobre agricultura* (Montevideo, 1968 [1813]): 267-91.

⁷¹ 1 peso = 8 reales. BA, IX-37-5-4, Leg. 140, Exp.15, 'Libro de asientos de los individuos que disfrutaban salarios en esta estancia de Las Vacas perteneciente al año de 1796'.

⁷² BA, IX-37-5-4, 'Cuentas de la Estancia de las Vacas en la Banda Oriental' (1795-1799).

⁷³ Garavaglia, *Les hommes*, 233; Gelman, *Campeños*, 188.

total herd) and castrated young steers.⁷⁴ A team of twelve skilled ranch hands could brand and castrate 200 head of cattle per day.⁷⁵ Given the size of the herds at Las Vacas many additional workers had to be hired, most of them from the neighbouring estancias or villages. Periods of peak work often led to reconfigurations of authority in slave economies, as Morgan has noted in the case of whites assisting specialised black slaves during wheat harvesting in the Chesapeake.⁷⁶ In the Banda Oriental, where free workers could routinely find themselves supervised by slaves, the mechanics of the *yerra* made the black foremen's managerial authority particularly noticeable because many more ranch hands had to be directed: Patricio oversaw 35 additional free workers hired for these 'extraordinary tasks' during the autumn of 1795 alone.⁷⁷

In the late colonial period, population growth and an expanding export economy made raising tame cattle (*ganado de cuenta*) increasingly more important than hunting wild cattle (*ganado cimarrón*).⁷⁸ Extensive ranching became a year-long endeavour, involving the two contradictory phases of most forms of animal husbandry: nurturing life and ending it. Keeping herds healthy and tame required a daily task known as *parar rodeo*. This daily roundup of cattle in each *puesto* ensured that animals stayed *aquerenciados* (tame and at home in the area) and allowed workers to take stock, without dismounting, of the different groupings within a herd and identify missing animals. This deceptively simple method worked because it arose from a keen understanding of the psychology of cows. *Parar rodeo* benefitted from the persistency of the intraspecies social bonds cattle form, preserved by affiliative behaviour expressed through grooming and preferred grazing partnerships, as well as their tendencies to develop matriarchal family groups and the logics of dominance which make herds recognisable by their top-cow.⁷⁹ Moreover, individual cows and calves knew their *cuadrilla* (their small group within the herd) and their *querencia* (their 'home' pastures within the estancia) because of their well-developed ability to identify environmental cues and individually recognise up to 70 herdmates primarily through their coat markings (and, in the case of calves, through their mother's calls), as well as their excellent spatial memory.⁸⁰ Sharp travellers such as Diego de Alvear in 1783 or Charles Darwin in 1833 perceived how economic strategies in these open ranges depended on those

⁷⁴ Azara, *Memorias*, 8; Carlos A. Mayo, 'Estancia y peonaje en la región pampeana en la segunda mitad del siglo XVIII,' *Desarrollo Económico* 23, 92 (1984).

⁷⁵ Diego de Alvear, 'Diario de viaje en la Banda Oriental (1783),' in *Las visitas extranjeras*, ed. Luis Carlos Benvenuto (Montevideo, 1968): 346.

⁷⁶ Philip D. Morgan, *Slave Counterpoint: Black Culture in the Eighteenth-century Chesapeake and Lowcountry* (Chapel Hill, 1998): 173.

⁷⁷ BA, IX-37-5-4, Exp.15, 'Libro de asientos 1795.'

⁷⁸ Similar processes occurred elsewhere in Latin American frontiers, although the River Plate was 'the most dramatic example' of it: Silvio R. Duncan Baretta and John Markoff, 'Civilization and barbarism: cattle frontiers in Latin America,' *Comparative Studies in Society and History* 20, 4 (1978): 588. For a classic account of the transition in the Banda Oriental plains see Reyes Abadie, Bruschera, and Melogno, *Pradera*, 42-52.

⁷⁹ Clive Phillips, *Cattle Behaviour and Welfare* (Oxford, 2002): 84-122.

⁸⁰ Lori Marino and Kristin Allen, 'The psychology of cows,' *Animal Behavior and Cognition* 4, 4 (2017).

very traits.⁸¹

The life cycle of cattle and their behavioural patterns defined which forms of labour organization were more effective in two important ways. First, whereas the cycles of plantation crops can be as short as seven months (in the case of indigo) or at most as long as fourteen (for rice or some varieties of sugar cane), cattle need two years to reach adulthood and a cow will only start bearing calves when she is about 30 months old, with pregnancy lasting over nine. Therefore, while in some plantation economies overseers were often employed for only one or two years,⁸² in the River Plate there was an incentive for large estancias to keep the same managers in place for longer, so that they could see the production cycle through and keep track of herd numbers. This in-built preference for long-term foremen and overseers in ranching, in the context of a high turnover of free workers, helps to explain why slaves were often chosen for such positions. Therefore, the Uruguayan case offers support for Gavin Wright's argument that the key advantage of slavery over free labour, for slave-owners of course, was not about productivity, but about the stability guaranteed by owning workers.⁸³

Second, because cattle, unlike crops, move about, to be effective at keeping track of large herds slaves had to be in the saddle, which had unintended consequences for their autonomy, both in terms of everyday mobility and in strengthening the threat of fleeing as a bargaining tool.⁸⁴ Pablo, one of the foremen at Estancia Las Vacas, would often ride to Colonia to meet 'his young woman'. As a result, he was one of the slaves who at times 'for their love neglect their duties for four or even six days', as one official reported in 1794.⁸⁵ That was of course a problem, he explained, but one difficult to solve: forbidding Pablo to see his girlfriend in Colonia could prompt him to flee the estancia. Increased mobility also mattered greatly for the autonomy of free workers. The abundance of horses, which Darwin thought 'the destruction of all industry' when he visited the region in the 1830s, allowed them to move between distant farms and ranches and take up short-term employment.⁸⁶

The end of the life cycle of cattle also took place in the estancia, and it was a necessary stage in the production of its top commodity. Cowhides accounted for the majority of Las Vacas's sales and were the key

⁸¹ de Alvear, 'Diario', 344-45; Charles Darwin, *Journal of Researches into the Geology and Natural History of the Various Countries visited by HMS Beagle* (Cambridge, 2009[1840]): 170.

⁸² Morgan, *Slave Counterpoint*, 326.

⁸³ Wright, *Slavery*, 25.

⁸⁴ Two slaves fled from Las Vacas in 1797 and 1799: Gelman, *Campesinos*, 189. On fleeing in the context of other tactics of resistance to slavery in Latin America, see Germán Carrera Damas, 'Huida y enfrentamiento,' in *África en América Latina*, ed. Manuel Moreno Fraginals (Mexico City, 1977).

⁸⁵ 'con sus amores descuidan su obligacion por quatro y seis dias' BA, IX-6-8-1, f.515, Agustín de la Cuesta to Don Martín José de Altolaquirre, Estancia Las Vacas, 16 June 1794.

⁸⁶ Darwin, *Journal*, 182.

regional export staple in the late-colonial period.⁸⁷ In the late-eighteenth century the landscape resulting from extensive ranching was often described as primitive and unseemly ('the rude beginnings of agriculture,' as Adam Smith put it), in contrast with the precise lines of well-dressed cropland, or the neat grid of a plantation.⁸⁸ Despite the apparent disorder of an estancia's fields and the blood and mess that came with slaughtering large animals, the production of cowhides and other cattle by-products could be straightforwardly divided into codified tasks, not unlike more orderly forms of contemporary commercial agriculture, such as tidal rice cultivation.⁸⁹ After raising the cattle, the production process in a Banda Oriental estancia such as Las Vacas was organised into sequential activities (slaughtering, skinning, salting, drying), and resulted in easily countable commodities (dried hides, salted tongues, strips of beef jerky) that could then be tallied periodically. At the same time, distances and animal populations were simply too large to enforce a constant supervision of workers without incurring great costs. If we think in terms of Stefano Fenoaltea's model of slave economies, this is a case where the cheapness of agricultural land and the long production process characteristic of pre-industrial ranching meant that cows were worth far more than the land they grazed on.⁹⁰ This placed an emphasis on care rather than physical effort, in the context of a very extensive use of land. Therefore, tasking (where workers complete set assignments in a self-regulated way) rather than ganging (where they stay in the field for set periods under constant oversight) was the most cost-effective way of organizing labour for ranching in this frontier environment.⁹¹

The instructions Patricio received evidence how much 'acquired knowledge and practice in the tasks of the countryside' was needed to manage the tasking system for slaughtering and skinning.⁹² Each *puesto* had to produce a minimum of three full cowhides (dried and clean, observing the 'appropriate quality') per man per week, which the foremen had to control, stockpile, and take to the administrator once per month. Each

⁸⁷ Brown, *Socioeconomic History*, 41-46; Moraes, 'Tendencias'.

⁸⁸ Adam Smith, *An Inquiry Into the Nature and Causes of the Wealth of Nations* (Chicago, 1976 [1776]): 209.

⁸⁹ Joyce E. Chaplin, 'Tidal rice cultivation and the problem of slavery in South Carolina and Georgia, 1760-1815,' *William and Mary Quarterly* 49, 1 (1992): 56.

⁹⁰ Stefano Fenoaltea, 'Slavery and Supervision in Comparative Perspective: A Model,' *JEH* 44, 3 (1984). Surviving tax records for Montevideo in 1751 and a 'census' of household heads from 1757 give some indication of asset valuations: the mean value of an estancia was under 500 pesos, equivalent to the value of 250 cattle, much less than would be required to stock a ranch that size. 'El Cabildo al Gobernador de Montevideo, Tasación de 1751,' published in Apolant, *Padrones*; BA, Biblioteca Nacional, Legajo 190, Inventario 016557, 'Estado que manifiesta los vecinos y almas que hay en esta ciudad, y las haciendas que poseen. Montevideo, Octubre 1º de 1757'. Similar ratios were shown by probate records studied by Moraes, 'Economías agrarias', 299, 345.

⁹¹ By contrast, in Cuban sugar plantations during the same period, slaves toiled from sunup to sundown, working 'all the biologically available time': Manuel Moreno Fragnals, *La historia como arma y otros estudios sobre esclavos, ingenios y plantaciones* (Barcelona, 1983): 43. Ganging prevailed in tobacco plantations in the Chesapeake as well, although with less regimentation: Morgan, *Slave Counterpoint*, 189.

⁹² 'se espera que con el conocimiento que tiene adquirido, y la practica en las faenas de campo pondrá el mayor empeño en aumentar los rodeos de la estancia' BA, IX.6-8-1, f.1021, 'Documentos correspondientes a la Visita del mes de Mayo de 1792'; 'Instruccion que deberá observar el esclavo Patricio Capataz mayor de la Estancia de las Bacas, y sus Puestos'.

slave foreman was also responsible for enforcing these standards on free ranch hands and, if they failed to deliver the quantity or quality of hides, had to notify the administrator of the estancia so the worker would have a real and a half docked (about 10 per cent of their weekly pay) per missing hide.⁹³ Patricio, overseeing them all, had to ride to each *puesto* at least once a week and assess their work and the composition of the herds. As herds grew, each *puesto* became more and more a ranch in itself, and the autonomy of its foreman grew accordingly. Workers, free and unfree alike, were judged by their weekly results. As long as assignments were completed, they could manage their time and the length of their working day as they saw fit. Therefore, it would seem that the fact that ranch hands and foremen (slave and free) preferred to work intensely rather than steadily does not stem, as Salvatore and Brown suggested, from 'the ingrained gaucho habits of refusing to obey orders or to follow work routines.'⁹⁴ Such a pattern is found in many other pre-industrial, rural contexts, and allowed workers to make the most of a system of labour organization that rewarded, and indeed required, autonomous time management.⁹⁵ In their own time, slaves and *peones* working in the *puestos* could produce for the market or receive payment for additional tasks, such as hunting wild dogs, through which they improved their material lives, buying clothes and tools.⁹⁶

Finally, even if productive units in the River Plate littoral effectively practiced mixed farming, the gender division of labour was noticeable between tillage and pastoral agriculture. Ranching in Estancia Las Vacas was almost exclusively done by young adult men, enslaved and free: the foremen were in their late thirties and most of the ranch hands in their early twenties, with newly bought male slaves starting work in their mid-teens.⁹⁷ But much of the material life of the estancia was sustained by women and older men, who tended vegetable plots with garlic, onions, maize, and squash, as well as pens with pigs and chickens. Whereas slave cattlemen had opportunities to make money, six older slave men aged between 50 and 65 who had to 'sow all kinds of seeds' for the estancia's own consumption were specially banned from 'working on their own account.'⁹⁸ They also had to tend to the orchard, which in 1774 occupied twelve acres and

⁹³ BA, IX.6-8-1, 'Instruccion para el Ramo de Cueros de la Estancia de las Bacas,' art. 2.

⁹⁴ Salvatore and Brown, 'Trade and Proletarianization,' 456.

⁹⁵ Cf. Eugene D. Genovese, *Roll, Jordan, Roll: The World the Slaves Made* (New York, 1974): 309.

⁹⁶ In 1792 the slaves' possessions included Catalan cloth jackets, linen shirts, different kinds of hats, ponchos, and saddles. When receiving payment for hunting wild dogs in 1794, foreman Pablo obtained a new knife and a silk kerchief, in addition to cash. BA, IX.6-8-1, ff.687-690, 'Cuaderno de Vestuarios de Esclabos, raciones, y otros gastos peculiares a la Administracion de esta Estancia y demas,' f.699, 'Razon de las colas de perro que se han pagado á los que los han muerto, con árreglo á la Ynstruccion.'

⁹⁷ BA, IX.6-8-1, f.609.

⁹⁸ 'haciendoles que siembren en comun toda clase de semillas para el consumo de la casa,' y no podran alegar motivo de escases en ningun ramo, para pretender que se les deje trabajar de su cuenta' BA, IX-6-8-1, ff.496, 'Pliego de prevenciones con treinta articulos para el gobierno del Administrador de la Estancia de las Bacas,' 'Ocupaciones de los esclavos y su nueva colocacion.'

included one thousand peach trees, two hundred quince trees, and one hundred and fifty apple trees.⁹⁹ Three slave women of a similar age had to work in the main house, 'cooking, kneading, making candles, choosing wheat, and washing.'¹⁰⁰ All these activities left them little time for autonomous production. Their masters were also clear in that these slaves were not allowed to raise small stock or keep plots of their own, or indeed 'anything else of which they may recognise as their property'.¹⁰¹ Thus, while farm routines were in general diversified in this mixed grain-livestock agriculture, they differed along gender and age lines, as did the scope for the slaves' relatively autonomous 'internal economy'.

4 Spaces and struggles for autonomy

Even for slave cattlemen and their families there were limits to independent agriculture. While most slaves in Estancia Las Vacas were allowed to tend to their own plots and to keep poultry, as was 'the common practice in the estates on this bank [of the River Plate],'¹⁰² there was one major absence in their crop repertoire: wheat. There were, from the masters' point of view, good reasons for this. Harvesting their own grain would reduce slaves' working hours in summer, precisely when free labour became more expensive, and distinguishing between the estancia's own grain and that belonging to other production units within it (such as slaves' family plots) could prove problematic when bringing the harvest to market.¹⁰³ Francisca Ximénez, Patricio's wife, was a free mulatto woman (*parda libre*) but she was married to a slave, so the ban reached her as well, curtailing her ability to engage in cash cropping. Or at least it did until she challenged the rule in June 1792, when she asked the Hermandad to sow wheat in her own plot, to complement her other crops and vegetables. The administrator of the estancia (the top authority there, and the only one above her husband), a white creole named Don Florencio García, communicated Francisca's request to the Hermandad in Buenos Aires, who saw no alternative but to grant her permission to grow wheat 'in order to keep her husband happy, as it is very important to keep him in this hacienda.'¹⁰⁴

It is unclear how Francisca phrased her request, or how she gathered the administrator's support to get

⁹⁹ BA, Colonia, Gobierno, Temporalidades, Leg. 6. 'Inventario de todo lo que contiene la estancia de las Bacas en 12 de Diciembre de 1774,' printed in Vadell, *Antecedentes*, 196.

¹⁰⁰ 'han de cocinar, amasar, hacer belas, escojer trigo, labar y demas labores que les destine el Administrador' BA, IX-6-8-1, ff.497, 'Pliego de prevenciones con treinta articulos para el gobierno del Administrador de la Estancia de las Bacas,' 'Ocupaciones de los esclavos y su nueva colocacion.'

¹⁰¹ BA, IX-6-8-1, ff.495, *ibid.*

¹⁰² 'a los demas negros de esa Hazda. puede vm. permitir tengan sus huertecillas como se acostumbra en concederles esta gracia en las Hazdas. de esta vanda, e igualmte. que crien aves.' BA, IX-6-8-1, 'Carta al administrador,' 28 June 1792, cited in Gelman, *Campesinos*, 218-42.

¹⁰³ Thomas Jefferson came to a similar conclusion regarding tobacco in his Chesapeake estate: Morgan, *Slave Counterpoint*, 360.

¹⁰⁴ 'para tener contento a su marido Patricio que tanto impta. conservallo en esta Hazda,' Gelman, *Campesinos*, 219.

the Hermandad to reverse its rule on wheat farming. Being married to the overseer certainly contributed to her status and gave her some leverage. But her experience in dealing with the institutional framework of the colonial countryside must have played a part as well, and it preceded her life with Patricio: she had been married before to Gabriel Carmona, a free *vecino* of the parish.¹⁰⁵ Wheat, in any case, afforded her new opportunities to make money. A small-scale sphere of exchange existed in parallel to the much better recorded long-distance trade.¹⁰⁶ By the time of her death six years later Francisca had saved enough silver to leave 16 pesos (about ten weeks' full wages of a ranch hand) as alms for the parish and to pay for a very expensive funeral (*entierro maior*) which included a sung mass and was usually reserved for merchants or well-to-do farmers.¹⁰⁷

Being married to Francisca was crucial for Patricio's status too, both an expression of and a boon to his autonomy. Marrying free women was perhaps the most striking way in which a slave's managerial authority in the economic arena translated to social mobility, guaranteeing his children's freedom.¹⁰⁸ And because a free woman's time was her own, it also expanded the limits of their 'internal economy': while the husband received the allowance of tobacco, salt, *yerba mate*, and beef, the wife could tend to her plot to both complement their diet and make money. The husband could also contribute to this domestic economy once ranching tasks were completed.¹⁰⁹ As a result of these compound strategies, slave foremen in Las Vacas 'are well dressed, buy horses of 4 pesos and more, and spend money with their women.'¹¹⁰ Every slave foreman was either married to a free woman or was recorded in 1791 as 'wanting to marry'.¹¹¹ Patricio did so twice: a few years after Francisca Ximénez's death, he married another free *vecina*.¹¹²

¹⁰⁵ CAR, 'Assiento de los Cassados en esta Parroquia de las Vivoras', f.427.

¹⁰⁶ The idea of a face-to-face frontier exchange economy was developed for the case of colonial Louisiana by Daniel H. Usner, 'The Frontier Exchange Economy of the Lower Mississippi Valley in the Eighteenth Century,' *William and Mary Quarterly* (1987). Historians have been so far unable to establish the scale of a similar economy in the River Plate frontier, although they have found its traces: Garavaglia, 'Paisaje', 126.

¹⁰⁷ CAR, 'Assiento de los Difuntos en esta Parroquia de las Vivoras desde el año de 1771', f.322. On the social hierarchy of funerals in the late-colonial River Plate, see Facundo Roca, 'Prácticas funerarias y lugares de entierro en el Buenos Aires tardo-colonial: un estudio sobre la parroquia de Nuestra Señora de Montserrat,' *Andes* 30, 2 (2019).

¹⁰⁸ Mixed marriages played a similar role in the Sao Paulo rural frontier, see Alida C. Metcalf, *Family and Frontier in Colonial Brazil: Santana de Parnaíba, 1580-1822* (Berkeley, 1992): 167-68.

¹⁰⁹ For an insightful analysis of the interactions between the tasking system and the slaves' domestic economy, see Philip D. Morgan, 'Work and Culture: The Task System and the World of Lowcountry Blacks, 1700 to 1880,' *William and Mary Quarterly* 39 (1982).

¹¹⁰ 'estos individuos andan bien tratados de ropa tienen dinero compran caballos a quatro y mas pesos, haben gastos con las mansebas' BA, IX-6-8-1, f.515, Agustín de la Cuesta to Don Martín José de Altolaguirre, Estancia Las Vacas, 16 June 1794, 'Sobre el casamiento del Esclavo Domingo Belen.'

¹¹¹ 'quiere casarse' BA, IX.6-8-1, f.609, 'Relacion delos Esclavos de Ambos Sexos, que quedan existentes en la Estancia de las Bacas.'

¹¹² Patricio and his second wife, Francisca Godoy, went on to have five free children: Martín (b.1806), Teodoro

Interracial marriages were not unthinkable in the multi-ethnic frontier society of the late colonial Banda Oriental. A diversity of mostly young people, creole and European as well as indigenous, mulatto, and black, made their living on these unfenced prairies. The social and economic gaps between them were of course very large, but not comparable to the racial binary separating most whites and most blacks in plantation societies in Brazil, the Caribbean, or the American South.¹¹³ Still, such unions ran against some conventions and were tolerated rather than encouraged by slaveowners. In 1794, Domingo, a slave from West Central Africa in his early forties who was one of the most experienced foremen in Estancia Las Vacas, had to pressure an Hermandad official into acknowledging his right to marry a free woman.¹¹⁴ The official refused at first ‘telling him that it was forbidden to grant these permissions for slaves to marry free people’ and that he could leave if he had a prospective new master that bought him from the estancia. To this Domingo replied ‘that he had no buyer nor wanted to leave this House or have another master’ and offered ‘other reflections touching his inner voice (*fuero interno*), so I decided to consult the father chaplain, who assured me that in good conscience he [Domingo] could not be challenged, more so when he was of use to this House.’¹¹⁵ The records of the nearby parish church of Vïboras prove Domingo’s success: in the spring he married María Pascuala Gaete, a free mulatto woman.¹¹⁶

It was not unheard of for free labourers to work alongside slaves in other slave societies in the Americas, or even for slaves to exert some degree of authority over agricultural production.¹¹⁷ Especially in contexts of tasking systems of labour organization, such as the South Carolina lowcountry, slave drivers could influence planters’ decisions regarding hiring free workers and even, as in one case cited by Chaplin, informally conduct ‘the business of the plantation.’¹¹⁸ What makes the case of late-colonial Uruguay particular in the New World context is the extent that this managerial authority could reach. In the previous sections I have argued that this space of possibility for slave agency was shaped by environmental factors, including those

(1810), Miguel (1813), Cipriano (1817), and Tiburcia (1818). CAR, ‘Libro Parroquial del Partido de Vïvoras que contiene las partidas Baptismales’, f.81, 124-5, 157, 198-9, 212.

¹¹³ Morgan, *Slave Counterpoint*, 17.

¹¹⁴ Domingo was already in the estancia by the time the Jesuits left. They recorded him as a 17-year-old native of Angola in 1767. Colonial officials recorded him again in 1774. Leonhardt, ‘Documentos’, 533; Vadell, *Antecedentes*, 197.

¹¹⁵ ‘le serre la puerta diciendole hera proibido conseder estas licencias para que se pudieran casar los esclavos con libres, pero que respecto aquel tenia quien lo comprara le daria papel de benta, a esto me repuso que el no tenia comprador ni queria salir de esta casa ni otro amo ... y otras reflexiones que tocan al fuero interno, por lo que resolví consultar el asunto con el padre capellan quien me aseguro que en conciencia no se le podia pruebar y mas quando el hera de utilidad para esta casa’ BA, IX-6-8-1, f.515, Agustín de la Cuesta to Don Martín José de Altolaquirre, Estancia Las Vacas, June 16th 1794.

¹¹⁶ CAR, ‘Assiento de los Cassados en esta Parroquia de las Vïvoras’, f.427.

¹¹⁷ Both mixed marriages and hybrid labour systems were not rare in south-eastern Brazil: Eliana R. Goldschmidt, *Casamentos mistos: liberdade e escravidão em São Paulo colonial* (Sao Paulo, 2004); Herbert S. Klein and Francisco Vidal Luna, *Slavery in Brazil* (Cambridge, 2010): 126.

¹¹⁸ Joyce E. Chaplin, *An Anxious Pursuit: Agricultural Innovation and Modernity in the Lower South, 1730-1815* (Chapel Hill, 1993): 268.

derived directly from physical geography and animal behaviour, and those resulting from human intervention and agricultural choices. The story of Patricio's rise to the position of senior foreman reveals once more the interactions between those factors while foregrounding the exercise of human agency. A version of this tale has been told before by Carlos Mayo in his 'imprecise and necessarily incomplete biography' of Patricio.¹¹⁹ Working across archives in Uruguay and Argentina, I have uncovered some crucial details Mayo could not find about Patricio's family and work life, which I will use to bring to life the argument about the possibilities opened up by the natural environment not only for production techniques but also for the autonomy of workers.

In 1791, when still one of the eight foremen in charge of a single *puesto*, Patricio was already seen as a man 'of much intelligence for the countryside.'¹²⁰ He had broken his collar bone and looked older than he was (only 32 he was described as being 'about 40') but was at the height of his powers as a cattleman.¹²¹ In June that year, the herds in Patricio's care were singled out as still providing good bulls and oxen in the context of a crisis brought about by what the administrator García considered terrible management by Don Agustín Rodríguez Villegas, a white Chilean who had been the overseer for about eight months.¹²² Rodríguez Villegas had pulled most workers from the *puestos* to build a new central corral, without first 'going over the estancia and surveying the cattle herds or the droves of horses' García wrote to his superiors in Buenos Aires.¹²³ The very scarce labour resources were misallocated to the point where for months not a single horse had been tamed. As winter approached there were not enough horses or oxen ready to replace the ones that had died or been injured or sold, leaving some workers without the two biological machines which empowered their labour. Wild dogs were not being kept in check and threatened calves, while their mothers had become more difficult to handle as they were not being rounded up with enough regularity. The delicate ecological balances which allowed a few dozen workers to control thousands of animals were on the brink, and, as a result, so were profits, both present and future.

García's report was prompted by a narrowly averted catastrophe. One day in early July that year Rodríguez Villegas tried to use the new large corral to hold more than five hundred cattle, which resulted in a stampede. As hundreds of cows broke the pens and fled towards the Las Vacas stream, Rodríguez Villegas

¹¹⁹ 'imprecisa y necesariamente incompleta biografía' Carlos A. Mayo, 'Patricio de Belén: nada menos que un capataz,' *HAHR* 77, 4 (1997).

¹²⁰ 'de mucha inteligencia para el campo' BA, IX.6-8-1, f.609, 'Relacion delos Esclavos de Ambos Sexos, que quedan existentes en la Estancia de las Bacas.'

¹²¹ 'su edad como de 40 años' BA, IX.6-8-1, f.609; Vadell, *Antecedentes*, 132. Mayo thought that Patricio's age could not be established with any certainty, but cross-referencing other two sources—Jesuit records that make him 8 years old in 1767 and a colonial official's report that makes him 16 in 1774—I believe it can. Mayo, 'Patricio,' 598; Leonhardt, 'Documentos,' 532-34; Vadell, *Antecedentes*, 198.

¹²² BA, IX.6-8-1, f.524. Florencio García, Administrador, to Francisco de Cabrera, Hermano Mayor, 3 July 1791.

¹²³ 'Luego que llego a esta estancia que fue el 20 de Noviembre sin bisitarla ni sin conoser los rodeos, caballadas, ni tomar mas providencias de su llegada emprendio una manga para cojer ganado' BA, IX.6-8-1, f.535.

rode after them, trying to lead a group of ranch hands to round them up, but ‘because he had no experience in this, he commanded without knowledge, and with a crowd of people he could not catch any cattle,’ García vividly reported, ‘until the Negro Patricio took charge of the rodeo.’¹²⁴ Patricio had outmanoeuvred Rodríguez Villegas on the open range in front of the administrator and other workers, and saved hundreds of pesos worth of livestock. Notable though this was, over the following days Patricio would prove he was not just a man of action who knew cows and horses: he also understood people’s motivations and could work through words as well as deeds.

Three days after García wrote his scathing report, Don Francisco de Cabrera, the chief officer of the Hermandad, arrived from Buenos Aires. A high-ranking Spanish bureaucrat, Cabrera was well-connected to the political and economic elites in the viceregal capital.¹²⁵ He gathered all eight foremen in charge of *puestos*, who ratified García’s dramatic account, adding that cows kept trying to escape from the new corral Rodríguez Villegas had spent so much time and resources building. ‘It would have been much better,’ Cabrera wrote, ‘if instead they [the cows] had been included into one of the [existing] herds, as the Foreman Patricio told him many times, heralding what would happen.’ Furthermore, not enough cattle had been branded, even though Rodríguez Villegas arrived in November when there was still time to do so before the hot summer months, several foremen agreed. The pens he tried to use for holding cattle during branding were too short and weak, Patricio added, as ‘he had told him many times.’ Cabrera went on to ask the foremen whether they knew about Rodríguez Villegas paying extra wages to some free men, including a friend of his from Mendoza who was supposed to manage the orchard but apparently did no work. All foremen said they could not confirm this, except ‘the Foreman Patricio who said that he does know it to be true’ and gave further details on two workers to whom Rodríguez Villegas gave extra money. Three times the pattern recurred: Cabrera asked questions, the foremen replied, and then Patricio provided more damning detail, which Cabrera penned in his elegant calligraphy.¹²⁶

Surrounded and supported by his peers (three of whom he had grown up with), Patricio seized the unique opportunity of this interview with Cabrera to play on the contrast between the white creole who ‘commanded without knowledge’ and the black slave ‘of much intelligence in the countryside.’ While Patricio

¹²⁴ ‘y como no tenia practica para esto mandaba sin conocimiento, y con una multitud de jente no cojia ganado hasta que el negro Patricio dispuso la correria.’ *ibid.*

¹²⁵ Susan M. Socolow, *The Bureaucrats of Buenos Aires, 1769-1810: Amor al Real Servicio* (Durham, N.C., 1987): 50, 149, 225.

¹²⁶ ‘hubiera sido mucho mejor que, desde su principio, las hubiera agregado a alguno de los rodeos, como el Capataz Patricio se lo dijo muchas veces anunciando lo que abia de suceder’; ‘que la manga no sirbio de nada, porque no pudo encerrar en ella el ganado las dos veces que lo intentó; y en esta pregunta añadió el Esclabo Patricio, que él le dijo muchas veces desde que la empezó, que no abia de lograr su intento, porque no era posible que el ganado entrase, y que si alguno entrava, abia de saltar, acosado, como sucedio, porque el cerco que formava la ramazon, era mui vajo y sin resistencia’; ‘Y haviendoles preguntado sobre los capitulos 11 y 12 respondieron los siete capataces, que aellos no les consta nada de lo que contienen; y el Capataz Patricio dijo que a él si le consta’ BA, IX.6-8-1, ff.540-543, ‘Expediente obrado con motivo de la Falta de Bueyes y Cavallos en la Estancia de las Bacas y ausencia que hizo de ella su Capataz mayor Don Joseph Agustin Ramires Villegas’ by Francisco de Cabrera, 31 July 1791 (the interviews took place on 12 July).

was skilfully navigating his social world, the natural one played into his hand as well: calving season was approaching, and spring would be the last chance to brand and castrate cattle before the wheat harvest pushed wages up. As Cabrera boarded the ferry for Buenos Aires he must have known a new senior foreman needed to be appointed in Estancia Las Vacas, and soon. Patricio must have known it too, because he found someone to write letters for him. More than letters, proposals: he was ready to make his case and the Hermandad was ready to listen.

Patricio made no vague promises: if appointed *capataz general*, between August and March he would deliver one hundred fully trained horses, another two hundred tamed colts, and one hundred tame oxen. Without hiring any new workers he would also during those months brand all the animals grazing on the *puestos* of Miguelete and Las Armas: 2,144 cattle in total, he estimated, who were at risk of being claimed by neighbouring landowners. Concerning calving numbers ‘he cannot yet give his word, but will do so later on, when, after distributing the herds among all the *puestos*, he has enough knowledge of the state of the livestock in each of them.’ He asked for three things in payment, and they were all about autonomy. First, he was to be allowed ‘to rule and direct all the tasks and works of the countryside, choose and fire ranch hands, without anyone interfering with his decisions, because otherwise he will not be able to fulfil what he promises.’ Second, once he had fulfilled his plan, he would be allowed to buy his freedom for the sum of three hundred pesos. Third, he would then continue to work in the estancia, but as a free man earning a wage suitable to his position.¹²⁷ Francisca’s hand was perhaps also behind this proposal—on the backs of her successful ploy to grow wheat two months before—as she had managed to raise the money needed for Patricio’s proposed manumission.¹²⁸

The proposal came at the right time and with the necessary support. Florencio García, the estancia administrator, vouched for Patricio with his silver as well as his word: he would not take home his wages until Patricio’s seven-month plan was completed.¹²⁹ In a pre-industrial frontier economy, reciprocity and regard meant a great deal.¹³⁰ Manuel de Lavardén, an estancia owner who knew García well, wrote that he was ‘a man of little brilliance, without much knowledge of the countryside, but he overcomes this by asking questions to everyone, and thanks to the devotion that the slaves feel for him, amongst whom Patricio and

¹²⁷ ‘aunque por ahora no se determina a fijar cantidad, por no aventurar su palabra, pero ofrece hacerlo mas adelante quando repitiendo los rodeos en todos los puestos, tomo conocimiento del estado actual en que se halla el ganado en cada uno’; ‘se le degen gobernar y dirigir todas las faenas y labores de campo, escoger y despedir peones, sin que nadie se enmeta a alterar sus disposiciones, porque de otro modo no podrá cumplir lo que promete’ BA, IX.6-8-1, Capataz y Patricio. Oficios y Propuestas.

¹²⁸ Mayo, ‘Patricio’, 601.

¹²⁹ BA, IX.6-8-1, Capataz y Patricio. Oficios y Propuestas.

¹³⁰ Reciprocity continues to matter for economic strategies in our own societies as well; see Avner Offer, ‘Between the gift and the market: the economy of regard,’ *EcHR* 50, 3 (1997).

Basilio stand out.¹³¹ Perhaps advised by García, who had met the Hermandad leaders in Buenos Aires in June, Patricio put forth a second proposal, offering an alternative way to earn his freedom: he would remain a slave for three years, in each of them producing the results he had promised in his first proposal, but then we would be set free without paying any compensation.¹³² In the meeting of its Junta on 13 September 1791, just in time before spring, the Hermandad accepted the revised proposal and decided Patricio Belén would be the new senior foreman. Eight months later, the administrator was instructed to ensure that when dealing with Patricio ‘the foremen, peons, and all other employees are appropriately subordinated to him so that he can perform the duties and assignments which have been entrusted to him.’¹³³

Even if factor ratios gave labour a stronger hand than in other pre-industrial rural societies, bold strategies were needed to make the most of the limited agency the frontier environment bestowed on the enslaved and their families. Francisca, Domingo, and Patricio used what leverage they had to expertly bargain for a significant measure, if not always of freedom, then at least of economic and social autonomy. It seems that, for some reason unknown to us, Patricio did not achieve his freedom through his ranching expertise as he had intended: when his second son was christened in 1810 the priest still recorded him—but not his son or wife—as a slave.¹³⁴ By then, rebellion was stirring on the grasslands. One of the learned advisors of the creole revolutionary leadership, father Dámaso Antonio Larrañaga, rode through the then deserted lands of Estancia Las Vacas three years later and reflected on the destructive effects of warfare on rural resources.¹³⁵ The revolution’s program did not contemplate abolishing slavery, but the long cycle of revolutionary violence did create a new context for it, which is studied in the next chapter.

5 Conclusion

Slavery can be distinguished from other forms of labour exploitation because enslaved workers are coerced into being ‘outsiders’ whose social world is purposefully severed. For rural slaves in the Americas, each local environment, through its impact on the economic organization of land and labour, shaped the conditions in which they struggled to forge new social ties. The case of late-colonial Uruguay, where male slaves often supervised white creoles and married free women, demonstrates how the ecological context of a frontier region underpinned the profitability of slavery, while at the same time making it possible for slaves to attain

¹³¹ ‘sus luces no son aventajadas, ni tiene mayor conocimiento del campo, pero lo suple con preguntar a todos y con la idolatría que con él tienen los esclavos, entre quienes sobresalen Patricio y Basilio.’ Manuel de Lavardén, 25 August 1794, cited in Vadell, *Antecedentes*, 134.

¹³² BA, IX.6-8-1, Capataz y Patricio. Oficios y Propuestas, ‘2a Propuesta del esclavo Patricio.’

¹³³ ‘que todos los capataces, peones, y demas empleados le tengan la devida subordinacion para que asi pueda desempeñar las obligaciones y encargos que se le han confiado.’ BA, IX.6-8-1, f.1028, ‘Instruccion que forma Don Felipe de la Rosa y deberá observar el actual Administrador de la Estancia de las Bacas’, 26 May 1792.

¹³⁴ CAR, ‘Libro Parroquial del Partido de Vivoras que contiene las partidas Baptismales’, ff.124-5.

¹³⁵ Dámaso Antonio Larrañaga, *Diario del viaje de Montevideo a Paysandú* (Montevideo, 2016 [1815]): 76.

positions of managerial authority and build new relationships. In comparison with the major New World slave economies, in the unfenced River Plate countryside a largely self-regulated tasking system emerged, as masters acknowledged that experienced slaves were in a better position than seasonally-employed creoles to manage production, given the long life-cycle of cattle and their associative behavior in the open ranges. By fusing grassland ecology with the economics of pre-industrial ranching, this chapter argued animals, climate, and topography can (and did) give rural slaves some bargaining strength, as well as reinforce an unequal gender division of labour and distribution of resources.

Historians of Latin America have long argued that the late-colonial period witnessed a change in the economic centre of gravity in the territories of the Viceroyalty of the River Plate, from the mines of the Bolivian *altiplano* to the grassy plains of the Platine littoral.¹³⁶ Buenos Aires and Montevideo, the southernmost port cities in the Atlantic, were growing fast in the last three decades of colonial rule, their populations rising and their economies expanding thanks to the long-distance trade of livestock by-products.¹³⁷ Exploiting the ecological bounty of this frontier required labour for seasonal work as well as for the year-round tasks that domestication implies, as an ongoing process involving persistent interaction between animals and humans.¹³⁸ Because agricultural land was available to most free people, there was an incentive for large producers to rely partially on coerced labour for such tasks. The production techniques best suited to these factor ratios (abundant land, scarce labour, and scarce capital other than livestock) required somewhat autonomous riders to herd and slaughter the fabulously abundant cattle who shaped the environment and, through their biological alchemy, turned almost worthless grass to valuable leather, that multi-purpose commodity of the Atlantic world.

A detailed analysis of the physical landscape as well as the social transformation of it, through crop choices and domesticated animals, contributed to explain not only why this particular labour system existed, but also why it was effective, contrary to the conventional wisdom that slaves would be unable to efficiently oversee free workers.¹³⁹ But the 'spatial code' which emerged in response to the local environment, from land tenure to farming techniques, extended its influence beyond the economics of agriculture itself, shaping a wider set of social relations which were traversed by gender. While female voices appear only occasionally in the manuscripts and women were under-represented among farm-owners, they were but by no means absent, as joint or even as sole proprietors. Widowhood was not the only path towards exclusively female farm-ownership in this frontier, as parents lobbied for new land grants for single daughters as well as sons, and women also participated in their own right in the land market, which was mostly limited to well-placed farmland. Among slave households, while all slaves, by definition, saw their autonomy greatly curtailed, the

¹³⁶ Halperin Donghi, *Revolución*.

¹³⁷ Moraes, 'Tendencias.'

¹³⁸ Edmund Russell, 'Coevolutionary History,' *AHR* 119, 5 (2014): 1519.

¹³⁹ 'As the most permanent and dependent of all workers, the slaves served frequently as supervisors of the gauchos (how effective could this have been?)' Salvatore and Brown, 'Trade and Proletarianization,' 455.

scope for an ‘internal economy’ differed greatly along gender (and age) lines, in favour of young adult men. And yet some women within slave households, such as Francisca, managed to engage in market-oriented agriculture on their own behalf.

The late-colonial Banda Oriental might have been a ‘freer’ world of rural slavery by the standards of New World plantations, but it was far from a world of free labour, certainly in Marx’s notion of the concept. Most free rural workers were not landless proletarians, but peasants who entered temporary relations of dependence; they were not ‘freed from, unencumbered by’ property in or access to productive resources, notably agricultural land as well as work animals. And rural slaves were, of course, not free from coercion, as they formed ‘part of the means of production themselves.’¹⁴⁰ Seen within this dissertation’s long-term story of economic resources and activities in rural Uruguay, the ‘spatial code’ this chapter has described reveals how the colonial origins of the agricultural export economy were tied to the political allocation of agricultural land and the existence of markets in labour and in workers themselves. What prevented agrarian capitalism from developing in late-colonial Uruguay was not the ‘pre-capitalist’ and ‘rustic’ mentalities of rural workers, but a set of relations with the land that allowed peasants to remain to a large extent independent producers, and thereby encouraged large landowners to rely partially on the enslaved labour of Africans and their descendants.



¹⁴⁰ Karl Marx, *Capital*, vol. I (London, 1976): 874.

chapter three

‘Lost Decades’ and Where to Find Them: Early Uruguay, c.1820-1870

‘Fifty more years of caudillos and chaos.’¹ What could such a period possibly have to offer to a historian of long-term rural development? The post-independence economic record of Latin American countries is now conventionally seen by global economic historians as a harsh mirror for other regions liberated from European colonial rule: ‘conflict, violence, and instability’ leading to an ‘abysmal’ growth performance—‘lost decades indeed.’² Can these decades be found? And, if so, where should we go looking?

A large body of previously unexamined or under-explored primary sources from early post-colonial Uruguay seems a good place to start. Of course, for an earlier generation of historical and social science scholarship in Uruguay and elsewhere in Latin America, these decades were never lost to begin with. They were rather understood as crucial times of state-building and capital accumulation (to different extents in different countries) which laid the groundwork for either ‘the nation’, in liberal narratives, or a transition to peripheral agrarian capitalism, in Marxist mode.³ This chapter takes these older perspectives seriously and reframes them to interrogate the current ‘lost decades’ orthodoxy, using some of the methodological tools of the new economic history. The focus is on explaining two crucial economic transformations that took place during the five decades following the end of colonial rule, and without which modern Uruguay would be unimaginable. The first one was the slow and unsteady process of emancipation from slavery, which, despite having received so far little attention from economic historians, brought about a fundamental shift in the status of many in the agricultural workforce and changed the way in which labour could be mobilised in the rural economy. The second one, faster and better documented, saw sheep-farming redefine the

¹ That is the summary of Uruguayan early post-independence decades emerging from the hugely influential, particularly among neo-institutionalist economic historians, Miguel Angel Centeno, *Blood and Debt: War and the Nation-State in Latin America* (Pennsylvania, 2002): 54.

² Bates, Coatsworth, and Williamson, ‘Lost Decades’, 925.

³ Classic works encompassing the whole region are Cardoso and Pérez-Brignoli, *Historia económica* and Furtado, *Formação Econômica*. Seminal examples from the 1940s and 1950s for the Uruguayan case are, for a liberal and a Marxist interpretation respectively, Juan E. Pivel Devoto and Alcira Ranieri, *Historia de la República Oriental del Uruguay (1830-1930)* (Montevideo, 1956); Vivián Trías, *Los caudillos, las clases sociales y el imperio* (Montevideo, 1938). Uruguayan economic historians writing in the 1960s and 1970s were influenced by both, as well as, methodologically, by the *Annales* school.

economic uses of agricultural land in a process dubbed by Uruguay's most influential historians as quite simply 'the most radical transformation' in the country's rural history.⁴

The next section reviews the 'lost decades' thesis, considers its genealogy, and critiques the standard of its evidence as well as its usefulness as a heuristic device for economic historians of Latin America. The second section traces the course of abolition in rural Uruguay from the start of the independence revolution in 1811 until the end of the 'great civil war' in 1851. It relies on new evidence from census enumerators' books to demonstrate the extent and characteristics of rural slavery in the aftermath of Uruguay's 1830 constitution, and tries to shed light on the diversity of paths towards independent livelihoods. The third section is devoted to the growth and transformations in livestock agriculture between 1850 and 1870; in particular, it explores Uruguay's 'sheep revolution' in relation to two influential theoretical approaches which have been invoked to explain export-led economic development in the global periphery: 'modernization theory' and 'vent-for-surplus'. The conclusion considers the implications of early Uruguay's two major economic and social transformations for the 'lost decades' thesis, and invites reflection upon the causal connections between them.

1 From the 'long wait' to the 'lost decades'

The prevailing view global economic historians have of early-independent Latin America is one of unfulfilled promise, of 'decades of economic stagnation rooted in the dilemmas of the colonial society.'⁵ This rhymes with enduring tropes about the region and seems to give them a historical genealogy and a material basis: following independence, the inequalities of Iberian colonial society coalesced into Latin America's tendency to perpetual political unrest, underneath which the fundamentals of its economic backwardness stood still. For a particularly striking and influential example of this narrative in the comparative literature, here is David Landes:

Independence slipped in—a surprise to unformed, inchoate entities that had no aim but to change masters. This kind of anarchic negativism invited macho warlordism (*caudillismo*). No wonder the history of Latin America in the nineteenth century was a penny-dreadful of conspiracies, cabals, coups and countercoups—with all that these entailed in insecurity, bad government, corruption, and economic retardation. Can any society long live in such an atmosphere? Or get anything done on a serious, continuing basis? ⁶

⁴ 'Posiblemente no hubo en toda nuestra historia rural una transformación más radical.' Barrán and Nahum, *Agricultura*, 178.

⁵ Allen, *Global Economic History*, 84.

⁶ Landes, *Wealth and Poverty*, 313.

In Latin Americanist scholarship, the origins of this interpretation—which showed much more nuance than Landes’s at times essentializing account—can be traced back to Tulio Halperin Donghi’s classic *Historia contemporánea de América Latina* (1969), perhaps the most reprinted and widely read Spanish-language general history of the region. The third chapter, on the decades following independence, was entitled ‘A long wait’ and first characterised the period as one of ‘stability in poverty.’⁷ Halperin’s erudition led him to acknowledge variation within this general pattern and to offer a more careful chronology, which circumscribed Latin America’s time in the waiting room of economic development to 1850.⁸ Like the economic historians who would later revisit his argument, Halperin also pointed to the lack of growth in export values as the crucial piece of evidence. The idea of a protracted and generalised economic crisis following independence reached an even broader audience through Bulmer-Thomas’s *Economic History*, which, like Landes, did not cite Halperin, but shared his pessimism as well as his emphasis on the export economy.⁹ Among specialists, Coatsworth took the argument one step further, claiming that the early-independent decades were the crucial period in the emergence of Latin America’s long-term backwardness (relative to the United States or the West more generally).¹⁰

In the twenty-first century, the ‘long wait’ has found new life and gained centre ground in the global economic history debate under a new name: the ‘lost decades.’ The crucial reference is a 2007 article by Bates, Coatsworth, and Williamson (henceforth BCW) in which they compare Latin America’s 1820-1870 performance with Africa’s since 1960, arguing that both historical settings can be defined as ‘lost decades’ for economic development under the shadow of political instability and conflict following independence.¹¹ With its newfound global audience, this latest version of the thesis has invited renewed criticism by economic and social historians of Latin America, on at least two fronts. First, Llopis and Marichal questioned the very idea of stagnation or retardation in this period, as not even the most pessimistic estimates place Latin American growth rates below the world average: this was, in their view, at most a time of ‘unexceptional growth’ that only looks catastrophic if compared with the globally-leading growth rates of the nineteenth-century United States.¹² Second, Gelman argued that the diversity of trajectories in the aftermath of independence cannot be easily pieced together into a coherent picture and certainly not one of

⁷ ‘Una larga espera,’ ‘una estabilidad en la penuria,’ Tulio Halperin Donghi, *Historia contemporánea de América latina* (Madrid, 1969): 134-206; 158.

⁸ I am paraphrasing Dipesh Chakrabarty’s ‘waiting room of history’ in his *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton, N.J., 2000): 8.

⁹ ‘The great expectations formed at the time of independence had not been fulfilled (...) For most Latin Americans the major consolation was that things could only improve.’ Bulmer-Thomas, *Economic History*, 45.

¹⁰ Coatsworth, ‘Trajectories.’

¹¹ Bates, Coatsworth, and Williamson, ‘Lost Decades.’ A somewhat similar view, although in comparison with North America rather than Africa, can be found in North, Summerhill, and Weingast, ‘Order.’

¹² Enrique Llopis and Carlos Marichal, ‘Introducción,’ in *Latinoamérica y España, 1800-1850: un crecimiento económico nada excepcional*, ed. Enrique Llopis and Carlos Marichal (México, 2009).

‘post-colonial crisis.’¹³ It should be said that Halperin himself was not oblivious to very large variations across Latin America, and his original formulation of the thesis considered how some of the fringe areas of the colonial period (Argentina, Cuba, Uruguay, Venezuela) experienced a much faster recovery after independence than the former economic core (Bolivia, Mexico, Peru).¹⁴ But there remains a difference between acknowledging diversity within a clearly defined general pattern and suggesting, like Gelman does, that the degree of variation is so large that we cannot meaningfully speak of a generally shared path of economic development in the aftermath of independence.

Despite these criticisms, the ‘lost decades’ thesis remains the conventional wisdom in comparative and global economic history on early-independent Latin America, and BCW’s articulation of it is now the main way for non-specialists into the debate.¹⁵ Given how thought-provoking their contribution is and how influential it has been in consolidating (or from the point of view of some Latin Americanists, reviving) the ‘long wait’ narrative, BCW’s description of economic stagnation during this period and their causal explanation of it deserve further scrutiny.

While I am extremely sympathetic to efforts to bring Latin America’s and Africa’s economic pasts into dialogue with one another, diachronic comparisons such as the one proposed by BCW are difficult to pursue systematically given how utterly different the historical contexts are. As Bértola and Ocampo argued, it makes much more sense to compare nineteenth-century Latin America with other post-colonial societies at the time than with late-twentieth century Africa.¹⁶ More to the point, BCW are trying to explain something we are not even sure happened, or at any rate have been so far unable to empirically prove: the ‘abysmal’ economic performance of the whole of Latin America during the five decades following independence.¹⁷ As proof of Latin America’s post-colonial failures, BCW relied on the guesstimates of per capita incomes from the Maddison database, as they stood at the time they wrote their article.¹⁸ As Prados de la Escosura convincingly showed, these were in general very problematic for the period before 1870, and an attempt at

¹³ Gelman, ‘Senderos’; Gelman, ‘Crisis postcolonial’.

¹⁴ Halperin Donghi, *Historia contemporánea*, 158-61. Cuba was of course not yet independent in this period; on the links between export-led growth and independence in the island, see Pedro Fraile, Richard Salvucci, and Linda Salvucci, ‘El caso cubano: exportación e independencia,’ in *La independencia americana: consecuencias económicas*, ed. Samuel Amaral and Leandro Prados de la Escosura (Madrid, 1993).

¹⁵ The thesis is espoused not only by Bulmer-Thomas’s classic economic history, but also by Bértola and Ocampo, *Economic Development*, and the relevant chapter of the *Cambridge History of Latin America*, written by Halperin himself: Tulio Halperin Donghi, ‘Economy and society in post-independence Spanish America,’ in *The Cambridge History of Latin America*, ed. Leslie Bethell (Cambridge, 1984). The exception in the textbook landscape is a chapter in the *Cambridge Economic History of Latin America*, which takes a more nuanced view: Leandro Prados de la Escosura, ‘The economic consequences of independence in Latin America,’ in *The Cambridge Economic History of Latin America. Volume II: The Long Twentieth Century*, ed. Victor Bulmer-Thomas, John H. Coatsworth, and Roberto Cortés Conde (Cambridge, 2006).

¹⁶ Bértola and Ocampo, *Economic Development*, 55.

¹⁷ Bates, Coatsworth, and Williamson, ‘Lost Decades’, 925.

¹⁸ Angus Maddison, *The World Economy: A Millennial Perspective* (Paris, 2001).

improving the quality of the figures brought the yearly growth of Latin American per capita GDP from BCW's rate of 'about zero' to over 0.5.¹⁹ Similarly, on the other side of BCW's comparison (and of the South Atlantic), the reliability of the PPP-adjusted per capita income figures for late-twentieth and even early-twenty-first century Africa has also been severely criticised.²⁰

Moreover, Prados questioned the standard use in the literature of the United States as the default yardstick for measuring Latin American mid-nineteenth century performance, and pointed out how difficult it is to chart a single Latin American path out of independence, owing to very large variations within the region: if we trust the growth data, Uruguayan economic growth kept pace with the United States between 1820-1870, while Mexico fell dramatically behind. Again, the emphasis on regional variation is far from new in efforts to place Latin America in a global and comparative economic history context. In the very first volume of the *Annales* in 1929, Lucien Febvre emphasised how different 'Latin Americas' took centre stage across the centuries; two decades later, their special issue on the sub-continent was entitled 'Across the Latin Americas.'²¹ The question now, in my view, is whether historical national accounts are a good vantage point from which to assess regional diversity following independence, ascertain its unifying features, and draw comparisons with other global experiences of economic development in the nineteenth century.

While I acknowledge that Prados's GDP per capita figures are an improvement over the ones used by BCW, and as a result have replaced them in the latest edition of the Maddison database, I still do not think we should have this debate in the Kuznetian arena.²² Unless or until new archival troves are patiently mined, or already exploited sources are given new meaning, the data are simply not there to reconstruct per capita GDPs and estimate rates of economic growth for the vast majority of Latin American countries before c.1870. To turn to our case, which has one of the best sets of historical economic data for the late-nineteenth century, Uruguay's per capita GDP in the five decades following 1820 is proxied, in the most recent Maddison database, by a backwards projection of Bértola's 1870 estimate (which is based on actual output data) adjusted on the basis of the rate of growth implicit in patchy export data from a few Argentine

¹⁹ Bates, Coatsworth, and Williamson, 'Lost Decades', 925; Prados de la Escosura, 'Lost Decades?', 300.

²⁰ Morten Jerven, *Poor Numbers: How We Are Misled by African Development Statistics and What to Do about It* (Ithaca, 2013).

²¹ 'A travers les Amériques latines', see Lucien Febvre, 'Amérique du Sud: un champ privilégié d'études,' *Annales d'histoire économique et sociale* 1, 2 (1929): 259-60; Lucien Febvre, 'Introduction: l'Amérique du Sud devant l'Histoire,' *Annales d'histoire économique et sociale* 3, 4 (1948).

²² Cf. for a rather parallel argument in the Great Divergence debate: Kent Deng and Patrick O'Brien, 'China's GDP Per Capita from the Han Dynasty to Communist Times,' *World Economics Journal* 17, 2 (2016). 'Kuznetian' refers to Simon Kuznets, regarded as the founder of an empirical tradition centred around national income accounting, although he was much more aware of the limits of those analytical tools than some of his followers. See Robert William Fogel, Enid M. Fogel, Mark Guglielmo, and Nathaniel Grotte, *Political arithmetic: Simon Kuznets and the empirical tradition in economics* (Chicago, 2013); Simon Kuznets, *Modern economic growth: rate, structure, and spread* (New Haven, 1966).

provinces.²³ My unsuccessful efforts to improve upon those figures for the case of Uruguay in the early- and mid-nineteenth century led me to the reluctant conclusion that the ‘lost decades’ thesis cannot be upheld or falsified with macroeconomic aggregates because the existing sources—of a lower volume and poorer quality than those of either the late-colonial or late-nineteenth century periods—have so far closed that methodological avenue.²⁴

Even if, for the sake of argument, we were to take the income guesstimates as reliable evidence for ‘abysmal growth’ for the first five decades of independent Latin America, there would still be a problem of causation in BCW’s thesis. The only empirical basis the authors offer on the causal relationship between political instability and lack of economic growth in mid-nineteenth century Latin America comes from an unpublished manuscript which applies a neoclassical economic model of household savings and consumption to estimate the effects of political instability on growth (via discouraging investment) in post-independence Mexico.²⁵ In that study, Ponzio proxies the dependent variable, GDP growth, with fiscal revenue data from the central government.²⁶ If the very idea that the state was weak is a starting point of the analysis, and civil and international wars fought in domestic territory are bound to make tax collection more difficult, then how can we trust the size of the state’s tax income as a reliable indicator of the performance of the economy? Economic and social historians of Latin America are in general sceptical of using tax data to estimate the size of the economy, because most economic activity went untaxed, a problem compounded precisely by state weakness, reflected in, and perpetuated by, the lack of reliable tax collection systems in the nineteenth and in many cases well into the twentieth century.²⁷ To put it in econometric terms, there is an

²³ Bolt et al., ‘Rebasing “Maddison”’, based on Prados’s figures. While Prados is right that ‘it does not seem far fetched to assume that Uruguay’s behaviour was rather similar to that on the Argentine side of the River Plate’ the problem remains that the Argentine data refer exclusively to exports, which leave aside most of the economy. Prados de la Escosura, ‘Lost Decades?’, 299. For Bértola’s reliable GDP estimates, which sensibly start in 1870 and remain the standard reference, see Bértola, *PBI de Uruguay*.

²⁴ Patchy data on exports, imports, and government revenue is not enough to produce reasonable GDP estimates either from the supply-side (adding up everything produced in the economy) or the demand-side (adding up all kinds of income in the economy). Indirect methods of estimating agricultural output from demand are impracticable because of the paucity of data on wages and prices, while lack of data on urbanization provides little indirect evidence of the non-agricultural output. For a leading example of how the indirect method can, in other contexts, produce useful estimates given a wide range of available sources, see Paolo Malanima, ‘The long decline of a leading economy: GDP in central and northern Italy, 1300–1913’, *European Review of Economic History* 15, 2 (2011).

²⁵ The main finding of the paper is that ‘political instability is responsible for 50 to 100 per cent of the reduction of the growth rate during the four or five ‘lost decades’ after independence.’ Carlos A Ponzio, ‘Looking at the dark side of things: Political instability and economic growth in post-independence Mexico’, (Mexico City, 2005), 30.

²⁶ For an earlier, and in my view more insightful, discussion of the interplay between political instability and economic development in Mexico, see Donald F Stevens, ‘Economic fluctuations and political instability in early republican Mexico’, *The Journal of Interdisciplinary History* 16, 4 (1986).

²⁷ This does not mean that eighteenth- or nineteenth-century Latin American tax data should be entirely disregarded, far from it. It can be, for example, very effective at giving us a sense of relative prices or of the performance of the state (rather than that of the economy); see Grafe and Irigoien, ‘Stakeholder empire’, 612.

unresolved confounding factor problem in Ponzio's analysis: the dependent variable (growth of tax revenue) is endogenous to state capacity (a variable not controlled for), which is itself directly related to political instability, that is, the independent variable. Unsurprisingly, then, one can find a strong negative relationship between the central government's fiscal income and political instability, but that is far from proving that the latter caused an 'abysmal' performance of the economy as a whole; an economy which was, in Mexico, Uruguay and elsewhere in Latin America, overwhelmingly rural, informal, and beyond the reach of taxation. As Sánchez Santiró has shown relying on a much broader range of evidence, up until the 1850s Mexico in particular experienced significant growth, spurred by market integration and the reorganization of production and trade following the recovery from the independence war, all of which is simply not captured by looking at fiscal revenue data alone.²⁸

'Lost decades' is a catchy but misleading name for fifty years of Latin American economic history; the original formulation—the 'long wait'—was somewhat teleological but had the merit of confining itself to fewer than thirty. The seminal paper which most recently popularised the return of the thesis is based on inadequate evidence to describe an alleged 'abysmal growth' record and assumes an arrow of causation (from political instability to economic stagnation) it should instead endeavour to test. Even if the economic hopes surrounding the independence revolutions were not fulfilled in the short term, these cannot be called 'lost decades' unless by that one means 'lost to the national accounts framework.' But it is the framework that does not work with the sources available, not the Latin American economies themselves that stood still. To prove that point in a specific context, the next sections look at the sources which do exist for the case of Uruguay, and rely on them to describe and explain two momentous changes in the rural economy.

Uruguay is a small case, but if the 'lost decades' thesis was to find conclusive evidence anywhere, it would be here. The regionally-leading pace of the late-colonial economic expansion (c.1780-1810) and of export-led growth under the First Globalization (c.1880-1913), and the political turbulence in between, should make the case for 'lost time' easy to make in Uruguay. Political historians have noted how representative the volatility of the country's mid-nineteenth century power struggles were of the region as a whole: in the *Cambridge History of Latin America*, Lynch described nineteenth-century Uruguay as 'an hacienda economy writ large' where 'it made sense for the state to be weaker than its most powerful subjects,' a description later applied by Centeno to Latin America as a whole.²⁹ The next sections focus on the two crucial transformations in Uruguay's mid-nineteenth century rural economy, stressing their different paces and periods: the slow and unsteady demise of slavery throughout five decades, and the later changes in land uses and values brought about by the emergence and consolidation of export-oriented sheep-farming.

²⁸ Ernest Sánchez Santiró, 'El desempeño de la economía mexicana tras la independencia, 1821-1870: nuevas evidencias e interpretaciones,' in *Latinoamérica y España, 1800-1850: un crecimiento económico nada excepcional*, ed. Enrique Llopis and Carlos Marichal (México, 2009).

²⁹ Centeno, *Blood and Debt*, 160; John Lynch, 'The River Plate Republics from Independence to the Paraguayan War,' in *The Cambridge History of Latin America*, ed. Leslie Bethell (Cambridge, 1984): 663.

2 Slow and unsteady: the course of abolition in rural Uruguay, 1811-1851

In Uruguayan schoolyards there are three flags, each representing a phase of the independence revolution(s). All three had a discourse substantially built around emancipation, but none of them abolished slavery. The first phase, the war led by Artigas against Spain (1811-1816) and Portugal (1816-1820), started as a rural uprising against the demand for land titles by the colonial government in Montevideo. Even at its most radical, when it attempted to grant access to land and cattle brands to farmers of all races in 1815, the revolution still upheld rural slavery: free blacks were encouraged to become smallholders, but enslaved blacks were to continue being enslaved, and no path for emancipation was charted. The second phase, the skirmish war against Portuguese-cum-Brazilian occupation (1821-1825), ended in a declaration of independence that proclaimed the principle of free birth, but not the freedom of existing slaves. The last phase, a series of diplomatic and military struggles involving Argentina, Brazil, Britain, and the 'Uruguayan'³⁰ revolutionaries (1825-1830), ended in Uruguay's first constitution, which, like most Latin American constitutions at the time, abolished international slave trading but not slavery or even domestic slave trading.³¹ This section tries to make economic sense of that political history (why did revolutionary leaders consistently decide not to abolish slavery?) and explains how rural slavery was slowly eroded throughout the decades following independence, not least by the ploughs and swords of slaves and former slaves themselves.

2.1. The revolution and rural slavery

While they shared a chronology and some objectives, the Spanish American revolutions were diverse in their social basis of support and political strategies.³² In the case of the Banda Oriental, unlike across the River Plate in Buenos Aires, the revolution started as an uprising in the countryside and it remained a rural-based movement throughout, with Montevideo persisting for years as the last stronghold of Spanish power in the region.³³ As a result, the revolutionary program was to a large extent a compromise between the

³⁰ Most people did not call themselves 'Uruguayans' (*uruguayas, uruguayos*) in the nineteenth century, even after the creation of the republic of that name; their preferred demonym remained '*orientales*' (i.e. from the eastern bank of the Uruguay river); see Ana Frega, 'Uruguayos y orientales: itinerario de una síntesis compleja,' in *Crear la nación: los nombres de los países de América Latina*, ed. Juan Carlos Chiaramonte, Carlos Marichal, and Aimer Granados (Buenos Aires, 2008). For convenience, here I use 'Uruguayan' or 'Afro-Uruguayan' to refer to people who most likely called themselves '*orientales*'.

³¹ More precisely, it only prohibited importing slaves (*introducción de esclavos*), so buying and selling slaves within Uruguay remained entirely legal even after the 1830 constitution.

³² For the classic overview see John Lynch, *The Spanish American Revolutions, 1808-1826* (London, 1973). For the opposite, *dependentista* argument that the independence revolutions in fact shared a political programme and that the plurality of independent republics that emerged were a symbol of the defeat rather than the success of that revolutionary project, see Jorge Abelardo Ramos, *Historia de la nación latinoamericana* (Buenos Aires, 1968).

³³ The three landmark studies about the agrarian roots of the revolutionary movement in what would become Uruguay and its political implications are Pivel Devoto, *Raíces coloniales*; Lucía Sala de Touron, Nelson de la Torre, and

diverse interest groups of a multi-ethnic rural frontier society, with a significant degree of economic differentiation between peasants, free labourers, slaves, and large *hacendados* (cattle-owners). Let us briefly consider how revolutionary violence and revolutionary policy affected slaves, slave-owners, and the character of rural slavery in Uruguay.

As we saw in the previous chapter, livestock and slaves were, in that order, the main forms of wealth in the late-colonial countryside. A decade of revolutionary and counter-revolutionary violence, following the first major defeat of the Spanish army at Las Piedras in 1811, did much more to destroy wealth in ownership of animals than in ownership of people. One surviving survey of 244 estancias across Paysandú, at a time where that province occupied all the northern half of Uruguay, provides a glimpse of the effects of war on rural assets by 1823.³⁴ From a total of almost 650,000 cattle in 1811, the estancias recorded in the survey had now fewer than 190,000. While we do not know how many slaves lived there in 1811, by 1823 they still represented almost 40% of extra-familial workers, and estancias with more slaves tended to have more cattle as well, as they had done under Spanish rule.³⁵ That same year in Cerro Largo, another large pastoral hinterland, a survey of all districts reported an average of about 3.5 slaves per household, with over a third of the adult population being slaves.³⁶ Baptism records from the largest church in that province studied by Palermo suggest that, while at the height of the first revolutionary cycle in 1815-16 enslaved children represented only 18% of baptisms, their share rose to almost 40% by 1820, which led him to the conclusion that some slaves hid their children in the estancias where they worked, in the ultimately false hope that slavery would be abolished by creole revolutionaries.³⁷ While the power of large *hacendados* as cattle-owners had been shaken by the years of war against Spain and Portugal, their control over coerced labour seemed relatively secure.

Julio C. Rodríguez, *La revolución agraria artiguista (1815-1816)* (Montevideo, 1969), and José Pedro Barrán and Benjamín Nahum, *Bases económicas de la revolución artiguista* (Montevideo, 1972). For a review of the classic literature from an economic history perspective, see María Inés Moraes, 'La historiografía de Pivel Devoto sobre el agro colonial en la Banda Oriental: un estudio de "Raíces coloniales de la revolución oriental de 1811"', *Boletín de Historia Económica* 2, 3 (2004). The seminal English-language history of the revolution and its rurality is John Street, *Artigas and the Emancipation of Uruguay* (Cambridge, 1959). An insightful and recent political history is Ana Frega, *Pueblos y soberanía en la revolución artiguista: la región de Santo Domingo Soriano desde fines de la colonia a la ocupación portuguesa* (Montevideo, 2007).

³⁴ For a recent overview of slavery in northern Uruguay in the early-nineteenth century, see Eduardo R Palermo, *Tierra esclavizada: el norte uruguayo en la primera mitad del siglo XIX* (Durazno, 2013).

³⁵ Author's calculations on the basis of MVD, AGA, Libro 277, Reg 162, 'Padrón que manifiesta la fuerza de individuos y haciendas segun sus clases que a continuacion se expresan.'

³⁶ Author's calculations on the basis of 'Relevamiento de don Manuel Rollano, 1823' cited in José Apolinario Pérez, 'De los indios a los doctores,' *Los Departamentos Cerro Largo*, 18 (1970): 7.

³⁷ Eduardo R Palermo, 'Los afro-fronterizos del norte uruguayo en la formación del Estado Oriental, 1810-1835,' in *"Negros de la patria": los afrodescendientes en las luchas por la independencia en el antiguo Virreinato del Río de la Plata*, ed. Silvia C. Mallo and Ignacio Telesca (Buenos Aires, 2010): 204.

Not all historians agree on the rather underwhelming effects of revolutionary violence on the hierarchies of rural society in the Banda Oriental. An interpretation most recently articulated by Ricardo Salvatore claims that, to the contrary,

The revolutionary wars transformed the nature of rural society: a society based on the estancia system evolved into one based on direct appropriation and cooperative labor. Rural inhabitants took advantage of this social arrangement to fully exercise their cultural traditions of freedom, illegality, and avoidance of work.³⁸

As it often happens when writing the history of nineteenth-century Latin America, our assessment of the pace and scale of economic and social change hinges on how we construct its colonial baseline. As the previous chapter demonstrated, the colonial estancia was not an overwhelming force in the countryside, certainly not to the exclusion of direct appropriation from nature in the form of peasant independent cultivation, which was widespread and underpinned the very high wages commanded by free agricultural workers in the Banda Oriental. The post-uprising scenario was also not as ‘cooperative’ as Salvatore makes it out to be, a point about which rural slaves in the 1810s were probably keenly aware. While the large estancia, as an economic unit and a social institution, was hit by the loss of livestock wealth resulting from war, it was far from vanquished. The agricultural export sector would long remain tied to its productive strategies, and revolutionary violence did little to weaken those long-term, even if many individual *hacendados* lost their land and cattle during the revolutionary struggle.

The revolutionary program itself did not challenge slavery either, and its projected policy for the rural economy was more an extension than a dismantling of colonial precedent. The insurrection of peasants and *hacendados* against Spanish rule had been sparked in late 1810 by a decree issued by Montevideo’s governor who, in a break from local tradition and trying to raise funds to fight the now rebellious Buenos Aires, requested all landowners in the Banda Oriental, large and small, to submit proof of their land deeds within 40 days and imposed a tax to those without legal titles.³⁹ Five years later—at the apex of the revolutionary cycle when Artigas presided over a federation of provinces which excluded Buenos Aires—the revolutionary government returned to the crucial issue of access to land in its *Reglamento Provisorio de la Provincia Oriental para el Fomento de la Campaña y Seguridad de sus Hacendados*, a series of land laws more commonly known as the *Reglamento de Tierras*.⁴⁰

³⁸ Ricardo Salvatore, ‘The breakdown of social discipline in the Banda Oriental and the Littoral, 1790-1820,’ in *Revolution and Restoration: The Rearrangement of Power in Argentina, 1776-1860*, ed. Mark D. Szuchman and Jonathan C. Brown (Lincoln, 1994): 82.

³⁹ An well-documented account of this event and its economic and political aftermath is Agustín Beraza, *La economía en la Banda Oriental, 1811-1820* (Montevideo, 1964): 14-26.

⁴⁰ A working translation could be ‘Provisional Land Bylaws for the Improvement of the Countryside and the

Rather than attempt to fundamentally change the framework for owning land and mobilizing rural labour, the 1815 *Reglamento* preserved the principle, well-established by local colonial authorities and communities, that agricultural land should be formally granted to citizens provided they worked it. Land granted under the new bylaws could not be sold or rented, only one grant was to be given to each household, and the beneficiaries had to ‘build a shack and two paddocks within precisely two months.’⁴¹ In general, then, these dispositions reflected more than challenged preceding practices and rules. The radicalism of the *Reglamento*, however, came from explicitly extending these principles to some people the colonial state had considered, at best, second-class citizens—‘free blacks and *zambos* of the same class’ as well as ‘Indians’—and declaring that ‘the most disfavoured should be the most privileged’ by the new grants of public land.⁴² The implicit exception were black slaves, for whom no provisions were made, which makes the idea that this revolution represented ‘the abolition of social hierarchies’ *tout court* unsustainable.⁴³

Abolishing slavery was never a declared objective of Artigas’s movement, perhaps owing to the broad range of rural people that formed its economic and social base of support. The only detailed quantitative record of rural households pledged to the revolution, a ‘census’ of families who followed the revolutionary army in the aftermath of the siege of Montevideo in late 1811, is often used by historians as proof that this was a movement of the rural poor and middling sorts rather than of large *hacendados*, because most of the recorded families did not own slaves and a third of them did not own a single carriage or cart, which can be seen as prime examples of (inanimate) capital goods in this rural economy.⁴⁴ Yet, those same records, covering over 4,000 people, also show that slave-owners made up a substantial share of total family heads (15%) with an average of almost 3.5 enslaved workers per slave-owning household, who in almost all cases owned at least one carriage, if not several.⁴⁵ It would seem, then, that the support of slave-owning, mid-size

Security of its Landowners’; its shorter name meant simply ‘Land Bylaws.’ The *Reglamento* was issued on September 10th, 1815. The best in-depth study of its application remains Sala de Touron, de la Torre, and Rodríguez, *Revolución agraria*. For an overview of more recent scholarship, see the contributions to Gerardo Caetano and Ana Ribeiro, eds., *Tierras, reglamento y revolución: reflexiones a doscientos años del reglamento artiguista de 1815* (Montevideo, 2015).

⁴¹ ‘Después de la posesión serán obligados los agraciados por el señor alcalde provincial o demás subalternos a formar un rancho y dos corrales en el termino preciso de dos meses, los que cumplidos, si se advierte la misma negligencia, será aquel terreno donado a otro vecino más laborioso y beneficio a la provincia.’ (Article 11).

⁴² The children of an Indigenous and a black parent were called *zambos*. The full article of the *Reglamento* reads ‘Por ahora el señor alcalde provincial y demás subalternos se dedicarán a fomentar con brazos útiles la población de la campaña. Para ello revisará cada uno, en sus respectivas jurisdicciones, los terrenos disponibles; y los sujetos dignos de esta gracia con prevención que los más infelices serán los más privilegiados. En consecuencia, los negros libres, los *zambos* de esta clase, los indios y los criollos pobres, todos podrán ser agraciados con suertes de estancia, si con su trabajo y hombría de bien propenden a su felicidad, y a la de la provincia.’ (Article 6).

⁴³ Cf. Salvatore, ‘Breakdown of social discipline’, 84.

⁴⁴ Frega, *Pueblos*, 146; Inés Cuadro, ‘La emigración o Redota en la revolución de independencia,’ in *Los caminos de la Redota: enfoque histórico arqueológico y georreferenciación*, ed. Ana Frega and José López Mazz (Montevideo, 2015): 32.

⁴⁵ Author’s calculations on the basis of ‘Padron de las Familias emigradas de la Vanda Oriental que siguen al Exercito del mando del Señor Coronel don José Artigas, sin comprenderse los dependientes de ellas empleados

and large *hacendados* (including, for example, Artigas's brother and father, who owned 19 slaves, 8 carriages, and thousands of hectares)⁴⁶ was not a trivial matter for a revolutionary leadership that was in dire need of resources to sustain an almost constant military and diplomatic struggle against Spain, Portugal, and at times also Buenos Aires's revolutionary government who intended to annex the Banda Oriental.

While abolition was not part of the revolution's stated goals, and even if its leadership relied politically on the support of slave-owners as well as peasants, emancipation could still have occurred as a more or less unintended result of the transformations underway and of slaves' and former slaves' part in the actual fighting.⁴⁷ In particular, could the revolution's land policy, if fully implemented, have led to a substantially more egalitarian countryside, and, crucially for our discussion, one without slaves? Historians have long debated how radical the *Reglamento* was, with some scholars implying that the revolution's military defeat to the Portuguese (1817-1820) and the subsequent years of Brazilian rule (1821-1825) prevented the first land reform in Latin American history from taking place, or even closed down a more egalitarian trajectory for Uruguayan economic development: a 'farmer path' (rather than a 'Junker' one) to agrarian capitalism.⁴⁸

From the perspective of this dissertation, which looks for long-term shifts in the patterns of access to and use of resources in Uruguay's rural development, the *Reglamento* appears as a variation within a system already in place rather than an attempt at a wholesale transformation of it. That variation tended towards a more egalitarian outcome, to be sure, as it explicitly expanded the base of potential smallholders, but that base already included most rural households: ownership of land was unequal and *at the same time* widespread in late-colonial times.⁴⁹ All the same, the *Reglamento* aimed to preserve a relationship with nature and a logic of allocation of resources predicated on the political distribution of abundant agricultural

actualmente en el Servicio de las Armas', December 16th, 1811, printed in Comisión Nacional, *Archivo Artigas*, vol. VI (Montevideo, 1965): 98-154. The first scholar to study these records was Clemente L. Fregeiro, 'El Éxodo del pueblo oriental, 1811,' *Anales del Ateneo* 41 (1885). Recent archaeological research has provided a much better spatial sense of the population movements surrounding these records, see José López Mazz, Alfonso Machado, Óscar Marozzi, and Christopher Duarte, 'Georreferenciación de la ruta del Éxodo,' in *Los caminos de la Redota: enfoque histórico arqueológico y georreferenciación*, ed. Ana Frega and José López Mazz (Montevideo, 2015).

⁴⁶ Comisión Nacional, *Archivo Artigas*, VI, 142, 54. On the Artigas's estancias, see Beraza, *La economía*, 8.

⁴⁷ On slaves as part of the popular rural masses that made up the revolutionary army, see Ana Frega, 'Los "infelices" y el carácter popular de la revolución artiguista,' in *¿Y el pueblo dónde está? Contribuciones para una historia popular de la revolución de independencia en el Río de la Plata*, ed. Raúl O. Fradkin (Buenos Aires, 2008). For a biography of an Afro-Uruguayan who was very close to the revolutionary leadership, see Alejandro Gortázar, 'Ansina: ¿un héroe en clave afro-uruguaya?', in *Los héroes fundadores: perspectivas desde el siglo XXI*, ed. Carlos Demasi and Eduardo Piazza (Montevideo, 2006).

⁴⁸ See the classic interpretations in Lucía Sala de Touron, Nelson de la Torre, and Julio C. Rodríguez, *Artigas y su revolución agraria, 1811-1820* (Mexico City, 1978), Lucía Sala de Touron, Rosa Alonso Eloy, and Julio C. Rodríguez, *El Uruguay comercial, pastoril y caudillesco*, 2 vols. (Montevideo, 1986), and Barrán and Nahum, *Bases económicas*, 116-31.

⁴⁹ Historians have sometimes assumed that high levels of land inequality necessarily imply a narrow base of ownership, which need not be the case, statistically or historically. See, for a classic and a more recent example, Beraza, *La economía*, 9 and Salvatore, 'Breakdown of social discipline', 84.

land, which remained predominantly in the public domain. This was not a move away from a brisk, capitalist land market towards the socialization of land, but the continuation of the predominance of non-market mechanisms of allocating land resources, with the same objective that animated local colonial authorities before: encouraging settlement in a lightly populated frontier. Revolutionary leaders had, after all, even a greater security reason to do so than the Spanish empire had had.

Therefore, large estates or cattle herds were not questioned nor expropriated, unless they happened to belong to political enemies ('bad Europeans and worse [Latin] Americans'), who had in fact already fled.⁵⁰ That being said, several immense estancias did belong to political enemies and they were duly subdivided between many beneficiaries, as it happened in 1816 with 'Estancia Las Vacas,' which we visited in Chapter 2 as a site to explore rural slavery in the late-colonial period.⁵¹ If the *Reglamento* fell short in its credentials as a socializing land reform, it was also far from pioneering a farmer road to agrarian capitalism, as the creation of a land market was actively discouraged, with rules explicitly preventing beneficiaries from renting or selling their farms in any way. Meanwhile, rural livelihoods could still be partially sustained by the direct appropriation of nature (timber, firewood, wild cattle, game) among the open fields. With slavery still very much legitimate, the hybrid labour system that characterised pastoral agriculture in the region, and which included a market in people as well as in (mostly seasonal) free labour, remained untouched by the revolutionary program.

From the vantage point of long-term rural development, then, the *Reglamento* was not 'a bold challenge to all the colonial past that the revolution was leaving behind,'⁵² as the conventional wisdom in political history, most recently restated by Caetano and Ribeiro, would have it. It was, instead, a pragmatic attempt to expand the basis of the rural economy, and of political support for the revolution, without substantially changing its foundations in terms of access to resources for agriculture, both natural and human. A counterfactual scenario where the application of the *Reglamento* had not been cut short by the Luso-Brazilian army has not been explored in the specialist literature, perhaps because of the uneasiness many historians feel when confronted with explicit counterfactuals.⁵³ While this is not the place for a full excursion

⁵⁰ 'Los terrenos repartibles son todos aquellos de emigrados, malos europeos y peores americanos que hasta la fecha no se hallan indultados por el jefe de la provincia para poseer sus antiguas propiedades.' (Article 12).

⁵¹ On the redistribution of the vast lands of the former Estancia Las Vacas and the 21 families who settled them under the *Reglamento*, see the wonderfully detailed account in Sala de Touron, de la Torre, and Rodríguez, *Revolución agraria*, 255-65. This subdivision and redistribution of (enemy) landed property was, however limited, still unique among South American revolutionary programs; see, for an overview, David Bushnell, 'The Independence of Spanish South America,' in *The Cambridge History of Latin America*, ed. Leslie Bethell (Cambridge, 1984).

⁵² 'una osadía y un desafío a todo el pasado colonial que la revolución dejaba atrás.' Gerardo Caetano and Ana Ribeiro, 'Doscientos años del Reglamento agrario de 1815: una convocatoria a nuevas lecturas,' in *Tierras, reglamento y revolución: reflexiones a doscientos años del reglamento artiguista de 1815*, ed. Gerardo Caetano and Ana Ribeiro (Montevideo, 2015): 11.

⁵³ I do not count myself among them. Two interventions which have further persuaded me of the usefulness of

into that alternative past, there is, in my view, nothing in the built-in mechanisms of the *Reglamento* and their potential interactions with local farming practices and environments that would have led to increases in the relative value of land in the short term, nor to the weakening of the economic rationale for rural slavery.

2.2. Independence now, freedom later

In the range of New World post-colonial constitutions in agrarian slave societies (or ‘societies with slaves’, a distinction that in this context is not necessarily illuminating), Uruguay’s first (1830) was not an outlier. If we think of a continuum between, on the one hand, the outright abolition of slavery in Haiti’s first constitution (1805) and, on the other, the emphatic upholding of enslaved labour in the 1850 constitution of Kentucky, Uruguay was, like most of Latin America, somewhere in between.⁵⁴ International slave-trading was banned and the freedom of births recognised, but slaves were not emancipated and slavery itself not questioned. To my knowledge, Uruguayan constitutional scholars have so far not made these comparisons, precisely because they have been misled by the ‘society with slaves’ label.⁵⁵ This is not the right place, nor am I the right scholar, for such an analysis, but the relative lateness with which slavery was even formally abolished (1842 and 1846, on which more in the next section) does suggest that slavery was politically more costly to end in early Uruguay than it was in Latin American countries which did abolish it shortly after independence: Chile (1823), the Central American Federation (1824), and Mexico (1829). Despite what has long been taught in Uruguay’s primary schools, the abolition of slavery in the country cannot be called ‘early’, except in comparison with Brazil, Cuba or the United States, and can hardly be taken as evidence of the country’s progressiveness.⁵⁶

The course of abolition in Uruguay was slow not only because slavery itself was not abolished at independence, but because slave importing, even after it was banned, continued. As the extraordinarily rich *Voyages* database shows, the River Plate was the only formerly Spanish American region which imported substantial numbers of slaves after 1820, and Uruguay’s was the new flag under which more slave ships sailed

counterfactuals in economic history are Stanley L. Engerman, ‘Counterfactuals and the new economic history,’ *Inquiry* 23, 2 (1980) and McCloskey, *Econometric History*, 16-17.

⁵⁴ Haiti’s 1805 constitution not only abolished slavery but also prevented whites from acquiring any property: ‘L’esclavage est à jamais aboli.’ (Article 2); ‘Aucun blanc, quelle que soit sa nation, ne mettra le pied sur ce territoire, à titre de maître ou de propriétaire et ne pourra à l’avenir y acquérir aucune propriété.’ (Article 12). The text of Kentucky’s 1850 constitution was very explicit in upholding property rights in people: ‘the right of the owner of a slave to such slave and its increase, is the same, and as inviolable as the right of the owner of any property whatever.’ (Article 13).

⁵⁵ As Borucki has argued, if we insist in saying nineteenth-century Uruguay was a ‘society with slaves’ rather than a ‘slave society’, we should always clarify ‘but with *many* slaves’ (‘pero con *muchos* esclavos’), especially, I would add, considering demographic size and factor ratios. Borucki, ‘Esclavitud’, 45. For pioneering and still relevant plea by a poet-historian to consider nineteenth-century Uruguay as a slave society, see Ildefonso Pereda Valdés, *Negros esclavos y negros libres: esquema de una sociedad esclavista y aporte del negro en nuestra formación nacional* (Montevideo, 1941).

⁵⁶ See the introduction to the excellent Andrews, *Afro-Uruguay*.

in the 1830s, even after the formal abolition of slave trading under the first constitution.⁵⁷ In the decades that followed slave trading became less brazen but remained consequential, if far smaller in scale. The history of illegitimate slave trading in early Uruguay has only recently started to be explored, and it included trans-Atlantic journeys of so-called ‘African colonists’ as well as overland people-smuggling along the vast northern border with Brazil.⁵⁸ Selling and buying slaves within Uruguay, however, was still perfectly legitimate, as a look at classified ads in Montevideo newspapers from the 1830s and early 1840s will show. While the legal framework of the emerging republic did not explicitly allow or regulate the domestic trade in slaves, it remained very much above the board, as even civil servants publicly sold slaves for agricultural work on the side:

FOR SALE. A young negro, suited to a Countryside estate; he knows how to tame horses and make beef jerky, has no known vices, and is available at a moderate price. Those interested in buying him should come to the Police headquarters to discuss.⁵⁹

Besides banning *external* slave trading, the 1830 constitution followed the 1825 declaration of independence in establishing the principle of free births, or ‘freedom of the wombs’ (*libertad de vientres*): ‘in the territory of the state no one will be born a slave any longer.’⁶⁰ This was not an uncommon formula in early Latin American constitutions, and in the case of Uruguay it can be seen as a compromise between recognising the large contributions of Africans and their descendants to the revolutionary war effort, while at the same time not challenging the property rights of slave-owners.⁶¹ It also allowed the government of a small buffer state to take a cautious political stand against enslavement without having to pay hefty compensation to slaveholders or stoke their fear of a social revolution in the aftermath of independence.⁶² Paying compensation was, as the contemporary press noted, a difficult proposition for a fledgling government that ruled over a small, dispersed agrarian society, was already heavily indebted, and needed to

⁵⁷ David Eltis and Martin Halbert, *Voyages: The Transatlantic Slave Trade Database* (2008+updates).

⁵⁸ See, respectively, Alex Borucki, ‘The ‘African Colonists’ of Montevideo: New Light on the Illegal Slave Trade to Rio de Janeiro and the Río de la Plata (1830–42),’ *Slavery and Abolition* 30, 3 (2009) and Eduardo R Palermo, ‘Cautivos en las estancias de la frontera uruguayo-brasileña,’ *Mundo agrario* 9, 17 (2008).

⁵⁹ ‘SE VENDE. Un negro joven, propio para un establecimiento de Campo; sabe domar y charquear, no tiene vicios conocidos, y su precio es moderado. El que se interese en su compra ocurra á la casa central de Policía donde hallará con quien tratar.’ BN, *El Universal*, Montevideo, 30 July, 1834, 1.

⁶⁰ ‘En el territorio del Estado, nadie nacerá ya esclavo’ (Article 131 of Uruguay’s first constitution (1830)).

⁶¹ On ‘freedom of the wombs’ as a political formula and its place in the Spanish American revolutions and their aftermath, see María Eugenia Chaves Maldonado, ‘El oxímoron de la libertad. La esclavitud de los vientres libres y la crítica a la esclavización africana en tres discursos revolucionarios,’ *Fronteras de la historia* 19, 1 (2014).

⁶² On local elites’ fear of a social revolution in the context of Uruguayan independence, see José Pedro Barrán, ‘La independencia y el miedo a la revolución social en 1825,’ *Revista de la Biblioteca Nacional* 26 (1986).

sustain a standing army.⁶³ The economic cost of independence, or rather of *achieving* independence through protracted war, weighed heavily on public finances: the republic was born with a public debt of 2 million pesos, more than twice its annual budget.⁶⁴ And because the prospects of peace were not encouraging, the army continued to take the lion's share of that budget for several years: Etchechury's in-depth study of public finances has shown it accounted for more than a third of all government expenditure between 1830 and 1835.⁶⁵ On the revenue side, with its minimal bureaucracy and trying to avoid further political risk, the early Uruguayan state depended almost entirely on custom duties. These also served as the prime collateral to obtain credit and as the backing for Uruguay's paper money, all of which was ultimately sustained by the agricultural export economy.⁶⁶

Whether the motive was fiscal economy, a lack of political commitment to emancipation, or both, the constitution's compromise solution meant that anyone born in Uruguay of a slave mother before 1830 would, in principle, remain a slave for life, and so it had much less of a short-term impact on rural slavery and the prospects for emancipation than may appear at first sight. Fleeing the estancia where they worked continued to be a risk worth taking for many rural slaves, and runaways were still persecuted by the police and denounced in newspapers:

THEY HAVE FLED. Two negroes, one called Marcelino, of short stature, stout body, without a beard, scarred in his upper lip, 20 years of age, who is a countryside negro; the other one named Tomas, of tall stature, slim body, scarred in his cheek, of Portuguese nation but speaks good Spanish, also a countryside negro. The Police of the Provinces as well as the City are informed so that they may find them, or take them to the house of Don Luis Gonzalvez Guimaraens, where a reward will be given to whoever delivers them.⁶⁷

⁶³ Agustín Beraza, 'Amos y esclavos,' *Enciclopedia Uruguaya* 9 (1968): 179.

⁶⁴ Washington Reyes Abadie and Andrés Vázquez Romero, *Crónica General del Uruguay*, vol. 4 (Montevideo, 2000): 337.

⁶⁵ Mario Etchechury Barrera, *Hijos de Mercurio, esclavos de Marte: mercaderes y servidores del Estado en el Río de la Plata (Montevideo, 1806-1860)* (Rosario, 2015).

⁶⁶ Before the 1860s direct taxes always accounted for less than 10% of government revenue: Camilo Martínez Rodríguez, 'La construcción del Estado Oriental del Uruguay (c.1853-1893). Otra mirada con foco en la evolución histórica de sus funciones' (Universidad de la República, 2019), 44-46. On early Uruguay's monetary policy, see Mario Etchechury Barrera, 'Más allá del metal. Crédito y usos monetarios de la deuda interna en el mercado financiero de Montevideo, 1837-1855,' *RUHE* II, 2 (2012).

⁶⁷ 'SE HAN HUIDO. Dos negros, uno llamado Marcelino, estatura baja, grueso de cuerpo, sin barba, tiene una cicatriz en el labio de arriba, edad de 20 años y es negro de campo; el otro llamado Tomas, estatura alta, cuerpo Delgado, tiene una cicatriz en un cachete de nacion portuguesa pero habla regular el castellano y Tambien negro de campo. Se avisa a la Policia de los Departamentos como a la de la Ciudad para que den noticia de él o lo entreguen en casa de D. Luis Gonzalvez Guimaraens donde sera gratificada la persona que los conduzca.' BN, *El Universal*, Montevideo, 28 April 1835, 4.

Rewards for capturing runaways and returning them to their masters were substantial and, in a context of monetary uncertainty following the creation of the new republic, were sometimes paid directly in gold.⁶⁸ The constitutional ban on slave importing created upward pressure on domestic demand for the labour of slaves, which could be temporarily hired. Slaves who were thus ‘rented out’ (*conchabados*) could keep some of the money paid for their labour which they could save for their manumission; most of the payment, however, went to their master.⁶⁹ The institution of *conchabo* (Spanish vernacular for ‘temporary employment’), used in colonial times primarily for renting slaves for household work, was extended to market-oriented activities, including beef jerky production for export:

INTERESTING NOTICE—Several negroes are needed as labourers for a jerky factory [*saladero*], those who would like to be temporarily employed [*conchavarse*], can come to the road of San Miguel number 85 where they can discuss.⁷⁰

The institutional framework was therefore geared towards slow, partial, and uneven abolition, and in so doing, I argue, was following more than shaping developments in the rural economy. A series of population registers from a range of rural villages and districts in 1836, containing over 18,000 individual-level records, most of them never transcribed by historians before, reveal how widespread slavery still was and provide a glimpse into paths to freedom and rural livelihoods. These nominal listings have come to us after enduring the accidents of source survival. The second independent government, led by Manuel Oribe, set out to conduct a census in mid-1836, but the plans were interrupted by the start of an eventually successful uprising led by the previous president, Fructuoso Rivera. Despite Rivera’s best efforts, his rebellion started late enough to allow some enumerators’ books to be completed, and 22 of them remain safe and legible in Montevideo’s Archivo General de la Nación (Illustration 3.1, Map 3.1, and Table 3.1). While their coverage is of course not ideal, I would argue that their informational content provides a kind of insight into the material history of the period that we can never get from the backwards projection of macroeconomic aggregates alone. Furthermore, given the tiny size of early Uruguay’s population, which historical demographers estimate at about 132,000 people by 1850, our 18,353 individual observations in 1836 (just before large-scale European immigration started) comprise a respectable share of the total, as they include

⁶⁸ When Agustín, a slave ‘of the Congo nation,’ fled Francisco Lucas’s estancia in early 1839, his owner promised ‘an ounce of gold’ as a reward for whoever found him. BN, *Revista Oficial*, Montevideo, 3 January 1839, 4.

⁶⁹ The workings of *conchabo* as an economic institution in this period, and its interaction with slavery and emancipation, deserve further study; see Florencia Thul, ‘Trabajo libre y esclavo de la población afrodescendiente en Montevideo, 1835-1841. Los registros de papeletas de conchabo para el estudio del mercado de trabajo,’ *RUHE* 3, 4 (2013).

⁷⁰ ‘AVISO INTERESANTE—Se necesitan varios negros para peones de saladero, los que quieran conchavarse, pueden ocurrir á la calle de Sn. Miguel No. 85 que encontrarán con quien tratar.’ BN, *Revista Oficial*, Montevideo, 3 January 1839, 4.

several districts in the most densely populated rural areas (the south and south-west).⁷¹ Beyond their absolute and relative size, these data have the benefit of being, in an etymological sense at least, truly 'empirical' in a way guesstimates based solely on sources for later periods or for other countries are not: these primary materials were actually close to, and grounded in, the collective experiences we want to account for. In the context of the source hiatus of the decades following independence, especially when it comes to quantitative data, their light, however small, shines particularly bright.

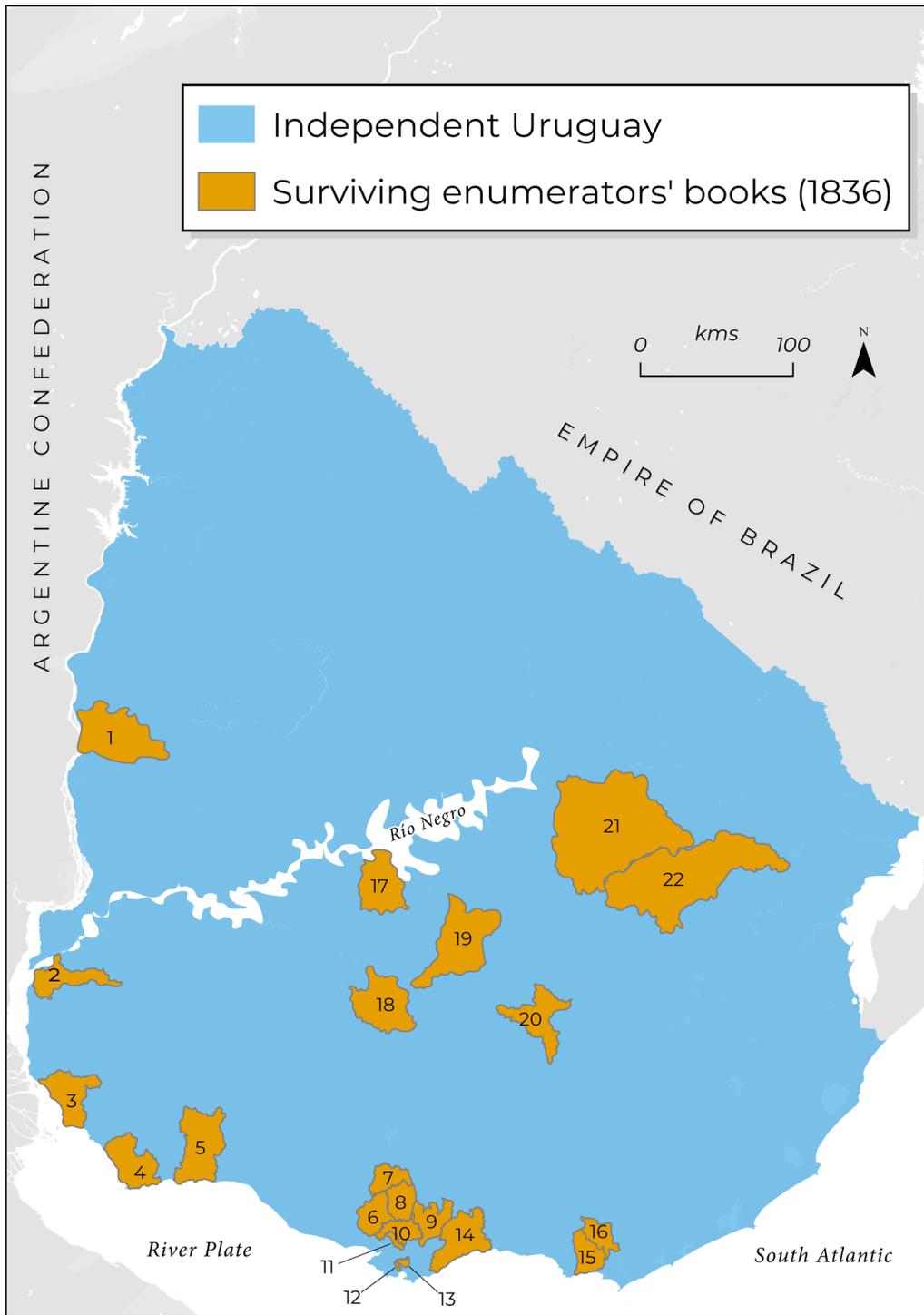
ILLUSTRATION 3.1. First page from the enumerator's book for Rosario (Colonia), 1836

Departamento de la Colonia											
Sufragio de P. de Rosario											
Padron de dicha Villa clasificando a todos sus habitantes.											
Nombres	Edad	Patria	Clases	Estado	Profesion	Hijos	Hijas	Esclavos	Esclavas	Total de cada	
No. 1. Don Juan de Godoy	48.	Espana	Plano	Conde	Comercio						
" Eufrasia Jimenez	35.	Oriental	Y. de	Y. de							
Francisca de Godoy	41.	Y. de	Y. de			Hijo					
Federico de Y. de	40.	Y. de	Y. de			Hijo					
Juan de Y. de	38.	Y. de	Y. de			Hijo					
Juan de Y. de	39.	Y. de	Y. de				Hija				
Ventura de Y. de	39.	Y. de	Y. de				Hija				
Anamaria de Y. de	38.	Y. de	Y. de				Hija				
Theresa de Y. de	35.	Y. de	Y. de				Hija				
Isabel de Y. de	34.	Y. de	Y. de				Hija				
Sebastiana Y. de	32.	Y. de	Y. de				Hija				
Antonio Y. de	30.	Apica	Reggo	Labero				Esclavo			
Jose Y. de	28.	Oriental	Reggo	Labero				Esclavo			
Juan Y. de	14.	Apica	Labero	Labero				Esclavo			
Juan Y. de	12.	Apica	Labero	Y. de				Esclavo			
No. 2. Don Gregorio Gonzalez	50.	Mendoza	Plano	Conde	Vecino						
" Carmen Diaz	40.	Oriental	Y. de	Y. de							
" Ciria Sanabria	21.	Y. de	Y. de	Y. de		Hijo					
" Miguel Y. de	18.	Y. de	Y. de	Y. de			Hijo				
" Rosalia Y. de	19.	Y. de	Y. de	Y. de			Hija				
" Ambrosia Y. de	17.	Y. de	Y. de	Y. de			Hija				
" Macarena Y. de	9.	Y. de	Y. de	Y. de			Hija				
No. 3. D. Pedro Alvarez	85.	Espana	Y. de	Conde	Vecino						
" Petrona Estigarribia	55.	Y. de	Y. de	Y. de							
" Victoria Alvarez	35.	Y. de	Y. de	Y. de		Hija					

Source: author's photograph, Archivo General de la Nación (Montevideo).

⁷¹ Large-scale European immigration started in the mid-1830s and picked up pace in the 1850s, while natural population growth also increased: by 1875 Uruguay's population had risen to 450,000; by 1908 to 1.1 million. Juan Rial, *Estadísticas históricas de Uruguay, 1850-1930* (Montevideo, 1980); Nicolás Sánchez-Albornoz, 'The population of Latin America, 1850-1930,' in *The Cambridge History of Latin America: Volume 4: c.1870 to 1930*, ed. Leslie Bethell, The Cambridge History of Latin America (Cambridge, 1986).

MAP 3.1. Geographical coverage of 22 enumerators' books for rural districts, 1836



Note: approximate locations only.

Source: drawn by the author.

TABLE 3.1. Rural households, slaves, freedpeople, and labourers in surviving enumerators' books, 1836 (continues on next page)

Village or district (province) [map reference]	Individuals recorded	Household heads' modal occupation	Family labour per household	Slave-owning households (%)	Slaves per slave-owner	Free blacks (%)	Wage labourers per household	Ethnicity (white black mulatto Indian)
Paysandú (Paysandú) [1]	250	Cattle farmer	3.9	25%	1.5	25%	1.0	87 7 2 3
Soriano, Águila, Bizc. (Soriano) [2]	1,643	Labourer	2.9	12%	2.0	23%	0.5	83 7 2 7
Víboras (Colonia) [3]	1,088	Tiller	3.2	10%	1.5	26%	0.2	...
Real de San Carlos (Colonia) [4]	830	Cattle-owner	3.8	22%	2.9	13%	0.2	...
Rosario (Colonia) [5]	1,798	Farmholder	4.2	16%	2.1	26%	0.8	84 6 6 5
P. de Belastiquí (Canelones) [6]	354	Cattle-owner	4.5	25%	4.3	27%	0.3	...
Coello (Canelones) [7]	1,749	Tiller	3.9	15%	3.0	24%	0.2	...
Guadalupe (Canelones) [8]	1,910	Labourer	3.5	27%	2.4	20%	0.2	...
Canelón Chico (Canelones) [9]	571	Tiller	4.9	15%	2.4	0%	0.1	...
A. y Villa Piedras (Canelones) [10]	238	Tiller	3.6	25%	1.8	26%	0.0	...
Colorado (Canelones) [11]	188	Tiller	3.2	17%	2.6	7%	0.9	...
Pantanoso (Montevideo) [12]	760	Tiller	5.3	25%	3.4	37%	1.4	...
Peñarol (Montevideo) [13]	503	Farmholder	5.2	36%	2.9	14%	0.9	...

TABLE 3.1. Rural households, slaves, freedpeople, and labourers in surviving enumerators' books, 1836 (continued)

Village or district (province) [map reference]	Individuals recorded	Household heads' modal occupation	Family labour per household	Slave-owning households (%)	Average slaves per slave-owner	Free blacks (%)	Wage labourers per household	Ethnicity (white black mulatto Indian)
Pando (Canelones) [14]	3,140	Tiller	5.2	23%	2.4	6%	0.0	...
La Laguna (Maldonado) [15]	470	Tiller	4.9	16%	2.1	4%	0.0	94 6 0 0
Los Ceibos (Maldonado) [16]	589	Tiller	4.9	17%	2.4	15%	0.1	94 6 0 0
Mynas (Durazno) [17]	91	Cattle-owner	4.1	93%	1.0	36%	1.8	48 21 21 10
C. de Maciel (Durazno) [18]	143	Tiller	3.9	0%	—	—	0.0	62 0 2 36
Chileno (Durazno) [19]	1,133	Cattle-owner	4.2	25%	3.9	12%	0.7	64 14 7 15
Illescas (San José) [20]	245	Cattle-owner	3.6	41%	3.3	4%	1.2	...
Cordobés - Tupam. (C. Largo) [21]	337	Not given	3.2	65%	5.2	0%	0.2	...
Olimar, Yerbal, Cuchilla Grande (Cerro Largo) [22]	323	Not given	4.0	52%	3.7	0%	0.8	...
<i>Total</i>	<i>18,353</i>	—	<i>4.1</i>	<i>21%</i>	<i>2.7</i>	<i>16%</i>	<i>0.4</i>	—

Notes: Occupations refer to the modal value of head of household's occupations (*asendado, labrador, trabajador, peon, criador, propietario* in the original). 'Family labour per household' calculated as the mean number of family members in a free household in addition to the household head. 'Ethnicity' refers to the 'class' assigned to each individual in the enumerators' books, when available for the majority of observations: 'black' refers to those described as *negro(a)* and *moreno(a)*, while the category 'indian' accounts for *indio(a)* and *chino(a)*, 'mulatto' is chosen as a translation for *pardo(a)*, and 'white' is used for those recorded as *blanco(a)*.
Sources: MVD, AGA, Libros 271 (Soriano), 279 (Canelones), 273 (Cerro Largo), 278 (San José), 277 (Paysandú), 276 (Durazno), 283 (Maldonado), 288 (Colonia), 465 (Montevideo extramuros). Records for Canelones province taken from the underlying data in Moraes and Pollero, *Categorías ocupacionales* and corrected by cross-referencing with the primary sources.

While these local sources cannot be straightforwardly added up to form a national picture, they can give us a quantitative sense of how agriculture was structured across different environments, from the fertile dark soils of the south-west to the dry stony grasslands of the mid-east and the warmer north-west littoral. The rural economy of early Uruguay was still defined by the interaction of peasant grain and vegetable agriculture reliant on family labour and extensive cattle-raising by small and large producers alike. Nuclear families were more common than large extended ones, probably because fertile land was available for free young adults to take up as independent cultivators themselves: the average family size, including the household head and children of all ages, was about 5 people. Again, because land remained abundant, and labour the limiting factor, acquiring extra-familial labour was necessary to achieve any scale beyond family production. To do so, large producers acquired both work and workers in the market: free wage labour and slavery continued to coexist. Because we have no output data to match these demographic sources, we cannot establish how much of the required work in cattle-raising was done by free ranch hands or by slaves, nor test whether there were advantages in up-scaling and, if so, whether slave-owning ranchers benefitted from higher productivity derived from economies of scale. However, we can still glimpse the character of rural slavery and its resilience in early Uruguay from the sources we do have.

In the late 1830s, slavery remained important to the rural economy after over two decades of revolutionary warfare followed by a constitution that banned slave trading and enslavement at birth. Five out of six black people were enslaved, and they made up about a fifth of the recorded agricultural workforce (including family labour). Moreover, rural slavery retained its defining late-colonial traits: it was widespread—one in five households owned slaves in a fairly flat distribution—;⁷² small-scale, with a mean of just under three slaves per slaveowner (about half the average in rural São Paulo at the time);⁷³ more associated with ranching than with tilling;⁷⁴ and complementary, rather than alternative, to family and free labour: no farm or ranch in the sample was worked solely by slaves, but slaves were almost always present in households which employed several extra-familial workers. That being said, a few of the largest producers did rely almost entirely on slaves. Joaquín Silba Moreira, a large *hacendado* in his sixties raising cattle in the Chileno district of Durazno, owned 35 slaves and employed only two free labourers.⁷⁵ But this was unusual in districts where most producers owned slaves, such as in the mid-eastern Cerro Largo province, where slave and family labour participated in almost equal measure in production.

⁷² The Gini coefficient of slaves owned was 0.45, considering only the households who owned at least one enslaved person (author's calculation of the standard Gini coefficient based on data presented on Table 3.1 for the provinces of Cerro Largo, Colonia, Durazno, Montevideo, and San José).

⁷³ Francisco Vidal Luna and Herbert S Klein, 'Slaves and masters in early nineteenth-century Brazil: São Paulo,' *The Journal of Interdisciplinary History* 21, 4 (1991): 564-65.

⁷⁴ Slave-owning *labradores* (crop farmers) had an average of 1.7 slaves compared with 3.3 for *hacendados* (ranchers) (author's own calculation based on data presented on Table 3.1 for the provinces of Cerro Largo, Colonia, Durazno, Montevideo, and San José).

⁷⁵ MVD, AGA, Libro 276, 'Departamento de Durazno. Segunda Seccion. Padron clasificando á todos sus habitantes,' 18-19.

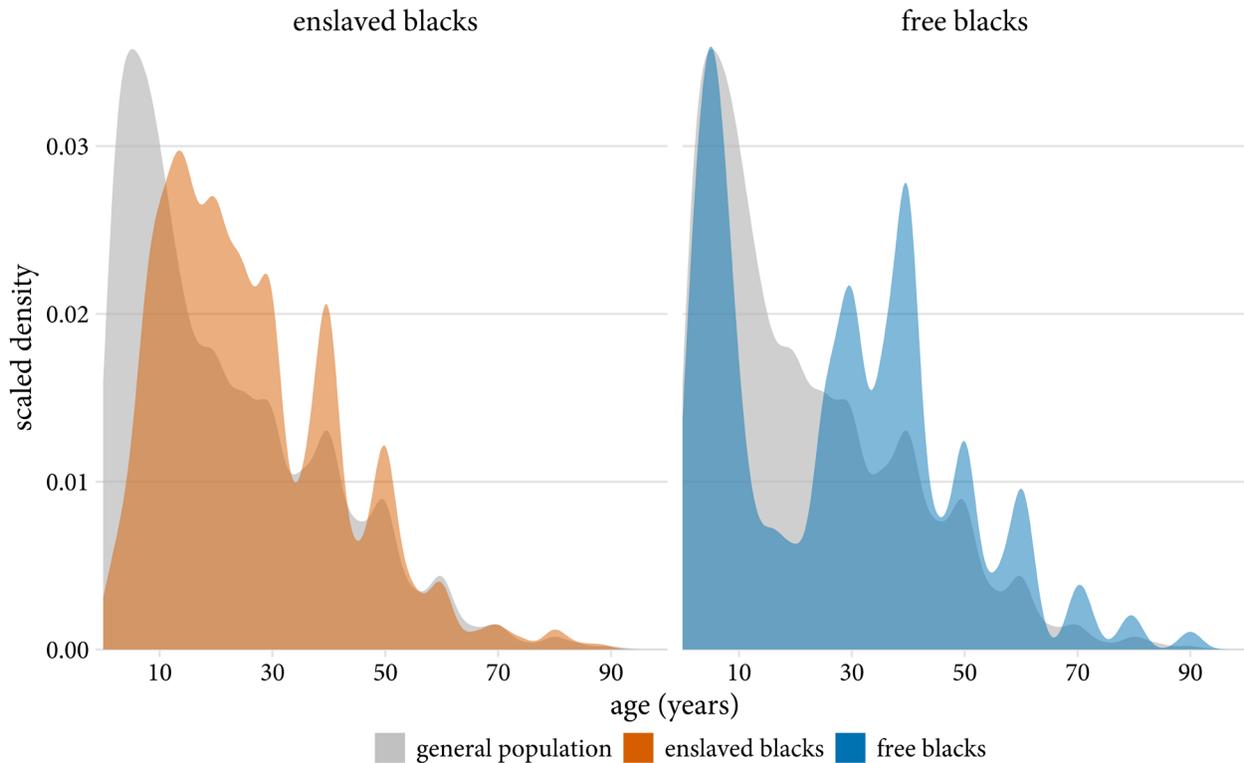
While slavery continued to be an everyday feature of early Uruguay's rural society, the fortunes of many slaves themselves seemed to be changing, albeit unevenly. Young enslaved adults found ways to freedom, and so, through them, did their children. Harvesting the data from those enumerators' books that contain age information for all individuals in their district, we can compare the ages of enslaved and free black people, in the context of the age distribution of the general population (i.e. including non-blacks as well) (Graph 3.1). The age structure of the population at large is the one expected in a pre-demographic transition agrarian society: a social preference for high fertility (as peasants safeguarded their future by having more potential adult producers) and high levels of mortality resulted in an overwhelming presence of children and teenagers. More than half of the people recorded in the enumerators' books were under 18.⁷⁶ The peaks and troughs in the age distribution is also typical of a pre-industrial agrarian society: clear evidence of age heaping suggesting that a large share of the population were not numerate.⁷⁷ Applying the methodology proposed by A'Hearn, Baten, and Crayen, we can estimate that only 69% of the respondents recorded in the enumerators' books could remember or calculate their own age correctly. The gap in estimated numeracy between black slaves and the non-black population was notable: 71% for non-blacks and 57% for enslaved blacks, whereas among free blacks the estimate is somewhere in between (60%).⁷⁸

⁷⁶ On pre-demographic transition fertility strategies, see the seminal John C Caldwell, 'Toward a restatement of demographic transition theory,' *Population and Development Review* 2, 3/4 (1976): 329-30.

⁷⁷ Economic historians interpret age heaping as evidence of innumeracy (a lack of 'ability to count, keep records of these counts, and make rational calculations' according to Emigh) because when individuals struggle to calculate their age, they tend to give a figure by rounding off towards 'attractive' numbers, generally those ending in 5 or 0. Such ages are then over-reported, which creates sharp jumps in the aggregate data. See Rebecca Jean Emigh, 'Numeracy or Enumeration?: The Uses of Numbers by States and Societies,' *Social Science History* 26, 4 (2002) and Dorothee Crayen and Jörg Baten, 'Global trends in numeracy 1820–1949 and its implications for long-term growth,' *EEH* 47, 1 (2010). A long-term study in Latin American context is Kerstin Manzel, Jörg Baten, and Yvonne Stolz, 'Convergence and divergence of numeracy: the development of age heaping in Latin America from the seventeenth to the twentieth century,' *EcHR* 65, 3 (2012).

⁷⁸ All figures in this paragraph result from the author's own calculations based on the age data presented in Graph 3.1 and deploying the transformation of the Whipple Index developed by Brian A'Hearn, Jörg Baten, and Dorothee Crayen, 'Quantifying quantitative literacy: Age heaping and the history of human capital,' *JEH* (2009). Details can be found in the Appendix and the Additional Materials.

GRAPH 3.1. Ages of freedom, ages of slavery
Age profile of population in 12 Uruguayan rural districts in 1836 (N=8,544)



Notes: the height of the curve is scaled so that the area under it equals 1 for all three populations. Density estimates were performed with a Gaussian kernel and a bandwidth of 2.

Source: author's calculations on the basis of surviving enumerators' books which contained complete age data. Those were available for the districts of Mynas, Maciel, Chileno, Rosario, Peñarol, Paysandú, Soriano, Canelón Chico, Colorado, Belastiquí, Piedras, Pantanoso, Los Ceibos, and La Laguna. See Table 3.1 for details on the primary sources.

Against this demographic background, the generational divides in the opportunities to attain freedom were, it seems, stark. The age structure of enslaved blacks resembled that of the general population closely but with a marked lag in its distribution, with most slaves being between 10 and 24 years old. On the other side of emancipation, slightly older young adults, between their late-twenties and their early-forties, were over-represented among free blacks, as were children under the age of 10. It would seem that adults needed some time to save enough to pay for their own manumission, which would explain the very low frequency of free blacks in their teens or early twenties. In the case of children, at first sight these age data could be considered proof for the emancipatory effects of Uruguayan independence: the 'wombs law' contained in the 1825 declaration of independence from Brazil and enshrined in the principle of free birth in the 1830 constitution. Indeed, this would suit the long-established narrative of primary school official reading books, which holds that slavery was effectively abolished by the enlightened policy of the independence heroes because 'the Motherland they created was not just for some class or caste. It was for whites and blacks' as

benefitted 'a nation small by its size, but made exemplary by its institutions.'⁷⁹

Nevertheless, a closer look at the experiences of freedpeople (*negros libertos*, or simply *libertos*) suggests that their emancipation was not primarily a consequence of independent Uruguay's policy. The vast majority of free blacks, including children, were free thanks to their own efforts, or that of their parents, rather than because of the new legal framework. If we focus on the sub-group of free blacks for whom we have a specific status descriptor in the enumerators' books (condition or occupation), we can infer how they became free or how, after becoming free, they sustained their livelihoods (Graph 3.2).

The 'freedom of the wombs' policy had a relatively small effect: at most 13% of the free black people in the sample could be said to have benefitted from it. This was not only because the novel prohibition of enslavement at birth was ignored by some slave-owners, on which more shortly, but also because two-thirds of free black children were free because their parents were, and so did not owe the recognition of their freedom to the constitution. The new policy certainly had a favourable effect on emancipation, but the vast majority of freedpeople in the 1830s would have been free anyway without it.

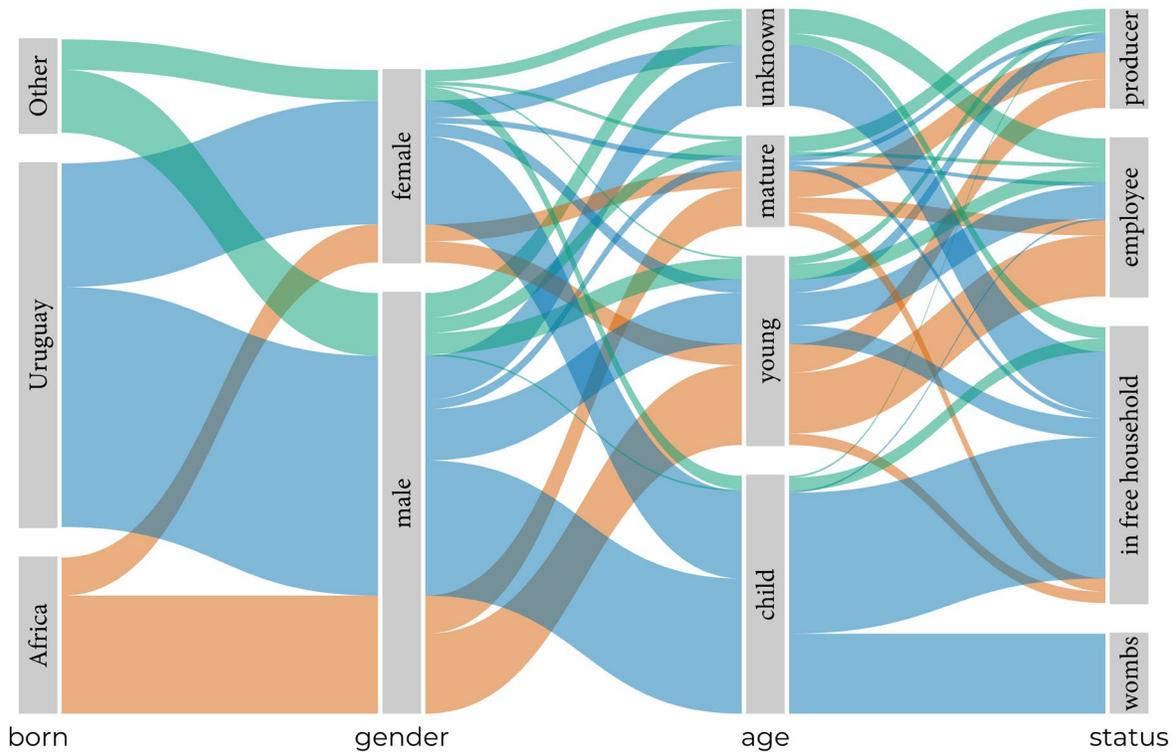
Almost 9 out of 10 free blacks, then, became free through their own devices or those of their close family. Graph 3.2 reflects the ability of former slaves to re-insert themselves into the rural economy in a variety of roles, not only as wage labourers but also as independent producers, including family-based farming and even cattle-raising employing hired labour. It also testifies to the ability of early Uruguay's rural society to incorporate them in new roles. This was entirely a bottom-up process: the Uruguayan government had no policy towards freedpeople, and their independent livelihoods were forged in a formal institutional context which was at best indifferent to their destiny. The social mobility experience of entrepreneurial former slaves who managed to become successful livestock producers is particularly revealing. Ignacio García, an African cattle farmer in Paysandú near the shores of the Uruguay river, employed two Uruguayan mulattoes and a freed African as labourers, and managed his ranch together with Manuel Carapé, a Guaraní foreman he hired; Matías Gómez, also a freedman, was included in the productive unit as a *labrador agregado*: an independent tiller who would collaborate with the main estancia during times of peak work and could in turn use some of the ranch's tools and resources on his own plot.⁸⁰ Freedpeople who, like Ignacio García, achieved a scale, as independent producers, that required them to employ extra-familial workers (and allowed them to afford it) resorted to a variety of methods for procuring labour within the range of institutional arrangements available in the labour-scarce Uruguayan countryside. It should be noted, however, that while there are many examples of freedpeople employing other free blacks in different roles, I could not find a single case where a former slave became themselves a slave-owner.

⁷⁹ Roberto Abadie Soriano and Humberto Zarrilli, eds., *Democracia. Libro sexto de lectura*. (Montevideo, 1951): 15. See also Verónica Leone, 'Manuales escolares e imaginario social en el Uruguay del Centenario,' in *Los uruguayos del Centenario: Nación, ciudadanía, religión y educación (1910-1930)*, ed. Gerardo Caetano (Montevideo, 2000).

⁸⁰ MVD, AGA, Libro 271, 'Padron de habitantes de Soriano y su jurisdiccion, 1836', 8.

GRAPH 3.2. How did they become free?

Condition or occupation of free black people in 16 Uruguayan rural districts, 1836 (N=322)



Notes: ‘status’ categories are defined as follows: ‘wombs’ refers to children born of enslaved parents but who are recorded as free because of the constitutional ‘freedom of wombs’; ‘in free household’ refers to free children, siblings, and wives who are recorded as related to a household head (man or woman) who is free and has a recorded occupation; ‘employee’ refers to freedpeople who are dependent workers (labourers, foremen, etc); ‘producer’ refers to freedpeople who are independent producers (farmers, tenant farmers, ranchers, etc.). Age categories are arbitrary: ‘child’ (14 years old or younger), ‘young’ (15-45), ‘mature’ (45+).

Sources: author’s calculations on the basis of surviving enumerators’ books for the districts of Mynas, Illescas, Chileno, Real de San Carlos, Rosario, Vïboras, Colorado, Belastiquí, Piedras, Pando, Guadalupe, Coello, Soriano, Paysandú, Pantanoso, and Peñarol. See Table 3.1 for details on the primary sources.

The still relatively open access to agricultural land in large parts of Uruguay certainly played an important part in many transitions out of slavery. But freedpeople could also make it as tenant farmers, particularly on the extremely fertile soils of the south where there was little free marginal land to move into. Marcel José Pintos and his wife Teresa, who had disembarked in Montevideo from Angola as slaves, were by 1836 free tenant farmers in some of the most fertile land in Uruguay, in the Peñarol district north of the city.⁸¹ Teresa was explicitly recorded as a tenant farmer herself, but that was exceptional: the enumerators’ books tend to grossly underestimate the number of women who were farmers, as they were generally

⁸¹ MVD, AGA, Libro 146, ‘6a Manzana, 1ra Seccion de Extramuros, Peñarol, Padron del Año 1836’, 2.

recorded as ‘wife’ unless they were considered the head of family themselves (as was the case with widows). Women from other minority, subaltern groups, notably the Charrúa (‘native’ to the territory of Uruguay over at least several centuries), also managed to sustain independent rural livelihoods as smallholding farmers. Lucía Nieves, a single Charrúa young woman with six children aged between 3 and 13, was a smallholding tiller (*chacarera*) in the Chileno district of Durazno. In the context of a national historical imagination that still reconstructs the rural economy of the past as a largely male world, the economic activities of female producers in the aftermath of the independence wars deserve further exploration by economic and social historians.

As freedpeople who became independent producers and hired others showed conclusively, rural slavery was not a necessary condition for market-oriented agriculture in early Uruguay. But it was certainly still profitable for masters. While we do not have the data necessary to compare the relative costs of enslaved and free labour (as the previous chapter did in the late-colonial context), we can infer that slave-owning remained an attractive proposition from the persistent importance of slaves for rural wealth: property in people still made up 28% of rural asset value across 24 full tax assessments I was able to read.⁸² We can also infer slave-owning remained a profitable business because masters refused to give it up. Despite the very clear constitutional ban on enslaving newborns after 1830, more than 40% of black children under the age of seven were recorded as slaves in the enumerators’ books. Rural masters also found ways of getting around the constitutional ban that prohibited the transatlantic slave trade. Juan Dianobaitía, a white Uruguayan rancher in Soriano, had in his estancia five African children who were recorded by the enumerator in 1836 as ‘rural settlers’ (*colonos de campo*).⁸³ This fiction of African ‘settlers’ or ‘colonists’ was used in the 1830s by Montevidean and Rio de Janeiro-based slave-traders to avoid both Uruguay’s constitutional ban and the British persecution of slave ships.⁸⁴ As these records show, this trick was also deployed by slaveowners in the Uruguayan countryside, despite how implausible it was to claim that African children had voluntarily come to Uruguay to settle as rural ‘colonists’ without any adults. The rhetorical gymnastics involved in a former settler colonial society, now a settler republic, labelling African children ‘settlers’ in order to sustain the afterlife of the slave trade could be the subject of further study by intellectual historians.

⁸² I stress ‘able to read’: there are many more assessments in the archive but they are unfortunately illegible (at least by me and without access to more sophisticated technology), as in many of them the values were pencilled in and the handwriting has become too faint to read. MVD-AGA, ‘Planillas estadísticas de cada propiedad’ for Extramuros (Montevideo), Villa de San Pedro (Durazno), Garzón (Maldonado), and Castillos (Maldonado), Libros 465, 276, 283.

⁸³ They were four boys and one girl, all aged between 9 and 11; their recorded ‘homeland’ (*patria*) was ‘Africa.’ MVD, AGA, Libro 271, ‘Padron de habitantes de Soriano y su jurisdiccion, 1836’, 37.

⁸⁴ Borucki, ‘African Colonists’.

2.3. Civil war and emancipation

The decisive years for emancipation came during the decade that followed, which was entirely taken up by the longest civil war in Uruguayan history. This was no coincidence: emancipation advanced, slowly and unsteadily, not only during the successive cycles of political instability in Uruguay's 'lost decades', but to a large extent because of them. This is true, from above, in a formal, institutional sense: had Uruguay remained either a Spanish colonial outpost or, which seemed more likely at the time, a Brazilian imperial province, the chronology of emancipation would have been different and its pace even slower. Slavery was only abolished in Brazil in 1888, and in Cuba, one of the two Spanish colonies left in the continent, in 1886.⁸⁵ Both Madrid and Rio de Janeiro opposed even gradual or partial abolition until the 1880s, and there is nothing to suggest that either government would have felt differently about slavery in Uruguay had they retained imperial control of it.⁸⁶ Indeed, when Uruguay was under Luso-Brazilian rule, slave trading started to flourish again in Colonia and Montevideo, and it is difficult to imagine that the numbers of slaves disembarked would have decreased so suddenly in the 1830s if Uruguay had not become an independent state.⁸⁷

But there is also a second, more material sense in which the much-derided political instability of the 'lost decades' contributed to emancipation from below, because slaves and former slaves found themselves quite literally on its front lines. Since the initial triumphs against Spanish colonial forces, revolutionary troops in the Banda Oriental had been heavily African and Afro-Uruguayan, a point that creole military leaders, unlike later historians, vividly remembered when they went from fighting Spain, Portugal, and

⁸⁵ Puerto Rico also remained a Spanish possession. A brief and insightful comparative analysis can be found in Ciro Flamarion Cardoso and Héctor Pérez-Brignoli, *Historia económica de América Latina. Vol. II: Economías de exportación y economía capitalista* (Barcelona, 1979): 14-28. For the three main economic interpretations of the causes and timing of emancipation in Brazil, see: on slavery's inefficiency relative to free immigrant labour, Florestan Fernandes, *A revolução burguesa no Brasil: ensaio de interpretação sociológica* (Rio de Janeiro, 1975); on abolitionist pressures and the organization of land and labour markets, Pedro Carvalho de Mello, *A economia da escarvidão nas fazendas de café, 1850-1888* (Rio de Janeiro, 1984); and on the direct action of slaves, Warren Dean, *Rio Claro: A Brazilian Plantation System, 1820-1920* (Stanford, 1976). On the course of emancipation in Cuba's agricultural export economy, see, on changes in the organization of production, José A. Piqueras, 'El capital emancipado: esclavitud, industria azucarera y abolición en Cuba,' in *Azúcar y esclavitud en el final del trabajo forzado*, ed. José A. Piqueras (Madrid, 2002), and, for an environmental perspective, Reinaldo Funes Monzote, 'Tierras cansadas y quemadores de bagazo verde. La interacción con el medio natural y los cambios en la industria azucarera cubana desde mediados del XIX,' in *Azúcar y esclavitud en el final del trabajo forzado*, ed. José A. Piqueras (Madrid, 2002).

⁸⁶ On Brazil's policy and the 'second slavery' in the late-nineteenth century, see Sidney Chalhoub, *A força da escravidão: ilegalidade e costume no Brasil oitocentista* (São Paulo, 2012): 23-31. On the Spanish position on slavery, articulated from both Madrid and Havana, and its interaction with the protracted and gradual process of abolition in the island see, respectively, José A. Piqueras, *La revolución democrática (1868-1874): cuestión social, colonialismo y grupos de presión* (Madrid, 1992), and Rebecca Scott, *Slave Emancipation in Cuba: The Transition to Free Labor, 1860-1899* (Pittsburgh, 2000).

⁸⁷ On the intensification, during those years, of long-standing Luso-Brazilian trade networks in Montevideo, see Fabrício Prado, *Edge of Empire: Atlantic Networks and Revolution in Bourbon Rio de la Plata* (Oakland, 2015): 171-78.

Brazil to fighting each other in a long civil war: the *Guerra Grande* (1839-1851).⁸⁸ In the midst of this conflict—which became international as Argentina’s own warring factions, Brazil’s regular army, and the British and French navies intervened—both Uruguayan sides declared the abolition of slavery and strengthened their armies with battalions of freedpeople.⁸⁹ The wartime abolition of slavery had an additional fiscal benefit: the overriding military urgencies meant that slave-owners could be (and indeed were) denied compensation by both civil war parties with less political risk than a peacetime government would have faced.

By the time the *Guerra Grande* ended, not only was slavery illegal and many former slaves were now free veterans, but also the war-struck livestock sector which had profited so richly from enslaved labour was not in a position to do so as it faced the deepest crisis in its history: Uruguayan cattle herds were reduced to 2.5 million animals in 1852, down from a conservative estimate of 6.5 million in 1841.⁹⁰ With the short-term demand for rural labour at its lowest, and the waning economic power of formerly large cattle- and slave-owners, the post-civil war governments found it less costly to honour the repeated political commitments to persecute slave trading and to uphold the newly declared freedom of former slaves. The Brazilian government took the new Uruguayan position on slavery so seriously that, immediately after the civil war ended in 1851, it rushed to negotiate an extradition treaty with Montevideo to ensure that Brazilian slaves who fled south would be returned to their masters as fugitives, rather than granted freedom as Uruguayan slaves.⁹¹

This section has argued that the ‘lost decades’ thesis fails to consider what political conflict and instability during and especially since independence meant to slaves and former slaves as a new and changing context in which to achieve freedom and economic autonomy. Through direct or indirect access to agricultural land (as independent cultivators as well as labourers or *agregados*) former slaves and their families carved out ways to sustain rural livelihoods as free people. Historically-minded political scientists

⁸⁸ On the erasure of black soldiers in late-nineteenth and early-twentieth century Uruguayan school textbooks, see Jens R Hentschke, ‘Artiguista, White, Cosmopolitan and Educated: Constructions of Nationhood in Uruguayan Textbooks and Related Narratives, 1868–1915,’ *JLAS* (2012). The contributions of Africans and their descendants to the revolutionary armies, or indeed to any other aspect of Uruguayan history beyond late-colonial slave-trading, are not mentioned in the most widely-read recent general history of Uruguay: Gerardo Caetano and José Pedro Rilla, *Historia contemporánea del Uruguay: de la colonia al siglo XXI* (Montevideo, 2004). The classic history of the long civil war is Juan E. Pivel Devoto and Alcira Ranieri, *La guerra grande, 1839-1851* (Montevideo, 1971); for an English-language study see David McLean, *War, Diplomacy and Informal empire: Britain and the Republics of La Plata, 1836-1853* (London, 1995).

⁸⁹ Laws abolishing slavery were passed by each of the wartime governments in 1842 and 1846; see, for a recent analysis, Borucki, *Shipmates to Soldiers*, 129-33. For a series of fascinating vignettes on black soldiers’ paths to freedom, see Frega, ‘Patria.’

⁹⁰ Barrán and Nahum, *Historia Rural I*, 29.

⁹¹ On the politics of slavery, manumission, and re-enslavement along the mid-nineteenth century Brazil/Uruguay border see Keila Grinberg, ‘Slavery, manumission and the law in nineteenth-century Brazil: reflections on the law of 1831 and the ‘principle of liberty’ on the southern frontier of the Brazilian Empire,’ *European Review of History—Revue européenne d’histoire* 16, 3 (2009).

often emphasise that Uruguay's *Guerra Grande* 'had enormous consequences for institution building,' but strangely they do not include the effective end of slavery within those.⁹² As an economic institution, however, few changes could be more consequential, especially for a land-abundant agrarian economy. While the economics of rural slavery remained sound in Uruguay (wages were still high relative to the cost of land), its politics had become untenable, thanks chiefly to the prominent part played by slaves in the political instability of the mid-nineteenth century. As freedpeople had demonstrated before, and as we have shown through the quantitative analysis of the surviving enumerators' books of 1836, it was possible for former slaves to integrate themselves to early Uruguay's rural economy in a variety of new roles and sustain independent livelihoods. Therefore, when slavery definitively lost its political support by 1851, the existing economic opportunities in the countryside, and the ability of former slaves to make the most of them, meant that the transition could be completed without major conflicts, which is probably one reason why it has been almost entirely ignored by local historiography.⁹³

The end of physical coercion mattered greatly for the path Uruguay's rural development would take thereafter. While social historians have emphasised the rise of vagrancy laws, the increased penalties for rustling cattle, the strengthening of the rural police, and the development of other legal tools to discipline the rural workforce from the 1850s to the 1870s, I do not think one could argue that these mechanisms were enough to water down the end of coercion.⁹⁴ When livestock herds started to recover after 1851, enslaved labour was no longer an option for medium or large producers, who had to focus on increasing the productivity of their abundant resource, leading to an increase in land values and ultimately to changes in tenure, notably the widespread physical definition of property rights over pastoral land for the first time in the country's history in the 1870s. For their part, crop farmers who wanted to achieve a certain scale had to rely increasingly on wage labour, as traditional systems of collaborative extra-familial labour (*agregados*) became increasingly rare after higher land prices pushed some family farmers off the land. The end of labour coercion was crucial in laying the groundwork for rural modernization: it came before—and contributed to shaping—substantial mid-century changes in the leading livestock sector, to which we now turn.

⁹² The emphasis in this literature is on the creation of a party system based on a divide between the capital and the hinterland, rather than 'the typical ideological split between conservatives and liberals over the church or free trade.' Fernando López-Alves, *State formation and democracy in Latin America, 1810-1900* (Durham, N.C ; London, 2000): 82-83. See also Gerardo Caetano, José Rilla, and Romeo Pérez, 'La partidocracia uruguaya. Historia y teoría de la centralidad de los partidos políticos,' *Cuadernos del CLAEH* 44, 4 (1987).

⁹³ Two recent exceptions, which also reflect on this historiographical neglect, are Alex Borucki, Karla Chagas, and Natalia Stalla, *Esclavitud y trabajo: un estudio sobre los afrodescendientes en la frontera uruguaya (1835-1855)* (Montevideo, 2004) and Ana Frega, Alex Borucki, Karla Chagas, and Natalia Stalla, 'Esclavitud y abolición en el Río de la Plata en tiempos de revolución y república,' in *La Ruta del Esclavo en el Río de la Plata: su historia y sus consecuencias* (Montevideo, 2005).

⁹⁴ For a long-term overview of vagrancy laws in Uruguay, see Laura Vecinday Garrido and Florencia Thul, 'Trabajo, pobreza y vagancia: Estrategias de control y coerción desde la colonia a nuestros días,' *Emancipação* 18, 2 (2018).

3 Changes in the land, 1850-1870

If changes to the status of the agricultural labour force took a long time to develop since the beginning of the end of colonial rule in 1811, patterns of land use in livestock agriculture were then transformed in less than twenty years by the fast recovery of cattle herds followed by the phenomenal rise of sheep-farming. These changes in the land affected almost all of Uruguay, with the exception of specialised crop-farming districts in Montevideo and Canelones, and laid the groundwork for the era of export-led growth under the First Globalization from the 1870s onwards. Economic historians of Uruguay have long known these to be pivotal shifts for the country's rural economy, but their broader implications for our understanding of 'land-abundant' development paths in the global periphery remain largely unexplored. If examined under that lens, this story could also give us a chance to engage with some influential contributions to social science theory (including economics) that have shaped economic and social historiography in Latin America and beyond. The rest of this chapter aims to make a first step towards such an interpretation, by taking an environmental approach to the causes behind these developments in livestock agriculture as well as their short- and long-term impact. In particular, the following pages consider how cattle and sheep interacted in the agricultural export economy, and aim to put modernization theory and 'vent-for-surplus' approaches to the test in the context of Uruguay's 'sheep revolution'.

3.1. Anatomy of a recovery

After the long cycle of independence and civil wars ended, Uruguayan cattle herds grew at an astonishing pace, from the low point of 2.5 million animals in 1852 to a new record of over 8 million by 1862.⁹⁵ The sector was environmentally primed for such a V-shaped recovery. Vast swathes of grassland had, by force of arms, been rested for the better part of a decade. Given ample food supplies and a series of consecutive years without any draughts, herds grew at a rate of over 20% per year. Fast-increasing cattle populations are often checked by disease in other contexts, but not in nineteenth-century Uruguay. Its extensively managed grazing lands, without winter stabling, made the spread of contagious illnesses much more difficult than in livestock systems which rely on animal confinement.⁹⁶ This was not only due to avoiding interactions in closed spaces which increase the chances of transmitting disease, but also because even when foraging outdoors the distance between a cow and its grazing neighbour increases with the scale of the groups, which

⁹⁵ Barrán and Nahum, *Historia Rural I*, 29; Eduardo Acevedo, *Anales históricos del Uruguay*, vol. III (Montevideo, 1933): 145.

⁹⁶ Contemporary cattle producers were well aware of this, as are, armed with much more comparative evidence, present-day life scientists; see, respectively, Domingo Ordoñana, 'La mentira de las epizootias', BN, *Revista de la Asociación Rural*, año VIII, n.1, 15 January 1879, 1-2; 'Zootecnia,' in *Pensamientos rurales sobre necesidades sociales y económicas de la República* (Montevideo, 1892), and Phillips, *Cattle Behaviour*.

were large in Uruguay's livestock sector.⁹⁷ Herds of 10 or 15 thousand cattle spontaneously divided themselves in grazing 'troops' of 'forty to one hundred' animals, in an orderly fashion which impressed Charles Darwin when he visited the country.⁹⁸

If these agricultural practices made fast recovery possible, they also placed an upper limit on the stock of cattle. As most paddocks were still unfenced, cows grazed with little human intervention beyond two weekly roundups, a method already well established in colonial times and discussed in that context in the previous chapter. While effective at keeping animals healthy with low labour costs, this system was extremely inefficient in its transformation of grass to protein. Cattle have well-defined foraging strategies, and will consistently choose to graze on more palatable grasses (tall, dense, dark-green pastures) if they are available, rather than making the most of every inch—including herbage close to their dung, which they prefer to avoid—before moving on to the next hectare, unless they are physically prevented from doing so.⁹⁹ Given that there were approximately 16 million hectares of available grassland in mid-nineteenth century Uruguay, and each animal needed up to two hectares under these conditions of unfenced grazing management, 8 million cattle was not only a record at the time, but also the environmental limit of that mode of ranching.¹⁰⁰

Despite their impressive reproductive performance over the 1850s, cows would see, for the first time in two centuries, their spotlight hogged by another animal. In the decade that followed the fast recovery of cattle herds, sheep populations soared to reach 20 million. Until then only a marginal presence in the Uruguayan countryside, by 1872 sheep outnumbered cattle for the first time—and have outnumbered them ever since.¹⁰¹ The triumph of sheep was also connected to New World political unrest, although not in South America. In the early 1860s the US Civil War drove up the international prices for textile fibres, and producers across Uruguay responded enthusiastically by adopting Merino sheep (mostly bred from imported French animals) on an immense scale.¹⁰² Wool exports rose from 4,700 tonnes in 1862 to over 19,100 tonnes in 1869, and would remain amongst the top two Uruguayan export commodities until the

⁹⁷ As discussed in more detail in the previous chapter, staying close together whilst feeding is an overriding concern for cattle, but larger groups keep more distance between each individual. M.I. Rind and Clive Phillips, 'The effects of group size on the ingestive and social behaviour of grazing dairy cows,' *Animal Science* 68, 4 (1999).

⁹⁸ Charles Darwin, *Journal of Researches into the Geology and Natural History of the Various Countries visited by HMS Beagle* (Cambridge, 2009[1840]): 170-71.

⁹⁹ Phillips, *Cattle Behaviour*, 127.

¹⁰⁰ José Pedro Barrán, *Apogeo y crisis del Uruguay pastoril y caudillesco, 1838-1875* (Montevideo, 1975): 69.

¹⁰¹ The wool boom started earlier, and developed more slowly, across the Plate in the Buenos Aires province, although Buenos Aires wool remained, according to European importers, of a lower quality than Uruguay's. The development of sheep farming also was a longer process in other comparable temperate, land-abundant economies, such as Australia and New Zealand. See Sábato, *Agrarian capitalism*; Barrán and Nahum, *Historia Rural I*, 174.

¹⁰² The seminal interpretation remains Barrán and Nahum's chapter 'The triumph of sheep' in the first volume of their Barrán and Nahum, *Historia Rural I*, 135-82, on which more below.

early twenty-first century.¹⁰³ While the recovery of cattle in the 1850s is seen by mainstream local historiography as the resurgence of the old, the ‘sheep revolution’ is depicted as the shock of the new.

3.2. Sheep, pioneers of modernization?

The conventional wisdom credits sheep with much. Besides the effects on growth of the well-documented export boom, the mainstream historiography argues that the expansion of sheep farming had far-reaching social and even psychological effects. In the book that in 1967 coined the term ‘sheep revolution’ and first published most of the quantitative measures of it, Barrán and Nahum argued that

the sheep eroded in the creole, bit by bit, his adventurous spirit and the lack of concern for his economic future that had characterised him until then. It ‘tied’ him to the land; and man, as shepherd or labourer, devoted himself to looking after it, he had to necessarily give up his traditional nomadism, settle in a place, look more favourably upon the prospect of starting a family, and reduce significantly the activities that brought unrest to the countryside: uprisings, rustling, banditry, etc.¹⁰⁴

Change, in this interpretation, had to come from the outside in a double sense: the demand for wool was external, fuelled by European textile factories; and the people in Uruguay who responded to it were also outsiders—entrepreneurial migrants (Basque, British, French, German) who formed a ‘small middle class’ of sheep farmers.¹⁰⁵ In Barrán and Nahum’s view, which remains the core of the conventional wisdom on the subject, the culture of Uruguayan rural people was hostile to accumulation and constituted an obstacle to rational market-responsiveness.¹⁰⁶ Against that background, the adoption of sheep-raising ‘implied framing the creole within a more modern social system, with different objectives, predominantly aimed towards production and the attainment of economic goals, [a system] which was *essentially* alien to the traditional creole community and mentality’ (my italics).¹⁰⁷ While at first sight innocent of all theoretical discussion,

¹⁰³ Millot and Bertino, *Historia económica*, 48; María Inés Moraes, *La pradera perdida: historia y economía del agro uruguayo. Una visión de largo plazo, 1760-1970* (Montevideo, 2008): 128-31.

¹⁰⁴ ‘La oveja le fue royendo al criollo poco a poco el espíritu aventurero y despreocupado por su futuro económico que lo había caracterizado hasta entonces. Lo “ató” al suelo; y el hombre como pastor-puestero o peón, se dedicó a cuidarlo, debió renunciar necesariamente a su tradicional nomadismo, afincarse en un lugar, mirar con mejor disposición la perspectiva de formar familia, y reducir en grado notorio las actividades que traían intranquilidad a la campaña: alzamientos, abigeo, matreraje, etc.’ Barrán and Nahum, *Historia Rural I*, 169.

¹⁰⁵ Barrán and Nahum, ‘Rural History’, 661.

¹⁰⁶ For a critical balance of *Historia Rural del Uruguay Moderno* and its dominant influence on Uruguayan historical and social-science scholarship, see Moraes, ‘Más que historia.’

¹⁰⁷ ‘implicaba el encuadramiento del criollo dentro de un sistema social más moderno, con otra finalidad, predominantemente dirigido hacia la producción y la obtención de objetivos económicos, que era esencialmente ajeno a la comunidad y la mentalidad criollas tradicionales.’ Barrán and Nahum, *Historia Rural I*, 170.

this influential interpretation was implicitly shaped by modernization theory: the notion that historical development hinges on the transformation of a ‘traditional’ society into a ‘modern’ one—the former defined by ‘an economic system run on non-economic motives’, where barter is moulded only by custom and command; the latter an unprecedented nineteenth-century invention, signalled by a self-regulating economic life, where production and exchange are organised under market mechanisms.¹⁰⁸ Perhaps unknowingly, Barrán and Nahum’s account also takes up the substantivist position that anchors modernization theory in space as well as time, claiming that the rational, profit-maximizing, economic behaviour that characterises ‘modern’ society was a specific cultural construct which was essentially alien to societies outside Europe, at least until Europeans forced their way in and imposed the market economy upon them.¹⁰⁹

Whereas Hopkins claims that modernization theory is ‘no longer even a distant memory for scholars today’, and substantivist interpretations have been relentlessly falsified in a range of historical contexts in Asia, Africa, and Latin America,¹¹⁰ I would argue their influence is still felt in a way rather more subtle through the persistence of some key assumptions. In global economic history, the dominant institutionalist literature is increasingly focusing on long-term ‘cultural traits’ in order to explain why ‘good’ economic institutions were adopted in some places and not in others, setting societies in a path of ‘historical persistence’—an argument with more than a hint of modernization theory.¹¹¹ Within Latin American economic history, modernization theory is still present not least in the default historiographical divide that starkly separates the history of the continent before and after c.1870 as ‘pre-modern’ and ‘modern’, and which this dissertation, with its unusual periodization, deliberately traverses. Given its continued influence, let me briefly consider the merits of the modernization theory argument as it concerns the transformation of ‘traditional’ creole mentalities and communities during the ‘sheep revolution’ in early Uruguay.

The standard of the evidence Barrán and Nahum offer in support of this characterization of rural society is considerably less robust than their admirable reconstruction of the materiality of sheep farming itself and its impact on the export economy. The proof of the supposed modernization of the ‘mental habits’ of Uruguay’s rural population following the ‘sheep revolution’ rests solely on contemporary comment, mostly

¹⁰⁸ The most articulate and influential version of this thesis is Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston, 2001[1944]); the quotation above is from page 48.

¹⁰⁹ *Ibid.*, 166-67.

¹¹⁰ A. G. Hopkins, *An Economic History of West Africa*, second edition (London, 2020): 5-6. For an overview of the economic history research that buried the central claims of *The Great Transformation* at least within the discipline itself, see Gareth Austin, ‘The Problem of “Embeddedness” and Global Economic History’, *Third Global Economic History Network Conference* (2004).

¹¹¹ For a survey of this literature by one of its pivotal authors, see Nathan Nunn, ‘Historical Development’, in *Handbook of Economic Growth*, ed. Philippe Aghion and Steven N. Durlauf (Amsterdam, 2014). The use of World Value Surveys as a way to ‘measure’ cultural differences to then trace them back into history is particularly emblematic of this trend, while the idea of ‘good’ economic institutions is itself heavily value-laden. For a discussion of this literature from the perspective of Latin American economic history, see Chapter 1 of this dissertation.

by British observers ‘whose opinion is especially relevant because it comes from a foreigner’ (sic).¹¹² John McColl, a Scotsman who became a successful rancher in Uruguay as well as a prolific writer, is cited more than any other: ‘foremost in the list of civilizing agents, sheep farming is destined to exert a powerful influence. The gaucho is already our most steady shepherd’ as ‘he is rapidly being weaned from his wandering habits, and made a useful member of society.’¹¹³ To be sure, similar opinions were also to be found among the Uruguayan elite. A large Uruguayan landowner writing in 1891 and looking back on the achievements of the ‘sheep revolution’ was thrilled to announce that ‘we take part in the English axiom that sheep are the great universal settler. Thus we see Australia, New Zealand, the Cape of Good Hope, and even the River Plate modify their savage habits.’¹¹⁴

The evidence of contemporary comment is certainly valid, but it must be assessed systematically or used in conjunction with other, independent sources, not least because it is always possible to find quotations—even by the same people—supporting the opposite conclusion, namely that rural folk in Uruguay were very much concerned with the attainment of economic goals. Here is, for instance, the very same John McColl writing about Uruguayan ranching techniques: ‘the gauchos evidently had well studied the nature of the animal when they invented the plan now pursued for working cattle and subjecting them to the dominion of man. It has never been improved by the numerous foreigners who have turned their attention to the breeding of cattle, so that we may conjecture it to be the system best suited to the country.’¹¹⁵ But merely stacking quotation upon quotation cannot settle the issue. Even if we managed to ascertain which position predominated, the fact that contemporary elites, foreign or local, thought something was true does not make it so. It is after all unsurprising that elites thought that working people valued leisure over consumption or had no interest in accumulation; in fact, I believe it would be a reasonable hypothesis for sociological research that many in the Uruguayan elite continue to think that to this day. All in all, if modernization theory was on trial on the matter of Uruguay’s ‘sheep revolution’, a handful of selected quotations from elite men are not the strongest witnesses for the defence.

Let me briefly introduce two testimonies for the prosecution. First to the stand is the structure of rural households in the wake of independence, decades before the ‘sheep revolution’. As Table 3.1 showed, the rural economy of early Uruguay was not based on the ‘adventurous spirit’ of semi-nomadic, individualistic men on horseback, but on family farming and on livestock agriculture reliant to a large extent on extra-familial labour obtained through markets, with silver or gold being paid for labour time and, before the 1850s, also for labourers in the case of enslaved workers. Our large sample of individual listings shows, if

¹¹² ‘y su opinión tiene especial relevancia por venir de un extranjero’ Barrán and Nahum, *Historia Rural I*, 169, 72

¹¹³ John McColl, *Life in the River Plate* (London, 1862): 59.

¹¹⁴ ‘participamos del axioma inglés de que la oveja es el gran colonizador universal. Así vemos a la Australia, Nueva Zelandia, El Cabo de Buena Esperanza y el Río de la Plata mismo modificar sus hábitos salvajes’ BN, *Revista de la Asociación Rural*, n.8, 30 April 1891, 174.

¹¹⁵ McColl, *Life in the River Plate*, 52.

nothing else, that rural people were not idly waiting for a small entrepreneurial class of sheep farmers to appear in order to settle down and discover the benefit of following price signals. As the previous chapter argued in colonial context, the ‘nomadic’ livelihoods and ‘archaic’ economic values of rural people in the region have been overstated by mainstream historiography. If we acknowledge that most creole ‘gauchos’ had long been in fact peasants whose families had access to land, settled there, and engaged in market-oriented as well as subsistence agriculture, then the *mission civilisatrice* of sheep appears much less formidable. My second witness are sheep numbers themselves: if the adoption of the Merino was so rapid and enthusiastic across Uruguay that in ten years almost all provinces—including those with few foreign producers—had at least half a million sheep more than before, then rural creole culture was not insensitive to economic opportunity in the first place.¹¹⁶ Therefore, the new wool economy did not bring about the cultural modernization of the Uruguayan countryside in the sense of encouraging a new economic rationality, either substantially different or more dominant over cultural preferences than it had been before.

This is different from a more concrete and everyday sense of modernization as a set of material conditions for expanded capital accumulation or physical infrastructure—what Uruguayan political discourse thought of in the nineteenth century as ‘progress’ and now calls ‘development.’¹¹⁷ And in this sense, the ‘sheep revolution’ certainly did make major contributions. Sheep are, first of all, capital goods in their own right, and their joint exploitation with cattle allowed many producers (mid-sized as well as big) to effectively capitalise and up-scale their ranches by substantially increasing their stocking density (i.e. livestock units in a given grazing area).¹¹⁸ Secondly, wool offered another pastoral ‘cash-crop’ for Uruguay’s export economy and for the Uruguayan state to tax, overcoming a long-standing dependence on leather and salted beef and thereby strengthening the prospects for sustained growth.¹¹⁹ Third, because sheep farming required more labour than cattle-raising, the ‘sheep revolution’ also created new economic opportunities in the countryside as well as new occupations (notably shearers), and so encouraged immigration flows which made Uruguay’s tiny population the fastest-growing in Latin America.¹²⁰ Fourth, sheep made marginal drylands in the north and north-east increasingly valuable, and hence laid the groundwork for the transport infrastructure that came in the following decades: wool freights became crucial for the bottom line of railway companies, and without them the network, one of the densest in Latin America by any measure, would have

¹¹⁶ Estimates of variation in livestock herd composition at the province level are presented in Graph 3.3. below.

¹¹⁷ I am aware that these terms, like ‘modernization’ itself, are political constructs and have a history of their own, but I would argue they still have a concrete material grounding. An excursion into the growing sub-field of Uruguayan conceptual history falls beyond the scope of this dissertation, but see Gerardo Caetano, ed. *Historia conceptual. Voces y conceptos de la política oriental (1750-1870)* (Montevideo, 2013); Gerardo Caetano, *La república batllista* (Montevideo, 2013).

¹¹⁸ Moraes, ‘Capitalismo pastor’, 21.

¹¹⁹ Barrán and Nahum, *Agricultura*, 185-87.

¹²⁰ On the changes in work routines and employment opportunities, see the succinct but insightful analysis by Millot and Bertino, *Historia económica*, 50-53. On Uruguayan population growth in this period in Latin American context, see Sánchez-Albornoz, ‘Population’, 123-24.

been considerably less extensive than it was.¹²¹ And finally, wool production created a limited but still substantial demand for modern machinery (such as mechanical shearers) as well as linkages for the development of Uruguay's light manufacturing industry in the early-twentieth century.¹²²

The 'sheep revolution', therefore, contributed decisively to the development of rural capitalism, as explicitly argued in the 1990s by Millot and Bertino, revising Barrán and Nahum's interpretation.¹²³ However, I would argue this was less because with sheep-raising 'the market economy advanced over the subsistence economy', but rather because it made agricultural land (and especially less fertile pastures) much more valuable.¹²⁴ If the demise of slavery charted in the previous section laid the groundwork for the labour market of the late-nineteenth century, the 'sheep revolution' expanded the geographical reach of the capitalist land market and created new incentives to physically define property rights over grazing land and not just over the animals standing on it.

3.3. 'Vent-for-surplus', short-term trade-offs, and long-term legacy

For such an impressive economic transformation, Uruguay's 'sheep revolution' has been remarkably under-theorised, even if, as we just saw, there are many unacknowledged assumptions behind its mainstream interpretation. The exception is the work by María Inés Moraes which uses the concept of 'technological trajectory', drawn from evolutionary economics, to explain the rise of sheep farming in connection to later agricultural innovations on Uruguay's grasslands: the wire-fencing of paddocks in the 1870s and the crossbreeding of cattle since the mid-1880s, which the next chapter explores in detail.¹²⁵ Moraes estimated

¹²¹ As late as 1910, wool represented more than half of the total cargo loaded in almost 20% of Uruguayan railway stations. This and other calculations based on the returns of railway companies are presented in the next chapter. I published an earlier version in Emiliano Travieso, 'Railroads and Regional Economies in Uruguay, c. 1910,' *RUHE* VII, 12 (2017).

¹²² Chapter 5 discusses the prospects and limits of structural change and light industrialization in Uruguay during the First Globalization. On the historical development of Uruguay's woollen textile industry, see María Camou and Silvana Maubrigades, 'The evolution of the Uruguayan textile industry,' in *The Ashgate Companion to the History of Textile Workers, 1650-2000*, ed. Lex Heerma van Voss, Els Hiemstra-Kuperus, and Elise van Nederveen Meerkerk (Farnham, 2010).

¹²³ Millot and Bertino, *Historia económica*, 48-55. In fact, Barrán and Nahum themselves acknowledged, elsewhere in the same volume cited above, that the sheep revolution 'had all the characteristics of the classical 'booms' observed in capitalist economies.' ('Lo que hemos llamado el triunfo del ovino en la década del 60 tuvo todas las características de los "booms" clásicos de las economías capitalistas ya maduras.') Barrán and Nahum, *Historia Rural I*, 259.

¹²⁴ 'La economía mercantil avanzó sobre la de subsistencia.' Millot and Bertino, *Historia económica*, 54. Rising land prices were carefully documented by Barrán and Nahum: they preceded the expansion of sheep but were sustained by them after the initial boom following the recovery of cattle herds in the 1850s. See Lynch, 'River Plate', 663; José Pedro Barrán and Benjamín Nahum, *Historia Rural del Uruguay Moderno. Tomo II: La crisis económica, 1886-1894* (Montevideo, 1971): 637; *Historia social de las revoluciones de 1897 y 1904* (Montevideo, 1972): 467; *La civilización ganadera bajo Batlle (1905-1914)* (Montevideo, 1977): 429.

¹²⁵ Moraes, *Pradera*, 85-96. The seminal article on technological trajectories within the sub-field of evolutionary economics is Giovanni Dosi, 'Technological Paradigms and Technological Trajectories: A Suggested Interpretation of the Determinants and Directions of Technical Change,' *Research Policy* 11, 3 (1982).

that total factor productivity in Uruguayan pastoral agriculture between 1870 and 1913 grew considerably faster than in Argentina, Canada or the United States, and argued that the technical innovations which made that possible had started earlier, with the large-scale adoption of Merino sheep in the 1860s and, in particular, the development of mixed grazing (i.e. cows and sheep being raised together on the same plots of land).¹²⁶

More recently, and despite the fact that Moraes's estimates of rising productivity remain uncontested, several works in the specialist scholarship have pointed at the 'vent-for-surplus' (VFS) model to explain Uruguay's export-led growth, starting with the 'sheep revolution', and used it as a stepping stone for their arguments.¹²⁷ The VFS approach was developed by Hla Myint from his reading of Adam Smith's intuition that the export economy can contribute to development in two ways: through encouraging productivity increases (resulting from a greater division of labour), and, alternatively, providing a 'vent' for the produce of surplus land and labour that were idle before the opening of trade because of the narrowness of the domestic market.¹²⁸ Since Myint's seminal article, development economists have formalised different versions of VFS to explain or evaluate processes of fast agricultural change in developing regions driven by external demand.¹²⁹ While it would be difficult to claim that 'vent-for-surplus' applies in its strongest sense to late-nineteenth century Uruguay—because that would need both surplus land *and* labour, and the latter was in short supply to begin with—there is an argument to be made that it applied to land. In the comparative literature, Uruguay has been, like neighbouring Argentina, held up as an example of a Latin American path of development 'locked into a natural resource "vent-for-surplus."¹³⁰ Therefore, and even if no study has systematically examined to what extent VFS fits Uruguay's 'sheep revolution' (or the country's export-led growth in the late-nineteenth and early-twentieth centuries more generally), the theory could eventually be declared the winner by default. Let us consider it more carefully.

¹²⁶ Moraes, 'Capitalismo pastor', 19.

¹²⁷ Henry Willebald, 'Are institutions the whole story? Frontier expansion, land quality and ownership rights in the River Plate, 1850-1920,' in *Agricultural Transformation in a Global History Perspective*, ed. Ellen Hillbom and Patrick Svensson (London, 2013); Luis Bértola and Gabriel Porcile, 'Cambio estructural y crecimiento en el Río de la Plata y Australasia,' in *Primos ricos y empobrecidos: crecimiento, distribución del ingreso e instituciones en Australia-Nueva Zelanda vs Argentina-Uruguay*, ed. Jorge Álvarez, Luis Bértola, and Gabriel Porcile (Montevideo, 2007); Henry Willebald and Javier Juambeltz, 'Land frontier expansion in settler economies, 1830-1950: was it a Ricardian process?,' in *Agricultural Development in the World Periphery. A Global Economic History Approach*, ed. Vicente Pinilla and Henry Willebald (2018); Sandomato and Willebald, 'Natural Capital'.

¹²⁸ Hla Myint, 'The "Classical Theory" of International Trade and the Underdeveloped Countries,' *The Economic Journal* 68, 270 (1958).

¹²⁹ See the references given in Gareth Austin, 'Explaining and Evaluating the Cash Crop Revolution in the "Peasant" Colonies of Tropical Africa, ca. 1890-ca.1930: Beyond "Vent for Surplus"', in *Africa's Development in Historical Perspective*, ed. Emmanuel K. Akyeampong, et al. (New York, 2014).

¹³⁰ Cristóbal Kay, 'Why East Asia overtook Latin America: agrarian reform, industrialisation and development,' *Third World Quarterly* 23, 6 (2002).

An expansion of export agriculture is accomplished, in the ‘natural resource’ version of VFS, by bringing previously idle land into production. This is distinct from reallocating existing agricultural land to more profitable use in that there are no trade-offs: the expansion of the ‘endogenous land frontier’ shifts the limits of the production function, without the opportunity costs which would result from diverting resources from other activities.¹³¹ I think this is a falsifiable proposition in the case of Uruguay’s wool boom: if the rapid expansion of sheep in the 1860s was fundamentally a ‘vent’ for the produce of surplus land, then there should have been no trade-offs in terms of available pasture for other livestock. Graph 3.3 shows this was not the case across much of Uruguay, particularly in the provinces with the better soils for fast grass growth, proxied by their long-term suitability for rain-fed, low-input agriculture.

Provinces under the dotted line in Graph 3.3 saw a *decrease* in their stock of cattle over the 1860s, even if in the cases which led the wool boom, such as Colonia and San José, the growth in the stock of sheep more than compensated for it in the total of livestock available. Because sheep and cattle get along well on the grazing range (sheep give way to cows), have different foraging preferences (short and long grasses respectively), and do not mind eating near the other species’ dung, they are often thought as complementary in mixed grazing systems.¹³² But there are limits to that complementarity, because both species ultimately consume the same finite (albeit renewable) resource, and trade-offs do emerge in environmental settings which, like large parts of Uruguay, can profitably accommodate both species. Adopting mixed grazing also entailed taking on new managerial challenges and risks, as raising an animal one has not worked with before is a process of trial and error, especially so when it implies finding the right balance between species.¹³³ Getting the herd composition wrong can lead to over-production (weaning too many calves and lambs), resulting in weak animals which amounts not only to the ranching equivalent of a bad harvest but also to continued capital losses, as poorly fed cows and ewes have a much higher chance of suffering pregnancy losses. The province of Florida became notorious for this in the late 1860s, as our evidence demonstrates in Graph 3.3. In the words of Florida’s top government official, the origin of these losses were ‘immediately linked to the *poor quality of the grasses*, which, born too late, have not yet acquired the maturity necessary for nourishment’ (his emphasis).¹³⁴ Increased animal competition for resources within the estancias (especially forage but also drinking water and preferred spots to rest) was intensified in the winter, when grass growth was slower and overgrazing prevented it from reaching maturity. A committee of experts appointed by the Uruguayan Rural Association in response to a government request concluded that it was

¹³¹ A recent, formalized version of such a model can be found in Ronald Findlay and Mats Lundahl, ‘Natural Resources, “Vent-for-Surplus” and the Staples Theory’, in *The Economics of the Frontier*, ed. Ronald Findlay and Mats Lundahl (London, 2017).

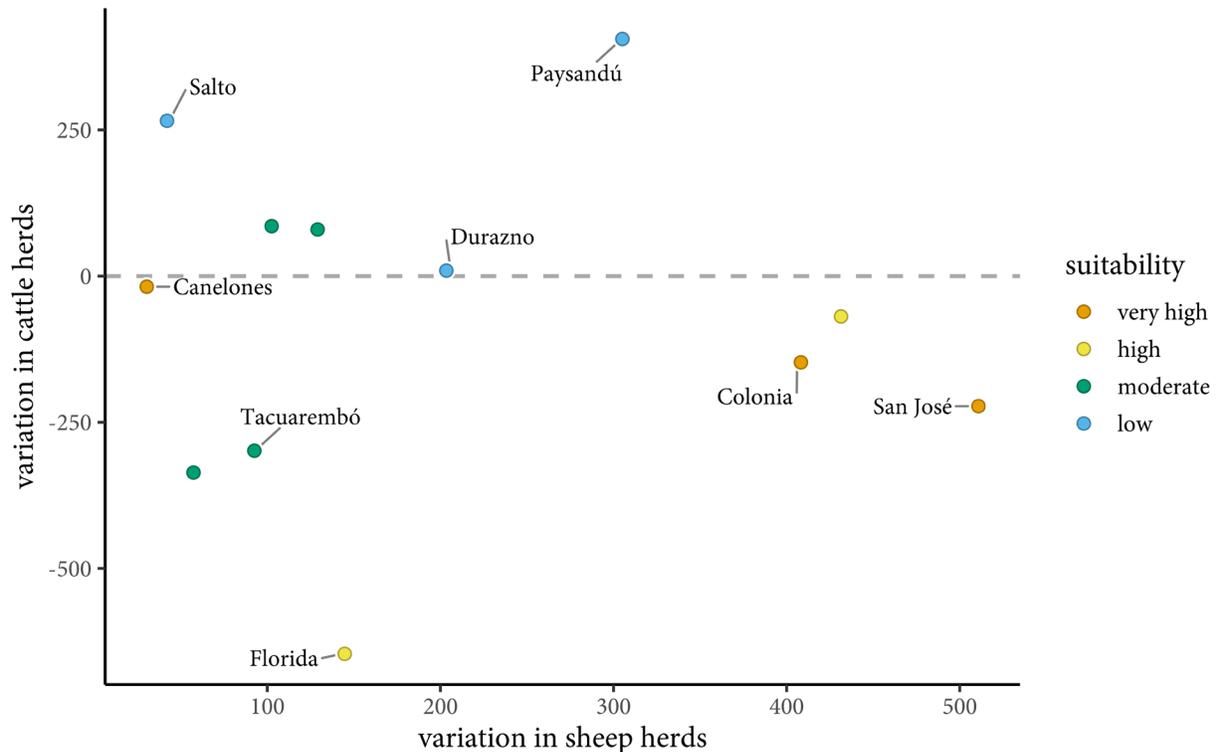
¹³² Phillips, *Cattle Behaviour*, 103-04.

¹³³ Barrán and Nahum, *Crisis*, 13-80.

¹³⁴ ‘el origen de la enfermedad se halla inmediatamente ligado con *la mala calidad de los pastos* que nacidos estemporáneamente, no han adquirido el estado de sazónamiento y madurez necesarios para la alimentación’. BN, *Revista de la Asociación Rural*, n.63, 15 July 1875, 968.

the effect such competition had on pastures, and not any sort of diseases transmitted from sheep to cattle or within cattle herds themselves, which was to blame for a reduction in the stock of cattle across most of the Uruguayan countryside.¹³⁵

GRAPH 3.3. Was the 'sheep revolution' a vent for surplus land?
Variation in sheep and cattle in 1862-1872 by province (in thousands of livestock units)
Provinces classified by their estimated suitability for rainfed, low-input agriculture



Notes: Montevideo (with very few livestock) is excluded and some provinces are not labelled to prevent overcrowding in the figure. Conversion of sheep and cattle to livestock units based on feed requirements, following the coefficient developed by INIA, *Revisión* for Uruguayan agriculture (1 sheep = 0.15 cow). Suitability refers to the average suitability of soils for rainfed, low input agriculture based on the FAO-GAEZ index (1960-1990): 'low' = mean suitability index below 50; 'moderate' between 50 and 63, 'high' between 63 and 75, 'very high' above 75.

Sources: livestock by province: for 1862 from Acevedo, *Anales* III, 145; for 1872 calculated from national totals taken from Vaillant, *El Uruguay*, 162, and allocated to provinces according to the tax returns published in Acevedo, *Anales* III, 723. Data on suitability for rainfed low-input agriculture taken from FAO-GAEZ (Fischer et al., *Global Agro-ecological Zones*) and average for each province calculated using ArcGIS zonal statistics tool.

¹³⁵ BN, *Revista de la Asociación Rural*, n.51, 15 January 1875, 706-708.

Looking above the dotted line in Graph 3.3, the provinces which saw a growth in the stock of both species over the 1860s were those with areas of less fertile soils where natural grass growth was not enough to sustain large cattle herds, such as Paysandú and Durazno. Therefore, it seems that while sheep could graze on marginal land in some places, their presence in the countryside was not without its trade-offs across much of Uruguay. The only province with extremely fertile soils which did not see a significant shift away from cattle as a result of the adoption of sheep was Canelones, the largest cereal and vegetable producer, an exceptional region where cattle-raising was already marginal before the ‘sheep revolution’.

The wool boom could only be accomplished by reallocating pastureland to the benefit of sheep, which came with an opportunity cost for cattle-raising, traditionally the leading branch of Uruguay’s livestock agriculture. The expansion in wool output was led by regions where pastures were already commercially grazed, as shown by the trade-offs in the stock of cattle and sheep. Even if the ‘sheep revolution’ occurred with very limited technological change, it relied less on the expansion of an endogenous land frontier than on a reallocation of resources to allow for specialization in a new animal and a new commodity in response to the demands of external markets. In this sense, and going back to the Smithian origins of vent-for-surplus, it was more a case of external demand for wool encouraging Uruguay’s rural economy ‘to improve its productive powers’ rather than just giving ‘value to its superfluities’.¹³⁶ There was still some surplus land from the perspective of market-oriented livestock production in 1860 (though not nearly as much as in other settler economies at the time), but it was not enough to bring about a ‘sheep revolution’.

Notwithstanding its trade-offs, then, the wool boom implied an extraordinary aggregate increase in rural assets, to the tune of about 1.5 million livestock units. It also provided individual producers, and the economy as a whole, with a new annual ‘cash-crop’ and offered much-needed insurance against extreme climate events: while temperate-zone cows (*Bos taurus*) tolerate excess rain much better than dry spells, sheep are very resilient to droughts. But diversification and insurance came at a cost. Since the 1860s, Uruguay’s rural economy needed to sustain two species, rather than only one, to produce its two major export commodities. This was not the case in other small successful livestock economies, such as New Zealand, which obtained its two top export staples from the same animal.¹³⁷

Anthropogenic pressure on land, therefore, increased significantly: the wool boom was responsible for the largest and most durable intensification of human land use in Uruguay’s long-nineteenth century. It was accomplished on extensive as well as intensive fronts. In much of the north, notably the provinces of Paysandú and Salto, the area under constant grazing was expanded; in south-western Colonia and San José more livestock units were raised per unit of agricultural land. The result was a much higher stocking density overall: according to Moraes’s estimates, while Uruguayan pastures had, by 1862, a rate of about 0.6 livestock

¹³⁶ Smith, *Wealth of Nations*, 582.

¹³⁷ Travieso, ‘United by grass’, 273.

units per hectare, by 1872 it had raised to 0.9.¹³⁸ That trend became a secular one and the ‘sheep revolution’ revealed itself, in hindsight, as a structural transformation, not a mere conjuncture produced by high international prices for wool. Its impacts can now be traced in the long-term ecological record and are visible in the present-day landscape. Life scientists have shown that the introduction of sheep and, with them, a new grazing regime induced ‘prairie regression’—the third and (at least until now) final stage in the evolution of the Uruguayan grasslands, characterised by a loss of soil biological productivity and a series of floristic changes resulting in an increase in the proportion of non-grass plant species in the sward.¹³⁹

4 Conclusion

As late as 1836, two decades after the Spanish were defeated, a fifth of Uruguay’s agricultural workforce was enslaved. Livestock farming remained, as in the late-colonial period, dominated by cattle; the export economy still depended solely on leather, jerky, and tallow. By 1870 rural slavery had disappeared and cows now had to share the grassland with over twenty million sheep, who made wool a mainstay of Uruguay’s agricultural export economy. These two economic and social transformations redefined the opportunities and the limits for productive strategies in rural Uruguay, and they did so at a critical historical juncture, just in time before the late-nineteenth century boom in the terms of trade for agricultural commodities. Unless we overthink the issues at play, it seems also clear that these were fundamentally positive changes from the point of view of long-term development, both in the sense of an expansion of productive forces and of human welfare. The decades that ushered in such transformations cannot be seen in any meaningful way as ‘lost time’ for economic development or for economic historians.

Besides using Uruguay’s example to challenge the ‘lost decades’ thesis in relation to Latin American economic history, this chapter has aimed to make two contributions to the specialist literature on Uruguayan long-term rural development. First, it relied on a set of newly transcribed enumerators’ books to establish the scale and characteristics of rural slavery and emancipation in early-independent Uruguay. The volatile social and political context was also explored in some detail, especially when accounting for the cautious policy towards slavery that characterised political leaders from the start of the independence revolution (1811) to the end of the ‘Great Civil War’ (1851). Second, it reassessed the historical evidence for the 1860s ‘sheep revolution’ to test two approaches from social science theory which have been implicitly or explicitly

¹³⁸ María Inés Moraes, ‘Las determinantes tecnológicas e institucionales del desempeño ganadero en el largo plazo, 1870-1970’ (Universidad de la República, 2001), 55. One livestock unit equals the feeding requirements of an adult cow.

¹³⁹ Daniel Panario and Mario Bidegain, ‘Climate change effects on grasslands in Uruguay,’ *Climate Research* (1997): 39; M Oosterheld, OE Sala, and SJ McNaughton, ‘Effect of animal husbandry on herbivore-carrying capacity at a regional scale,’ *Nature* 356, 6366 (1992); Paruelo et al., ‘Grasslands,’ 244-45. To gain a layman’s understanding of the main message from this specialist life sciences literature, I relied on definitions presented in S.P. Cuttle, ‘Impacts of Pastoral Grazing on Soil Quality,’ in *Environmental Impacts of Pasture-based Farming*, ed. Richard W. McDowell (Wallingford, 2009),

used to explain it: ‘modernization theory’ and ‘vent-for-surplus.’ Environmental trade-offs in particular were brought into focus, emphasising the limits to the complementarity of cattle and sheep in low-input, extensively managed grazing.

While Uruguayan historiography has long acknowledged the far-reaching impacts of the ‘sheep revolution,’ the conventional wisdom is very much mistaken in thinking of it as ‘the first change to the economic structure of the countryside since the colonial period.’¹⁴⁰ The slow and unsteady process of emancipation, led by the economic initiative and military involvement of slaves and former slaves themselves, came before the wool boom and was as structural a change can be. Uruguay’s modern export agriculture was built upon free labour as well as mixed grazing, and both those systems prevailed against their alternatives during the so-called ‘lost decades.’ Thinking about the causal connections between those two processes, while bearing in mind their different chronology, remains a task for future research.



¹⁴⁰ ‘el afianzamiento de la explotación del ovino significó la primera modificación de la estructura económica rural desde el coloniaje.’ Barrán and Nahum, *Historia Rural I*, 165.

Part II | A New Country on Old Pastures, 1870s-1913

As export-led growth took off in most of Latin America in the 1870s, the livestock economy remained Uruguay's growth engine. On the backs of rising prices for beef and wool—lucky tickets in the 'commodity lottery' of the day—real wages in Uruguay (and Argentina) were, in 1913, three times higher than in Mediterranean Europe.¹ Immigrants from across the Atlantic showed up in numbers: relative to the population, more than in the United States.² Canned and frozen beef overtook cowhides and jerky as export staples, signalling both the successful transition from 'pre-modern' to industrial livestock production and the continued dependence on agricultural exports. Despite fast technological change in some key industries and large-scale immigration concentrated in towns, Uruguay remained a predominantly rural society and agriculture still employed more people than any other sector. A new country in many ways, its comparative advantage remained tied to the soils of the natural grasslands, which were by then already becoming degraded.

While Montevideo became a cosmopolitan city, redrawn with electricity and coal (trams and streetlights, cranes and steamships),³ the countryside was also bustling with change, perhaps less spectacular but just as consequential. The traditional technology of property rights, branding livestock or notching their ears, continued to be widely used, but now the land on which the animals stood was also increasingly marked. Imported steel wire was the tool of the enclosures that in the 1870s physically divided agricultural land in Uruguay (as it still does). Land became economically more valuable and institutionally less accessible, reshaping the ways capital could be profitably invested and the opportunities available for labour. The two following chapters deal with this period, and its new 'spatial code' for rural development, in a thematic rather than chronological fashion. Chapter 4 focuses on landholding and technical innovation, exploiting regional variation in cattle crossbreeding rates to take up the long-running debate about the role of latifundia in the development of Latin American agrarian capitalism. Chapter 5 reconstructs the world of work from census and birth records' data, and uses its new workforce estimates to discuss the nature of and the limits to rural-based economic development in Uruguay in the late-nineteenth and early-twentieth century.

¹ Jeffrey G Williamson, 'Real wages, inequality and globalization in Latin America before 1940,' *RHE* 17, S1 (1999).

² Blanca Sánchez Alonso, 'The other Europeans: immigration into Latin America and the international labour market (1870–1930),' *RHE* 25, 3 (2007).

³ Alfonso Labraga, Mario Núñez, Ana María Rodríguez Ayçaguer, and Esther Ruiz, *Energía y política en el Uruguay del siglo XX. Tomo I: del carbon al petróleo* (Montevideo, 1991): 35; BN, Sala Uruguay, 10he5478.m7.t.8.1900, Junta Económico-Administrativa de Montevideo, *La tracción eléctrica. Discusión y negociado de la concesión otorgada*, Montevideo: Imprenta a vapor de la Nación, 1900.

chapter four

Latifundia and Agricultural Innovation in the First Globalization *

The idea that latifundia (very large, privately owned agricultural landholdings) dominated the Latin American countryside and stifled its development ever since colonial times was widespread in history and the social sciences in the 1960s and 1970s, and has since been rekindled by the new institutional economics and, more recently, ‘path dependence’ literatures.¹ Economic historians have done much in recent years to question the perception of a long-term, persistent pattern of concentrated land tenure in the continent stretching back to the colonial period, stressing variation in ownership structures across Latin America and changes to asset inequality through time.² But while the global debate on the impacts of large estates on agricultural productivity and innovation extends to other world regions as well, latifundia remain strongly associated with Latin America’s economic past in popular historical imagination.³

However, as we have seen in Chapter 2, latifundia were not an overwhelming force in late-colonial Uruguay, as most free people could access a plot of their own. We encountered them again in Chapter 3, when the livestock sector recovered from the cycle of civil wars and was transformed by the ‘sheep revolution’ in the context of the slow demise of slavery. Access to land was becoming more restricted then, and very extensive estates started to loom larger. During the First Globalization, when tenant farmers first outnumbered peasants as Chapter 5 will show, large landowners in Uruguay became richer and more

* A shorter version of this chapter is in R&R with the *Economic History Review*. I thank the two anonymous reviewers for their many useful suggestions and Giovanni Federico, editor in charge of the manuscript, for his insightful comments. I published an earlier version of the railway data presented in Map 4.1 during the first year of my PhD (Travieso, ‘Railroads’) so I would also like to thank *RUHE*’s anonymous reviewers and its editor, Henry Willebald, for their suggestions.

¹ These strands of literature were critically surveyed in Chapter 1. For a summary of the scholarship on latifundia as the root of the relative backwardness of Latin American agriculture, see Marc Edelman, *The Logic of the Latifundio: The Large Estates of Northwestern Costa Rica Since the Late Nineteenth Century* (Stanford, 1992): 3-23.

² For an overview, see Bértola and Ocampo, *Economic Development*, 111-23. For an example of the new quantitative estimates on long-term inequality in Latin America, see Arroyo Abad, ‘Persistent inequality?’.

³ The first definition of ‘latifundia’ in the *Oxford English Dictionary* distils the image: ‘large farms, large plantations in Latin America.’ For an insightful assessment of the global debate on latifundia and economic development, see Giovanni Federico, *Feeding the World: An Economic History of Agriculture, 1800-2000* (Princeton, 2005): 136-42.

powerful than ever before. In times and places in Latin American history such as this one where latifundia did dominate the landscape, questions on their consequences for economic development are still difficult to answer. The conventional wisdom that haciendas (as they mostly were known in Mexico, Central America, and northern and Pacific-coast South America), *fazendas* (in Brazil), and estancias (in the River Plate) were defined by an inherently irrational and inefficient allocation of resources has been disproven by microeconomic studies which have shown them to be responsive to market opportunities, but their overall impact on technical progress and long-term development remains elusive.⁴ Were latifundia obstacles to agrarian capitalism or main sites for its development? Did they strengthen or limit the productivity of agriculture and its ability to adopt key innovations?

Economic historians have long debated the part played by latifundia in Latin American development, particularly during periods of ‘transition to capitalism’ or ‘modernization’. Exploiting cross-sectional variation across Uruguayan rural districts in the First Globalization, this chapter maps and measures the effects of farm sizes on innovation in a small and relatively prosperous agricultural export economy dominated by livestock production. The results suggest that, where their environments proved equally favourable, areas with different landholding patterns improved the genetic makeup of their cattle herds at similar rates: latifundia were not, as a rule, any more or less likely to invest in agricultural innovation. Farm sizes did correlate negatively with output per acre, as predicted by the ‘inverse relationship’ thesis, but this resulted from the effect scale had on specialization in pastoral or arable farming, rather than from differences in the adoption of productivity-enhancing technology. Contrary to what traditional scholarship argued, latifundia were neither a structural obstacle nor a historical necessity for the rise of modern agrarian capitalism in Uruguay, even if they shaped its regional specialization patterns as well as its distributional outcomes.

The rest of this chapter is organised as follows. Section 1 reviews the specialist historiography on the rise of agrarian capitalism and ‘rural modernization’ in Uruguay, and considers its empirical and conceptual limitations. Section 2 maps agricultural production and landholding in Uruguay towards the end of the First Globalization, and shows that geographical variation at the district level can be exploited to measure some of the effects of latifundia on the agrarian economy. Reconstructing the location and freight profile of all railway stations, it also considers regional specialization and describes the spatial dispersion of livestock rearing when compared to crop farming. Section 3 uses the new district-level dataset to explore the effect of estate sizes and soil quality on cattle crossbreeding; a series of control variables are included, and measures of spatial autocorrelation are reported and discussed. Section 4 relies on this new evidence to argue that

⁴ Key studies for the two largest Spanish American countries are Alan M. Taylor, ‘Latifundia as Malefactor in Economic Development? Scale, Tenancy and Agriculture on the Pampas,’ *Research in Economic History*, 17 (1997) and Simon Miller, *Landlords and Haciendas in Modernizing Mexico: Essays in Radical Reappraisal* (Amsterdam, 1995).

districts characterised by larger landholdings were not, as a rule, any more or less likely to invest in this productivity-enhancing innovation, whereas soil quality had a positive effect on crossbreeding rates regardless of a district's average farm or ranch sizes. Landholding patterns did affect agricultural specialization: areas with larger estates were more likely to specialise in ranching, with higher labour productivity and lower land productivity than cropping, and this scale-output relationship prevailed across many geographical settings. Section V concludes by arguing that latifundia did not define the extent of agrarian capitalism, nor of technical progress: environmental factors, rather than the size of farms and ranches, explain regional differences in the adoption of agricultural innovation.

1 Context and debates

Focusing on the Uruguayan case brings a pastoral twist to the latifundia debate. Farm (or, more appropriately, ranch) sizes in commercial extensive grazing are much larger than in arable agriculture, as a result of the comparatively low levels of output per acre in livestock rearing, which makes great estates a more dominant feature of a pastoral landscape. Arguments on the part played by latifundia in long-term economic development (either as an institutional obstacle, a 'historical necessity', or large and efficient firms) can, therefore, be usefully tested against the experience of technological adoption in a Latin American rural economy dominated by ranching. This chapter aims to contribute to the literature on latifundia and the transition to agrarian capitalism in three ways: by reviewing Uruguayan historiography on 'rural modernization' in the context of Latin American economic history; by describing the geography of agrarian production and estate sizes in Uruguay towards the end of the First Globalization; and by measuring the effects of estate sizes on the key technological transformation in Uruguayan agriculture (the improvement of cattle herds through systematic crossbreeding) at the district level using a new spatially-explicit dataset based on an agricultural census, historical maps, and other primary sources.

Uruguay makes for a good site to revisit the debate on latifundia and innovation for two additional reasons. First, because it was rich by regional and global standards during the First Globalization: in 1913 Uruguayan per capita GDP was the second-highest in Latin America (behind Argentina) and in the top 20 in world incomes.⁵ Second, because Uruguay was unusual among prosperous settler economies in not having access to an open agricultural frontier. The American West, Canada's prairie frontier, the Argentine south, New Zealand's North Island, and the Australian outback all allowed for 'new' (from the perspective of settlers) land to be brought into pasture in the late-nineteenth century. If despite a closed frontier Uruguay managed to maintain high and rising living standards in the context of a tripling of its population during

⁵ Bolt et al., 'Rebasing "Maddison"'.

the decades of mass migration before 1914, it was thanks to a productivity breakthrough in export agriculture, dominated by livestock production, which accounted during this period for more than a third of GDP and over 80% of exports.⁶ Productivity gains in Uruguayan ranching during the First Globalization resulted from increased stocking densities and from improvements in the composition of the herds themselves. These gains were achieved through three interrelated major changes that proceeded throughout the period: the increasing adoption of mixed grazing, the effective enclosure of rangeland, and the systematic crossbreeding of domestic cattle with foreign (particularly British) purebreds. As these processes were uneven across space, the geography of livestock production can reveal much of interest not only about regional inequalities in Uruguay, but also, given that average estate sizes varied widely across the country, about the impact of ownership structures and other variables on the propensity to innovate.

Establishing when, how, and to what extent (analytically and geographically) the Uruguayan countryside became ‘capitalist’ or ‘modern’ has been the subject of extensive work by several generations of historians of rural society as well as by historically-minded economists. The 1960s and 1970s produced a particularly important vintage of books on these issues, ranging chronologically from the late-colonial period (c.1780-1810) to what became known in local historiography as ‘rural modernization’: the process of institutional and technological changes that transformed Uruguay’s agrarian economy under the First Globalization (c.1870-1914).⁷ On the latter, Barrán and Nahum’s seven-volume *Historia rural* became the standard reference. One of their key arguments was that latifundia and the ‘diabolical blessing’ of the natural grasslands shaped a landowner *mentalité* that valued hoarding land and cattle over innovation. Particularly in ‘archaic’ regions north of the Río Negro, this constituted, in their view, a major obstacle to the development of agrarian capitalism.⁸ Such a narrative found echoes elsewhere in Latin American(ist) historical and social science scholarship, as part of a literature that identified latifundia (sometimes ‘the hacienda system’ in English-language studies) as a fundamental obstacle to effective capitalist development, or, at best, as a backward tenure institution that was the sign of a peripheral, underdeveloped, or incomplete agrarian capitalism.⁹ From a global perspective, this literature can be seen as part of the scholarship

⁶ Bértola, *PBI de Uruguay*, 20; Moraes, *Pradera*, 85-96.

⁷ The specialist historiography was reviewed in greater detail in Chapter 1. The key works of this period were: Sala de Touron, de la Torre, and Rodríguez, *Estructura económico-social; Evolución económica*; Barrán and Nahum, *Historia Rural I*; Barrios Pintos, *Vaquerías*; Campal, *Pradera*; Jacob, *Consecuencias sociales*.

⁸ ‘la “bendición” era diabólica: hizo posible desdeñar el cambio.’ Barrán and Nahum, *Agricultura*, 177-99.

⁹ For an introduction, see Magnus Mörner, ‘The Spanish American hacienda: A survey of recent research and debate,’ *HAHR* 53, 2 (1973), Ernest Feder, *The Rape of the Peasantry: Latin America’s Landholding System* (Garden City, N.Y, 1971), and Agustín Cueva, *El desarrollo del capitalismo en América Latina: ensayo de interpretación histórica* (México, 1978): 80-84. To get a sense of unifying themes in the history of large agricultural landholdings across Latin America, see the contributions to Florescano, *Haciendas, latifundios y plantaciones*.

connected to the histories of 'landlord and peasant' relations of production and their place in the debates on 'the agrarian question' in different areas of what was then called the Third World.¹⁰

More recent work, since the 1990s, argued that soil quality and market access, rather than average farm sizes, were the key factors behind different regional rhythms in the agrarian transition to capitalism in Uruguay. According to Millot and Bertino the dominance of latifundia was not an obstacle to growth even in the 'backward' areas in the north of the country, where large landowners were no less capitalist than their counterparts in more 'advanced' areas.¹¹ Their choice to buy more land rather than invest in innovations was explained by their geographical location—which offered them comparatively poorer soils and placed them closer to the Brazilian market than to the Atlantic—not by their 'traditional' values.¹² This re-assessment of the relationship between latifundia and capitalism was also part of a broader trend in Latin American economic and social history, focused on the period of transition to 'modern economic growth' but not limited to it. Economic historians working across the continent found that latifundia had been integral to the rise of agrarian capitalism and the increasing commercialization of agriculture in the late-nineteenth and early-twentieth century, rather than at odds with it.¹³ This generation of studies made a more explicit use of economic analysis (some of it, but by no means all, influenced by the New Economic History) and developed in parallel to social and political histories which produced a more nuanced image of estancias and haciendas.¹⁴

The crucial message emerging from these two strands of specialist historiography, for present purposes, is that by the turn of the twentieth century in Uruguay there were 'advanced' and 'backward' rural regions, defined by their adoption of new techniques (how 'modern' their agriculture was). There is no consensus, however, on how latifundia related to that divide, on the factors behind it, or on its consequences for our understanding of agrarian capitalism in the country. Moreover, it has not been proven that 'backward' areas,

¹⁰ The language of 'underdevelopment' and 'peripheral capitalism'—coined by dependency theorists A.G. Frank and Samir Amin—was highly influential in the literature on 'transitions to agrarian capitalism' in Latin America; see, for example, the studies collected in Kenneth Duncan and Ian Rutledge, *Land and Labour in Latin America: Essays on the Development of Agrarian Capitalism in the Nineteenth and Twentieth centuries* (Cambridge, 1977).

¹¹ Millot and Bertino, *Historia económica*, 89–102.

¹² Moraes, 'Capitalismo pastor', 37.

¹³ Arnold J. Bauer, 'Rural Spanish America, 1870–1930,' in *The Cambridge History of Latin America: Volume 4: c.1870 to 1930*, ed. Leslie Bethell, The Cambridge History of Latin America (Cambridge, 1986). Key case studies in this strand of literature were Simon Miller, 'Mexican junkers and capitalist haciendas, 1810–1910: The arable estate and the transition to capitalism between the insurgency and the revolution,' *JLAS* 22, 1–2 (1990) and Sábato, *Agrarian capitalism*.

¹⁴ For an example of scholarship in this tradition influenced by the New Economic History, see Amaral, *Rise of Capitalism*. More recent social histories revising the part played by *estancias* and *haciendas* include Roy Hora, *The Landowners of the Argentine Pampas: A Social and Political History, 1860–1945* (Oxford, 2001), and Claudio Robles-Ortiz, 'Agrarian capitalism and rural labour: the hacienda system in central Chile, 1870–1920,' *JLAS* 41, 3 (2009).

especially when accounting for their poorer soils, significantly underperformed relative to ‘advanced’ areas, nor that larger average farm sizes had any bearing on the productivity of agriculture (increasing, decreasing, or constant returns to scale) or on the genetic makeup of herds.

There is also no consensus on the expected results of such an analysis, as there are plausible historical and economic rationales for different outcomes. Areas dominated by latifundia could be expected to have been less innovative because large landowners had a preference for insurance (of their livestock which were their main form of capital as well as their commodities) and chose lower output in exchange for lower risk, resulting in high-aggregate, low-unit returns to the owner. Alternatively, it could be argued that latifundia owners would be in a much better position than smallholders to take risks, invest, and innovate, having access to information flows as well as credit and capital markets from which smaller producers were left out.¹⁵ Finally, there are convincing reasons to think that, beyond a minimum threshold required for commercial extensive grazing, estate sizes would have little or no effect on the propensity to adopt technical innovations. Cattle crossbreeding, like other land-saving innovations in agriculture, is to an extent scale-neutral: successive improvements in herd quality result in higher productivity in latifundia as well as in smaller ranches. Moreover, in ranching as well as in crop farming the cost of monitoring workers often counters whatever economies of scale a huge estate can benefit from, making the definition of an ‘optimal’ farm size very difficult.¹⁶

Previous studies have not been able to quantitatively test these questions because they were limited by the tyranny of administrative geography. As they worked with data at the level of provinces (the 19 political divisions, *departamentos*, which form Uruguay’s second level of government), the number of observations and the level of spatial resolution simply did not allow economic historians to quantitatively test relationships between variables. It is the premise of this chapter that district-level data, mapped onto the 210 court districts (*secciones judiciales*) which existed at the time, can be used to describe and measure the relationships between estate sizes, soil quality, and agricultural innovation across the country. The risk of ecological fallacy (interpreting individual characteristics from aggregated data) remains even when working with district-level sources, but it is considerably less severe than in all previous studies which explored the relationships between these variables only at the provincial level.¹⁷

¹⁵ These two positions, as they pertained to Latin American landowners, were clearly delineated in the scholarship already in the 1960s; see Danilo Astori, *Controversias sobre el agro latinoamericano: un análisis crítico* (Buenos Aires, 1984).

¹⁶ Giovanni Federico, ‘Growth, specialization, and organization of world agriculture,’ in *The Cambridge History of Capitalism. Volume II: The Spread of Capitalism: From 1848 to the Present*, ed. Larry Neal and Jeffrey G. Williamson (Cambridge, 2014): 66-68.

¹⁷ The seminal text on the problem of ecological fallacy is William S. Robinson, ‘Ecological correlations and the behavior of individuals,’ *American Sociological Review* 15, June (1950).

In addition to the empirical limits of previous datasets, the debate is also obscured by conceptual difficulties, as ‘agrarian capitalism’ and ‘modernization’ themselves are seldom defined in the literature. In the classic sense of the term, there is no doubt that the Uruguayan countryside was as a whole capitalist by 1900.¹⁸ Almost 80% of agricultural land was privately owned (up from 30% in 1835);¹⁹ land and other factors were transferred through the market and their prices responded to relevant international commodity markets;²⁰ and most of the agricultural output value was produced in districts where estates relied at least to an extent on wage labour rather than exclusively on family labour, or—as had been the case a century earlier—a mix of relations of production which included slavery. But for economic historians who have written about these issues, ‘agrarian capitalism’ seems to mean something rather more: it implies the rise and consolidation of entrepreneurial estancias. That is, the predominance of landowners who adopt the practices and processes of ‘modern ranching’ to increase their unit returns, rather than relying on the ‘traditional’ strategy of acquiring more land. We could think of this as a distinction, at the farm level, between land-extensive growth and capital-intensive growth paths. Given that the agricultural frontier was closed and that almost all public agricultural land had already been sold, there were obvious limits to an extensive growth strategy for the agrarian economy as a whole, although not necessarily for individual producers.²¹ Did latifundia remain as a rustic remnant of a backward agriculture, while smaller producers pioneered innovation and intensive growth? Given that terminological imprecisions in the literature extend to ‘latifundia’ themselves, before attempting an answer to those questions we need to think about how latifundia can be usefully identified within the economic geography of Uruguayan agriculture in this period.

¹⁸ See the definition of agrarian capitalism proposed in Chapter 1 and the related discussion (pp. 39-41).

¹⁹ Eduardo Acevedo, *Anales históricos del Uruguay*, vol. I (Montevideo, 1933): 504; *ibid.*, V: 71.

²⁰ Moraes, ‘Capitalismo pastor’, 28.

²¹ For a classic discussion of the economics of the ‘traditional’ ranching strategy in comparison to agricultural intensification in the Uruguayan livestock economy, see Instituto de Economía, *El proceso*, 100-09.

2 Data

2.1. Sources and spatial level

Almost 90% of the Uruguayan territory (176,000 square kilometres) is suitable for agriculture, with natural grasslands being the predominant land cover in four-fifths of the countryside and elevations rarely reaching 200 metres.²² Recognising the size and diversity of the rural economy, economic historians have relied on provincial data on agricultural output, soil quality, and other variables to sustain their arguments, and produced maps to that effect.²³ Nevertheless, the very high share of land suitable for agriculture and the size of the territory (small by South American standards, but larger, for example, than England and Wales combined) make describing regional variation at the level of provinces entirely inadequate. Not only are some provinces very large, but their borders—drawn in the late nineteenth century as a result of political calculations and conflicts—can obscure rather than illuminate fault lines in rural landscapes and economies. This chapter overcomes that limitation by mapping data on agricultural output, herd composition, and average farm size in 1908 at the spatial level of court districts (n=210, 197 of which were at least partially rural). District boundaries were reconstructed from government decrees and by geo-referencing historical provincial maps.²⁴ Data on land, labour, livestock, and agricultural output at the district level were transcribed from the 1908 agricultural census. Geographical data were taken from statistical yearbooks, government reports, and railway companies' records. Table 4.1 summarises descriptive statistics for all variables.²⁵ Details on sources can be found in the Appendix; GIS mapping was used to link the different data together.

²² Uruguay's physical geography was introduced with greater detail in Chapter 1; two key references are Enrique Marchesi and Artigas Durán, *Suelos del Uruguay*, vol. 18 (Montevideo, 1969); Soriano, 'Grasslands'.

²³ See, for example, the maps in Barrán and Nahum, *Civilización*, 364-65 and Millot and Bertino, *Historia económica*, 100.

²⁴ GIS shapefiles providing boundary and attribute data at the spatial level of court districts (*secciones judiciales*) are available as Additional Material. References for historical maps used as sources for georeferencing can be found in the Appendix, along with the details on the sources used for the quantitative data.

²⁵ The full dataset and code in R language are available in the replication package within the Additional Materials; instructions can be found below in the Appendix.

TABLE 4.1. Summary statistics for selected variables across Uruguayan rural districts

	Mean	Std. dev.	Min.	Max.
Share of cattle crossbred (%)	65.7	25.0	7.1	99.9
Average farm size (hectares)	677.9	908.6	5.1	7,678.9
Average soil quality (CONEAT index, Uruguay=100)	101.4	29.4	50.7	168.1
Enclosure density (kms of wire fencing per hectare)	27.9	34.2	3.9	329.0
Wheat yield (hundredweights harvested per hectare)	4.2	4.2	0.0	24.2
Oxen as share of livestock units (%)	5.3	7.9	0.3	45.1
Stocking density (livestock units per hectare)	0.9	0.5	0.2	5.9
Bulls per cow (heads)	0.1	0.3	0.0	3.6
Sheep per cattle (heads)	3.3	2.5	0.1	10.7
Rainfall (yearly millimetres)	951.7	113.6	720.0	1,152.0
Mean annual temperature (°C)	17.0	0.7	16.0	19.0
Mean altitude (meters above sea level)	96.1	55.8	12.0	238.0
Distance to nearest railway station (kms)	29.4	25.6	0.7	123.5
Population density (people per square km.)	18.1	84.5	0.4	907.7
Foreign-born population (%)	11.5	6.6	2.2	35.3

Sources: *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*; 'Lluvias. Promedios anuales obtenidos en las 52 estaciones pluviométricas establecidas en la República O. del Uruguay,' *Anuario Estadístico de la República Oriental del Uruguay. Años 1913 y 1914*; *Clasificación de suelos del Uruguay*. Montevideo: Ministerio de Ganadería, Agricultura y Pesca, 1976; INUMET, 'Estadísticas climatológicas'; ESRI World Elevation Services; Waterlow and Sons, 'The Central Uruguay Railway of Monte Video and its Connections, 1911' UL, Map Room. Maps.697.91.6.

1908 provides a good vantage point from which to reconstruct the economic geography of Uruguayan agriculture not only because of the quality and variety of primary sources, but also because of its place in the chronology of the country's growth path. Between 1900 and 1912 Uruguay's real GDP almost doubled, as did as well as the livestock sector's gross value added, reaching levels that would not be met again until the 1920s.²⁶ Our benchmark year then is placed almost in the middle of a decade of rapid economic growth fuelled by high and rising international prices for Uruguay's key export commodities (wool, beef, and leather).²⁷ As far as the longer-term development of this agricultural economy is concerned, 1908 comes

²⁶ Luis Bértola, 'Primer Batllismo: reflexiones sobre el crecimiento, la crisis y la guerra,' in *Ensayos de Historia Económica. Uruguay y la región en el mundo (1870-1990)* (Montevideo, 2000): 179.

²⁷ Bértola, *PBI de Uruguay*.

near the culmination of the technological trajectory which emerged in the 1860s with the ‘sheep revolution’ analysed in Chapter 3, which increased stocking densities and encouraged mixed grazing. Innovations continued in the form of wire-fencing and enclosures since the late 1870s, and culminated with systematic cattle crossbreeding from the 1880s onwards.²⁸ Mapping herds, crops, and agricultural output in 1908 at a high level of spatial resolution provides an opportunity to explore the ways in which different regions engaged with technical innovation, while also allowing us to test some of the hypotheses in the literature regarding the part played by landholding patterns in transitions to agrarian capitalism.

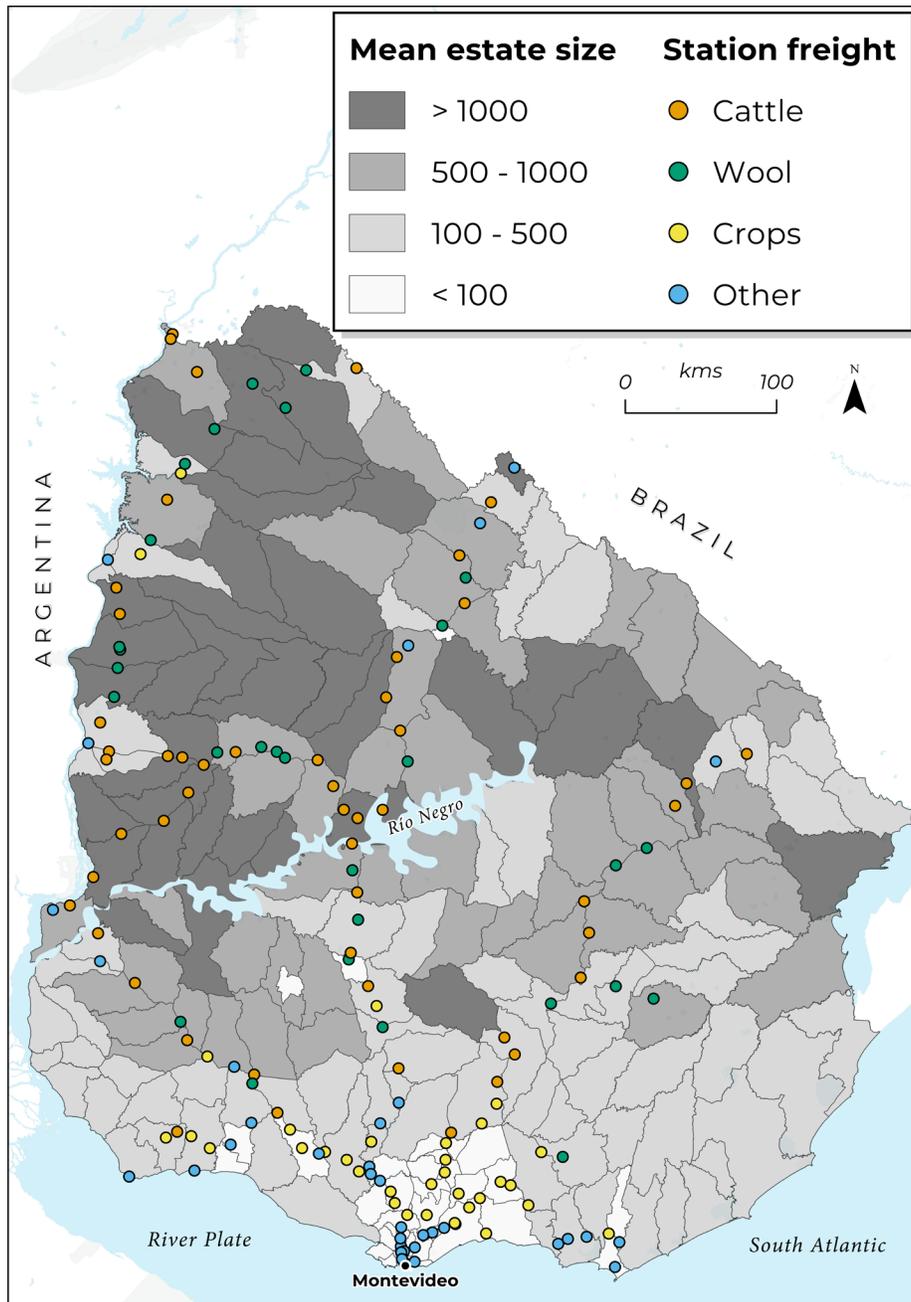
2.2. Estate sizes and the geography of agriculture

How dominant were large landholdings in Uruguayan agriculture? What did ‘large’ mean in different parts of the country? And how did this relate to the regional patterns of agricultural specialization? Map 4.1 shows average farm sizes for every district in 1908 and the location and primary freight loaded at every railway station in the country during 1910. Average farm size can be a misleading indicator of land tenure patterns because the mean value could be unrepresentative given within-district disparities. Even though the farm-level microdata for the agricultural census has not survived, we can get a sense of the relative size of most farms in different districts by comparing the density of enclosures. The kilometres of wire fencing per agricultural hectare in each district correlate significantly and negatively with the average farm size, suggesting that low average sizes are indicative of a predominance of smaller holdings corroborated by a denser pattern of enclosures.²⁹ Freight cargo is included because it is an excellent material indicator of the composition of regional output, and thereby reveals internal comparative advantages. It was taken or calculated from the railway companies’ reports of cargo loaded onto trains in 1910 (details can be found in the Appendix).

²⁸ Moraes, *Pradera*, 86-87.

²⁹ $r = -.31$, $p < .001$. Wire fencing was (and remains) the ubiquitous method of enclosing agricultural land in Uruguay; the classic study is Jacob, *Consecuencias sociales*.

MAP 4.1. Average estate size by districts and railway stations' main freight, c.1908



Note: railway station freight profiles are defined as 'cattle' if live animals and cattle hides amounted to more than half of the total cargo weight loaded at the station; 'wool' if wool did; and 'crops' if the added weight of wheat, corn, linseed, bran and hay represented more than half of the total. The rest of the stations are classified as 'other'.

Sources: 'Establecimientos agropecuarios por secciones', *Censo General 1908*, T.II, P.II: 1026-1035; *Anuario Estadístico 1909-1910*, (Montevideo, 1912); and georeferencing of Waterlow and Sons, 'The Central Uruguay Railway of Monte Video and its Connections, 1911' UL, Map Room. Maps.697.91.6 and a series of historical maps detailed in the Appendix.

It is apparent that landholdings were in general larger above the Río Negro, both along the eastern littoral on the Uruguay River and nearer the Brazilian border, with most districts in those areas returning average estate sizes over 1,000 hectares, including those regions specialised in cattle as well as those concentrating on sheep. While it is problematic to define latifundia by an arbitrary acreage threshold, the 1,000 hectare mark is useful because it has been widely used in the literature, and more importantly because it fits our data: sitting just above the 80th percentile of the overall acreage distribution, it captures the quintile of districts with largest units.³⁰ By contrast, to the south, comparatively smaller estates predominated, especially in the grain belt surrounding Montevideo, by far the largest urban market in the country. Railway freight data offer a useful measure of the spatial clustering of market-oriented arable farming when compared to the greater dispersion of livestock rearing: nearest neighbour ratios are almost twice as high for stations loading predominantly cattle when compared to those where crops made up the majority of the cargo.³¹ Stations specializing in pastoral commodities (livestock and wool) were more evenly distributed across the territory, and generally increased in number as we move north and away from Montevideo. On the other hand, stations specializing in crop farming for the domestic market tended to be more clustered and generally located near the capital.³² As a result, livestock and livestock by-products travelled a greater distance on average than cereals and other non-livestock cargo, and played a larger role in the bottom line of railway companies.³³

This logic is partially explained by the favourable conditions for livestock rearing in most of Uruguay, as well as by the technical biases of arable and pastoral farming, but it can be most clearly traced to Uruguay's population geography, which Chapter 5 will explore in greater detail. The von Thünen model of land use suggests that, assuming a closed economy with an isolated city, the spatial location of agricultural production is determined by the distance to the city.³⁴ The interaction of the yields of different crops and their

³⁰ The 80th percentile mark was at 957 hectares and the 81st percentile was at 1,007 hectares.

³¹ A nearest neighbour ratio (NNR) of 0 would describe a random dispersion of points in a defined space, whereas a ratio of 1 would describe a perfectly clustered set of points. The NNR was 0.80 and 0.70 for stations loading mostly live animals and wool respectively, and 0.45 for stations loading primarily grains. Details on the calculation of the NNR can be found in the Appendix. Scholars have found similar evidence at the (less disaggregated) spatial level of provinces: see Micaela Araujo, Pablo Castro, and Henry Willebald, 'Actividad agropecuaria en Uruguay (1908-2000): localización geográfica y hechos estilizados,' *Revista de Economía* 22, 2 (2015).

³² The mean rail distance from Montevideo's Central Station was 408 kms for stations who shipped mostly wool, 335 kms for those that shipped mostly live animals, and 128 for those that shipped mostly cereals.

³³ Gaston Díaz, 'Railway investment in Uruguay before 1914: profitability, subsidies, and economic impact,' *European Review of Economic History* 21, 3 (2017).

³⁴ The model was originally put forth by von Thünen in 1826, and was rekindled by Alonso in the 1960s, who used it as the basis of a 'monocentric city model'; see Johann Heinrich von Thünen, *Von Thünen's Isolated State: An English Edition* (Oxford, 1966); William Alonso, *Location and Land Use: Toward a General Theory of Land Rent* (Cambridge, MA, 1964).

transportation costs will determine a pattern of land use in concentric circles, from horticulture and dairying, to cereals, and finally cattle grazing. Taking Montevideo (which at the time was home to about a third of Uruguayan population) as the central city in von Thünen's model helps account for the spatial distribution of agriculture around 1910. These results resonate with Griffin's geographical analysis which found that this model provided a useful framework for understanding the intensities of land use in Uruguay in the late 1960s.³⁵

The geography of landholding was to an extent explained by the differing land requirements across arable and pastoral agriculture, and their distribution across the territory: the ratio between pastureland and cropland was higher in districts with larger average estate sizes. Section 4 below will explore these correlations in detail and discuss their implications for the 'inverse relationship' thesis, i.e. the negative correlation between estate sizes and land productivity, which has been argued over by economists and economic historians of Latin America, Asia, and Africa.³⁶

2.3. Cattle crossbreeding as technical innovation

Against this background, the key question for the long-term development of Uruguayan export agriculture is how estate sizes related to the geographical distribution of 'modern' ranching production techniques. The improvement of the 'native' *criollo* cattle via systematic crossing with British breeds (particularly Hereford and Shorthorn) offers a useful measure of the adoption of agricultural innovations. The process of crossbreeding of cattle had begun in the 1880s, and was still underway two decades later, with Uruguayan producers importing expensive pedigree animals from Britain in increasing numbers.³⁷ The effects of this process of agricultural intensification were very unevenly distributed in the countryside, with leading areas already having 'improved' almost all of their cattle through crossbreeding, while there were more than two and a half million purely 'native' cattle being raised in other regions. Livestock producers had to invest in order to acquire purebred or half-blood Hereford or Shorthorn animals or hire their services and, year after year, improve the genetic makeup of the herd. The result were the *mestizo* cattle: crossbreds who grew faster,

³⁵ Ernst Griffin, 'Testing the von Thunen theory in Uruguay,' *Geographical Review* 63, 4 (1973).

³⁶ For the pioneering paper in the literature on the 'inverse relationship,' see Péter Tamás Bauer, 'The economics of planting density in rubber growing,' *Economica* 13, 50 (1946). The thesis was famously applied to Latin American cases by Albert Berry and William R. Cline, *Agrarian Structure and Productivity in Developing Countries* (Baltimore, 1979). For an overview and a critique, see Graham Dyer, 'Redistributive land reform: No April rose. The poverty of Berry and Cline and GKI on the inverse relationship,' *Journal of Agrarian Change* 4, 1-2 (2004).

³⁷ In 1908, to take the year of our main benchmark, more certificates for pedigree Hereford animals were granted for export to Uruguay than to any other country. UL, The Hereford Herd Book Society, *The Herd Book of Hereford Cattle Vol. XXIX* (Hereford, 1908): 1040-47.

gained weight quicker, and resulted in beef of a superior quality than ‘native’ animals. They were also hardier than purebred imports, and hence better suited than them to year-round outdoor grazing.

Selective livestock breeding was, as historians of science and environmental historians have shown in other contexts, part art and part science; book knowledge and everyday experience both played a part.³⁸ While some rich breeders could travel abroad or benefit first hand from veterinary expertise, many producers relied on word of mouth, or on learned advice they could get through the Rural Society or even from the written press. Individual animals were more valuable than they had ever been in Uruguay, and because both the Montevideo market and the external demand were aware of lineages and qualities, individual cattle could not be perfectly substituted by others. Letters to the editor of *El Siglo*’s ‘countryside page’ (*La Página de la Campaña*) asked specific questions about how to look after purebred bulls and received detailed answers:

Question—I would be grateful if you could answer me this query: I have two bulls in my stable, animals that are for me a considerable capital suffering from foot-and-mouth disease, what must I do to heal them? (signed) A rural man.

Answer—Keep both animals stabled with a good hay bed that you will change often. Wash their mouth ulcers with antiseptic solutions. There are many useful solutions: here are some you can easily prepare in your estancia, all of them efficient (...) Keep the animals on a light diet of tender fodder and cooked grain.³⁹

As contemporary press and livestock producers themselves noted, the label ‘crossbred’ (*mestizo*) could refer to very different degrees of ‘improvement’ and breed purity.⁴⁰ The signature red coat and white face of Herefords, for instance, were dominant traits transmitted even to animals who were only 1/8 Hereford,

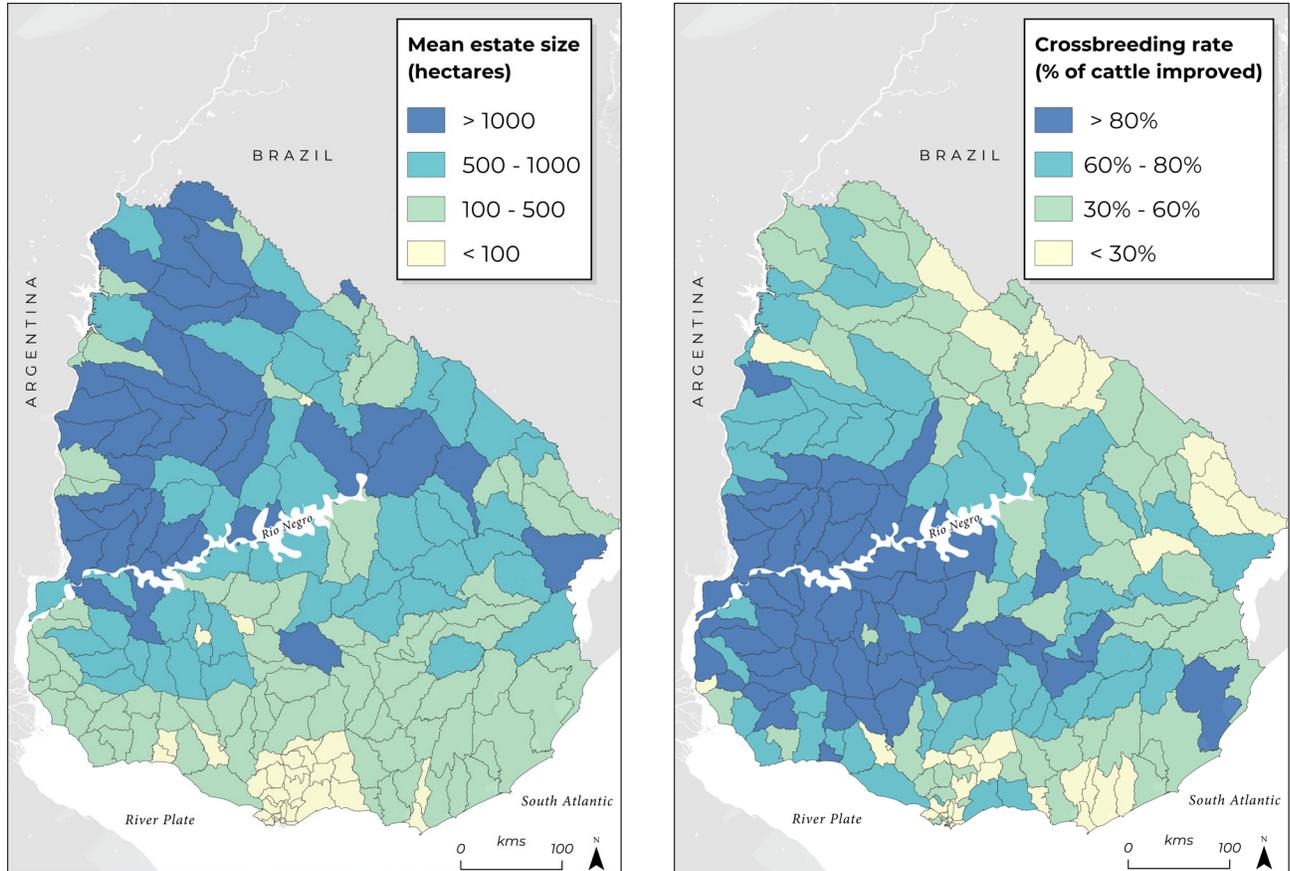
³⁸ Margaret E. Derry, *Bred for Perfection: Shorthorn Cattle, Collies, and Arabian Horses Since 1800* (Baltimore, 2003): 17-47; Rebecca J. H. Woods, *The Herds Shot Round the World: Native Breeds and the British Empire, c. 1800-1900* (Chapel Hill, 2018): 141-64.

³⁹ ‘Pregunta—Señor Redactor de la “Página Rural de EL SIGLO”—Agradecería me contestase á la siguiente pregunta: Tengo dos toros á galpón, animales que para mi representan un capital considerable atacados de aftosa ¿qué debo hacer para curarlos?--Rural. Respuesta—Tenga los animales á galpón con buena cama de paja abundante que renovará á menudo. Lave las llagas de la boca con soluciones antisépticas. Se emplean muchas: le citaremos algunas de las que con seguridad se pueden preparar en una estancia, todas eficaces: (...) Téngase á los animales en una dieta liviana de forrajes tiernos y granos cocidos.’ BN, *El Siglo*, 31 October 1913, 7.

⁴⁰ Barrán and Nahum, *Civilización*, 84-92. Cattle breeds themselves are of course entirely a human construct, a case of ‘flesh made word’, as Harriet Ritvo puts it in *The Platypus and the Mermaid, and Other Figments of the Classifying Imagination* (Cambridge, MA, 1997): 76-81.

which led to the results of the agricultural census being criticised as excessively optimistic.⁴¹ But despite genetic disparities within crossbred herds, the distinction between ‘native’ and crossbred cattle was validated by specialist markets, the former usually sold by the head and the latter by their weight.⁴² The geography of cattle improvement shows large and revealing regional divides (Map 4.2, right), which did not follow the same north-south axis as the changing patterns in land tenure, reproduced here again in the left-side map.

MAP 4.2. Mean estate size and percentage of cattle crossbred by district, 1908



Sources: ‘Ganado por especies, departamentos y secciones’, *Censo General 1908*, T.II, P.II: 990-997; ‘Establecimientos agropecuarios por secciones’, *Censo General 1908*, T.II, P.II: 1026-1035.

⁴¹ The official publication of the Uruguayan Rural Society was the main forum for these debates; see, for example, BN, ‘La producción de ganados puros y mestizos en el Río de la Plata’, *Revista de la Asociación Rural*, 1 May 1909. The same concerns occupied cattlemen in the United States: Woods, *Herds*, 154.

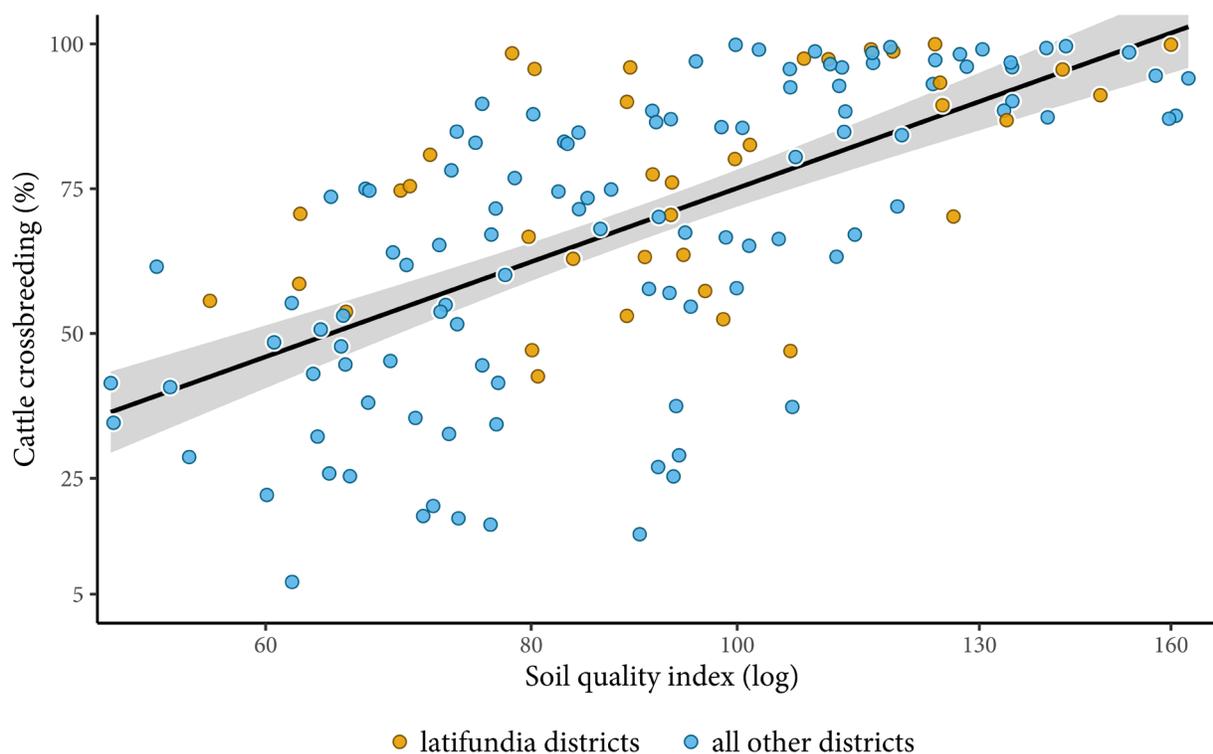
⁴² This market situation was disseminated by rural newspapers: see, for example, FB, ‘Las exposiciones ferias’, *La Campaña* (Departamento de Río Negro), 1 April 1908, 1. See also Millot and Bertino, *Historia económica*, 103.

The economic geography of agriculture and innovation in 1908 reveals much of interest about the relationship between latifundia and agrarian capitalism in Uruguay during the First Globalization. For the purposes of this chapter, two insights can be underlined. Firstly, as historiography has long argued and our data now proves at a much higher spatial resolution, very large holdings became more common the farther north one went. Secondly, the spatial location of large holdings did not correspond to geographical divides in the degrees of innovation in ranching (cattle crossbreeding), which were in general higher in the west than in the east, with a mixed picture in the north and south: different interactions, revealing diverse economic strategies, seem to have predominated in each region. The existence of latifundia in a district made some strategies more likely than others, but it is by itself not enough to account for differences in crossbreeding rates, which were crucial in explaining differing levels of agricultural productivity. To understand the impact of large landholdings in Uruguay's rural economy we need to explore the effects of different patterns of land tenure in the context of other variables in a more systematic way.

3 Method and results

This section uses the new spatially-explicit, cross-sectional dataset to measure the impact of estate sizes and soil quality on cattle herd improvement. Before running any regressions, the main argument is already captured by Graph 4.1: crossbreeding rates were higher in districts with better soils, and this applied to areas with productive units on average larger than 1,000 hectares as well as smaller.

GRAPH 4.1. Soil quality index and cattle crossbreeding rates in 'pastoral' districts, 1908



Notes: 'latifundia districts' are those with average estate sizes above 1,000 hectares. 'Pastoral' districts are those in which the ratio of rangeland to cropland was larger than 6 to 1 (n=148).

Sources: 'Ganado por especies, departamentos y secciones', *Censo General 1908*, T.II, P.II: 990-997; *Clasificación de suelos del Uruguay*. Montevideo: Ministerio de Ganadería, Agricultura y Pesca, 1976.

We can now measure the relationships between these variables systematically and test their robustness to the inclusion of other variables. In order to do so, the effect of unit sizes and soil quality on cattle herd improvement is estimated through an ordinary least squares (OLS) model in the following form:

$$y_i = Constant + \beta_1 FarmSize_i + \beta_2 SoilQuality_i + \gamma X_i + \varepsilon_i \quad [1]$$

On the left side of equation 1, the dependent variable y_i measures the share (in percentage) of cattle that was crossbred (that is, 'improved') in the herds of district i in 1908. On the right side, the two main independent variables of interest are $FarmSize_i$, which measures the average size (in hundreds of hectares) of the agricultural holdings in district i in 1908, and $SoilQuality_i$, which measures the average soil quality

(in CONEAT index, the national average being 100) of district i , georeferenced on the basis of the Ministry of Agriculture's 1976 high resolution survey of soil types.⁴³ X is a vector of control variables, and ε is an error term. Controls include proxies for different agricultural settings and productive strategies (density of enclosures, wheat yields per hectare, stocking densities, oxen as share of total livestock units, number of bulls per cow, and number of sheep per cow),⁴⁴ environmental variables (yearly rainfall, mean annual temperatures, average altitudes), market access (distance to the nearest railway station and immediate access to a land border with Brazil, the single most important market for Uruguayan agricultural exports),⁴⁵ and demographic variables (population density and share of foreign-born population).

After including the full set of controls, we still find a strong and positive effect of soil quality on the share of cattle crossbred, while the effect of farm sizes is not statistically significant (column 5 of Table 4.2). The estimated coefficients suggest that a ten-unit increase in the soil quality index would increase the cattle crossbreeding rate by more than 3.5 points (that is, an additional 3.5 per cent of the 'native' cattle in a district's herds being improved through crossbreeding) when compared to the mean. Given the large range of values of the soil quality variable in the distribution (from an index value of 51 to 168), and the variation in the outcome variable (crossbreeding rates range from 7 to 99 per cent), the effects resulting from soils can accrue to explain very large gaps between districts. This suggests that the correlation is not only statistically significant, but that it also was economically meaningful.

⁴³ CONEAT is an edaphological system of soil classification that groups homogenous areas in terms of their long-term potential for livestock production; see Bruno Lanfranco and Gonzalo Sapriza, 'Incidence of the CONEAT index and other quality determinant factors of farmland prices,' *Agrociencia* 14, 2 (2010). The first use of this index by economic historians discussing the regional diversity of Uruguay's rural modernization can be found in the seminal work by Millot and Bertino, *Historia económica*, 91-93.

⁴⁴ Livestock Units (LUs) are used to standardise the number of animals according to their grazing or fodder requirements. Here I use the coefficients suggested for Uruguay by INIA, *Revisión y análisis de las bases históricas y científicas del uso de la equivalencia ovino- bovino. Hacia una nueva equivalencia para ser utilizada en Uruguay* (Montevideo, 2012).

⁴⁵ On the geographical distribution of Uruguayan exports, see Nicolás Bonino-Gayoso, Antonio Tena-Junguito, and Henry Willebald, 'Uruguay and the First Globalization: on the accuracy of export performance, 1870-1913,' *RHE* 33, 2 (2015): 20.

TABLE 4.2. Impact of farm size and soil quality on cattle crossbreeding rates, 1908

	(1)	(2)	(3)	(4)	(5)
Farm size	0.007* (0.003)	0.004* (0.002)	0.003 (0.002)	0.003 (0.002)	0.002 (0.002)
Soil quality	0.321*** (0.108)	0.450*** (0.061)	0.411*** (0.062)	0.409*** (0.063)	0.355*** (0.074)
Agricultural controls	No	Yes	Yes	Yes	Yes
Environmental controls	No	No	Yes	Yes	Yes
Market access controls	No	No	No	Yes	Yes
Demographic controls	No	No	No	No	Yes
Observations	197	197	197	197	197
R ²	0.174	0.521	0.570	0.571	0.589

Notes: Results obtained by estimating equation 1 using cattle crossbreeding (% of bovines crossbred) as the dependent variable. Farm size (in hectares) and soil quality (in CONEAT index) as independent variables of interest. Robust standard errors clustered by 19 Uruguayan provinces (*departamentos*) reported in brackets. Observations are Uruguayan court districts (*secciones judiciales*). ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Sources: See Table 4.1.

The main concern about the validity of these results relates to endogenous spatial autocorrelation. Could it have been the case that the geography of cattle crossbreeding was merely the result of the new technology spreading across districts, creating clusters of high or low levels of genetic improvement through a ‘neighbourhood’ or ‘contagion’ effect?⁴⁶ As Kelly has shown, a regression analysis could show a much inflated explanatory power because the independent variable of interest is soaking up unobserved similarities resulting from spatial autocorrelation in the outcome variable.⁴⁷ The argument pursued here relies on *exogenous* spatial autocorrelation, because the independent variables of interest are themselves geographically concentrated: areas closer to each other tended to have similar soil quality levels when compared to those further away, and the same can be said of average estate sizes. In other words, we want to test whether the regression results allow us to argue that the clustering of different rates of crossbreeding

⁴⁶ The ideas of ‘neighbourhood’ or ‘contagion’ effects were popularised in economic geography by Lawrence A. Brown, *Innovation Diffusion: A New Perspective* (London, 1981).

⁴⁷ Kelly, ‘Standard errors’.

across rural districts was significantly explained by an exogenous variable (soil quality) which is itself spatially autocorrelated, rather than predominantly by high or low crossbreeding rates attracting each other regardless of soil types.

To check whether the significance of this relationship is robust to spatial autocorrelation, we calculate Moran's I statistics for the dependent variable, the independent variables of interest, and for the residuals of the main regression, giving equal spatial weight to the five closest neighbours to each district and zero weight to the rest (Table 4.3). Moran's I is an inferential statistic that results from comparing the expected spatial distribution of a variable under randomization with the observed distribution of the variable (the null hypothesis being that the spatial distribution is entirely the result of random processes). A Moran's I value of 1 would indicate that the spatial distribution of the variable is perfectly clustered (for example, if all the high values were concentrated south of the Río Negro, and all the low values north of it) while a value of 0 would indicate an entirely random distribution, and a value of -1 a completely dispersed distribution.

TABLE 4.3. Spatial autocorrelation tests for key variables and model residuals

	Moran's I	z-score
Cattle crossbreeding	0.61	14.3
Soil quality	0.82	19.5
Farm size	0.31	8.1
Model residuals	0.20	5.9

Notes: the Moran's I statistic is significant for all variables at the 1% level. Model residuals refer to model 5 in Table 4.2, estimated using equation 1.

Sources: see Table 4.1.

The results show that the soil quality variable is highly autocorrelated, as neighbouring soils tend to resemble each other. The dependent variable was also highly clustered, and its z-score is high enough to confirm that the geographical pattern of cattle crossbreeding was not the result of random chance. The model residuals also show spatial autocorrelation, albeit at much lower levels than the independent variables, with a Moran's I closer to a random distribution. When considered together, these tests suggest that cattle crossbreeding had a significant component of spatial autocorrelation (it spread between neighbouring areas) but that our explanatory variables capture more than two thirds of it: clustering of high and low values of crossbreds as a share of cattle responded more to exogenous variables (themselves spatially autocorrelated) than to the endogenous 'spreading' of crossbreeding as a technology.

A second possible area of concern refers to the risk of multicollinearity, particularly as it affects the result of the first variable of interest: perhaps the impact of ‘farm’ sizes on innovation is lost by the inclusion of other independent variables highly correlated with scale. This was not the case: collinearity diagnostics run on the model resulted in a Variance Inflation Factor for *Farm_Size* of 1.43.

4 Discussion

These findings have important implications for our understanding of agricultural intensification, and the part played by latifundia in it, because a larger share of crossbreeds increased output per worker and per hectare.⁴⁸ This is of course unsurprising given the importance of ranching to the rural economy almost everywhere in the country and the increased rate at which crossbreeds could convert grass to beef. Having considered the robustness of the results, let us look closer at the implications of the finding that average estate sizes had no significant impact (either positive or negative) on agricultural innovation, as well as the mechanisms behind the main effect: the positive impact of soil quality on crossbreeding. The discussion will also explore how the Uruguayan case can provide a test of the ‘inverse relationship’ between estate size and land productivity, a widely used model in economic analyses of agricultural development in Latin America, Asia, and parts of Africa.

Were latifundia obstacles for technical change in Uruguayan agriculture? If we consider the crossbreeding of cattle as a useful measure of innovation, then districts with more presence of latifundia were not always, or even predominantly, economic dinosaurs: the range of values of crossbreeding rates was very large (from about 40% to almost 100%) within the group of districts with landholdings averaging over 1,000 hectares. Regression analysis showed that, when controlling for environmental factors, the mean size of landholdings does not significantly contribute to explain district-level differences in the adoption of crossbreeding. This finding, based on a substantially larger and more geographically accurate dataset than all previous studies, directly contradicts the central thesis of the standard historiographical account of Uruguay’s rural modernization: that, in the classic statement of Barrán and Nahum, ‘the extensive exploitation of latifundia produced such large profits for their sole owner that it discouraged change and innovation.’⁴⁹

⁴⁸ In this sense, cattle crossbreeding in Uruguay was both a ‘landesque’ and a ‘labouresque’ investment, to use Amartya Sen’s categories (‘The choice of agricultural techniques in underdeveloped countries,’ *Economic Development and Cultural Change* 7, 3 (1959): 280). An econometric test of its historically well-founded positive effects on labour and land productivity in Uruguay can be found in Table A2 in the Appendix.

⁴⁹ ‘El latifundio explotado extensivamente dejó tan fuertes ganancias en manos de unos cuantos propietarios que desalentó el cambio y el espíritu innovador.’ Barrán and Nahum, *Civilización*, 305-06.

It would seem, then, that the relative ‘backwardness’ of agriculture in some regions cannot be attributed to supposed ‘traditional mentalities’ associated with large landholdings. This charge, once a common feature in the mainstream of Latin American economic history, is not supported by our evidence. However, this was not because great estates were, by virtue of their economies of scale or higher capitalization, a ‘historical necessity’ or more ‘capitalist’ or innovative, an idea that can find theoretical support in either the Marxian or neoclassical traditions.⁵⁰ Estate sizes had no significant effect on crossbreeding rates because some districts characterised by larger landholdings (average size over 1,000 hectares) benefitted from particularly good soils for year-round, open-air ranching, while others had to make do with poorer land: mean soil quality indexes varied widely among areas dominated by latifundia (from less than 60 to almost 160).

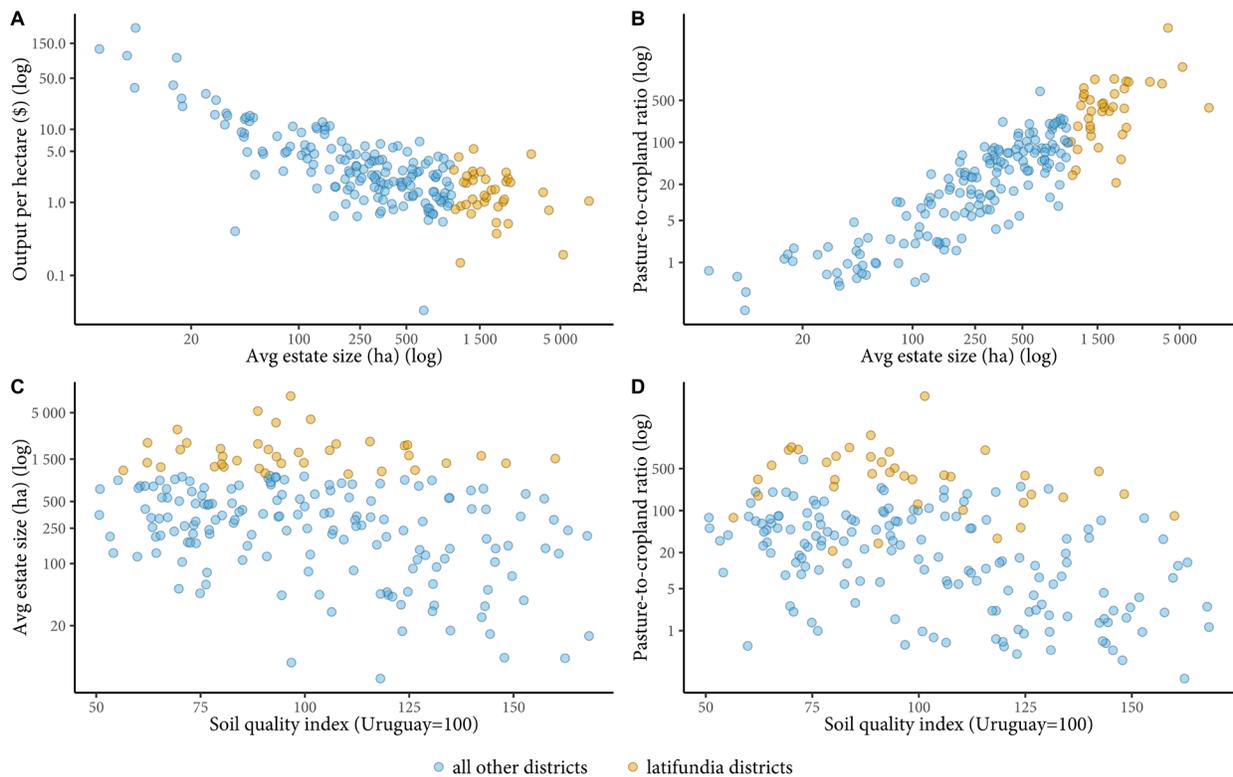
Whereas landholding patterns do not explain the spatial distribution of innovation, they do account for the geography of agricultural specialization and the ratios of land to labour across the country. Districts characterised by latifundia were extremely specialised in livestock production (which maximises output per worker rather than per hectare), and, conversely, districts with smaller farms were specialised in arable agriculture (with a comparatively higher productivity of land and a lower productivity of labour). The thesis of an ‘inverse relationship’ between land productivity and size of holding is therefore verified by Uruguay’s rural districts (Graph 4.2, A).⁵¹ Nevertheless, this was not the consequence of large landowners holding land for non-productive purposes, either as a form of insurance or indeed for extra-economic reasons, which the classic historiographical account emphasised, as did some development economists in the 1960s.⁵² Neither was it the straightforward result of soils being on average poorer in districts characterised by larger farms; in fact, larger holdings do not strongly correlate with poorer soils at the district level (Graph 4.2, C). The negative relationship between average holding size and output per hectare is explained by the composition of that output: specialization in livestock production (measured as the ratio between the hectares of agricultural land left to pasture and those under crops or in fallow) consistently increased with average farm sizes (Graph 4.2, B). Thus, the geography of livestock and grain farming followed the scale of holdings rather than primarily the typology of their soils: there is not a strong correlation, at the district level, between soil quality and specialization in pastoral rather than arable agriculture (Graph 4.2, D). That productive strategy was, in turn, an effective response to the relative factor prices facing large landowners, extensive ranching allowing them to substitute land for labour.

⁵⁰ See, for an overview, Frank Ellis, *Peasant economics* (Cambridge, 1993): 45-52; 201-23.

⁵¹ On the ‘inverse relationship’ see Partha Dasgupta, *An inquiry into well-being and destitution* (Oxford, 1993): 224-29.

⁵² ‘For how many, still, the hacienda was more a way of life than a business?’ (‘para cuántos todavía la hacienda era más un modo de vida que un negocio’, Barrán and Nahum, *Civilización*, 26); ‘the [Latin American large] estate owner is primarily a political, not an economic, man’ Ernest Feder, ‘The latifundia puzzle of Professor Schultz: comment,’ *Journal of Farm Economics* 49, 2 (1967): 507.

GRAPH 4.2. Estate sizes, output per hectare, soil quality, & pasture-to-cropland ratio, 1908



Notes: 'latifundia districts' are those with average estate sizes above 1,000 hectares.

Sources: 'Establecimientos agropecuarios por secciones', *Censo General 1908*, T.II, P.II: 1026-1035; *Clasificación de suelos del Uruguay*. Montevideo: Ministerio de Ganadería, Agricultura y Pesca, 1976; historical maps used for georeferencing and record linkage. See Table 4.1 for details on sources.

Hence, larger estate sizes did not reflect a district's revealed comparative advantage in pastoral production; rather, areas characterised by larger units were more likely to be specialised in livestock production, regardless of how good their soils were. Factor markets, not natural comparative advantages, are the key behind the 'inverse relationship' in the Uruguayan context. Land was cheaper for big producers—who already owned extremely large tracts which they could use as collateral to acquire more land—than for small ones, since the frontier was closed, public lands had been almost entirely privatised, and land prices rose by a factor of four during the First Globalization.⁵³ Labour, on the other hand, was relatively cheaper for small producers (who relied mostly on family labour) than for large ones. Latifundia and larger holdings in general also benefitted from the potential for greater specialization of labour, as well as cost economies in

⁵³ See the evolution of the land prices charted by Barrán and Nahum, *Crisis*, 637; *Revoluciones*, 467; *Civilización*, 429.

the bulk sales of their output.⁵⁴ Dual factor markets, with different relative prices for small and large producers, explain the ‘inverse relationship’, but fail to account for the different rates of herd improvement across the country.

If estate sizes do not explain regional divides in the adoption of technical innovation in Uruguayan cattle rearing, which factors do contribute to explain it? Cattle crossbreeding is the best documented of the agricultural investments of the late-nineteenth century, but it can only be understood in connection with other forms of investment in what historical ecologists call ‘landesque capital’: long-lasting landscape modifications that form ‘a carpet of investments covering the surface of the earth.’⁵⁵ Imported steel wire played a major role in those changes, making the physical definition of property rights cheaper and thereby encouraging the definitive consolidation of a capitalist land market, as economic historians have repeatedly pointed out.⁵⁶ But divisions within estates can be as important for capitalist agriculture as the enclosures separating them. Whereas before deep ditches needed to be dug or hardwood fences built to subdivide pastoral land (both of which were very labour-intensive methods, as we saw in Chapter 2), steel wire-fencing was more affordable, quicker to set up, and more reliable: a set of three or four strings held between hardwood posts could withstand over 1,400 kilos of force.⁵⁷

Accessible and strong steel wire ‘entirely changed the rearing process’, as one influential rancher put it; in terms of the general theme of this dissertation, it brought about a new ‘spatial code’ for cattle husbandry.⁵⁸ The creation of smaller, permanent *potreros* (paddocks) made it easier for producers to separate calves and mothers to encourage early weaning, to ensure cattle made the most of a paddock before moving to the next section of pasture, and to isolate sick animals. The relationship between these investments in the land and the improvements of the herds cut both ways: purebred and crossbred animals were often less hardy and more expensive than creole cows, which both encouraged a more intensive use of pastures through more micro-managed grazing and made it affordable. While the initial adoption of crossbreeding was closely linked to wire-fencing as a method of enclosure, the continued process of genetic improvement was facilitated by the *potrero* system within estates, allowing for more deliberate crossing of different stocks

⁵⁴ A short and clear theoretical presentation of these mechanisms can be found in Ellis, *Peasant economics*, 202-20.

⁵⁵ Mats Widgren, ‘Pre-Colonial Landesque Capital: A Global Perspective’, in *Rethinking Environmental History: World-System History and Global Environmental Change*, ed. Alf Hornborg, John R McNeill, and Juan Martínez Alier (Lanham, 2007): 64. See, for a survey of the concept across different literatures, Widgren and Håkansson, ‘Landesque Capital’.

⁵⁶ See, for example, Barrán and Nahum, *Historia Rural I*, 532-46; Millot and Bertino, *Historia económica*, 61-65; Moraes, ‘Capitalismo pastor’, 20.

⁵⁷ Details on the different resistance ratings offered by steel wires can be found in contemporary press; see, for example, Illustration 4.1 below.

⁵⁸ ‘Los alambrados han modificado por completo el sistema de crianza’ Ordoñana, ‘Zootecnia’, 117. Lefebvre’s concept of ‘spatial code’ was defined and expanded upon in Chapter 1; see Lefebvre, *Production*, 16-18, 46-48.

within or across estates, a practice known as ‘*cambio de sangre*’ (‘changing the blood’) which prevented undesirable characteristics from being passed down in a lineage.⁵⁹ Given these connections, it is unsurprising that ads for purebred bulls and for steel wire could be found side-by-side in Uruguayan newspapers at the time (Illustration 4.1). As a result of this anthropogenic intervention in the form of investments in landesque capital, the landscape was permanently transformed, and different kinds of pastures prospered across paddocks, while woody vegetation could thrive in the niches and galleries between them.⁶⁰

ILLUSTRATION 4.1. Ads for purebred bulls and wire fencing in *El Siglo*, October 1913
 ‘5 Hereford bulls of pedigree’ and ‘English steel wire: the best in the world’

Victorica y Muiños

5

TOROS HEREFORD DE PEDIGREE

Procedentes de la cabaña “El Lago” de los señores Carlos y Felipe Sanguinetti. SE REMATARAN EN NUESTRA CASA CALLE ORILLAS DEL PLATA Núm. 1014 - - -

El Martes 14 de Octubre á las 3 de la tarde

Comisión a cargo del comprador 3 ojo
 Pueden verse todos los días en el local de venta

Toros de “El Pilar”

Ofrecemos en venta á los criadores de Hereford

6 toros de pedigree 6

nacidos en la cabaña “El Pilar” de los señores Howard é hijos, de los mejores toros y vacas del establecimiento. Entre los padres y madres de estos toros hay varios Campeones aquí y en Inglaterra, y ganadores hasta de 21 primeros premios

Informes á nuestro escritorio Orillas del Plata 1014

ALAMBRE DE ACERO INGLÉS

EL MEJOR DEL MUNDO

Números	Resistencias	Tiros
19/17	1450 kls.	575 mts.
18/16	980 »	875 »
17/15	790 »	1080 »
16/14	630 »	1395 »

MARKA **CHINGOLA** REGISTRADA

Doble capa de galvanizado superior

BARRACA DEL FERROCARRIL

Maderas de todas clases, artículos de construcción en general
POSTES, PICKETS y ALAMBRES

JOSÉ RAMÓN PICCARDO
 Avenida General Rondeau, 2042 esq. Guatemala. Montevideo.

Source: BN, *El Siglo*, Año LI, Número 14.716, p. 8.

⁵⁹ On the connection between the initial adoption of crossbreeding and wire-fencing see the ranchers’ guild’s advice in ‘Atencion estancieros’, *Revista de la Asociación Rural*, 44 (1874), 478. On the advantages of ‘changing the blood’ see, for example, Domingo Ordoñana, ‘Memoria pastoril’, in *Pensamientos rurales sobre necesidades sociales y económicas de la República* (Montevideo, 1892): 370, and ‘Toros Hereford’, *El Siglo*, 14 October 1913, 4.

⁶⁰ Gautreau, ‘Rethinking the dynamics.’

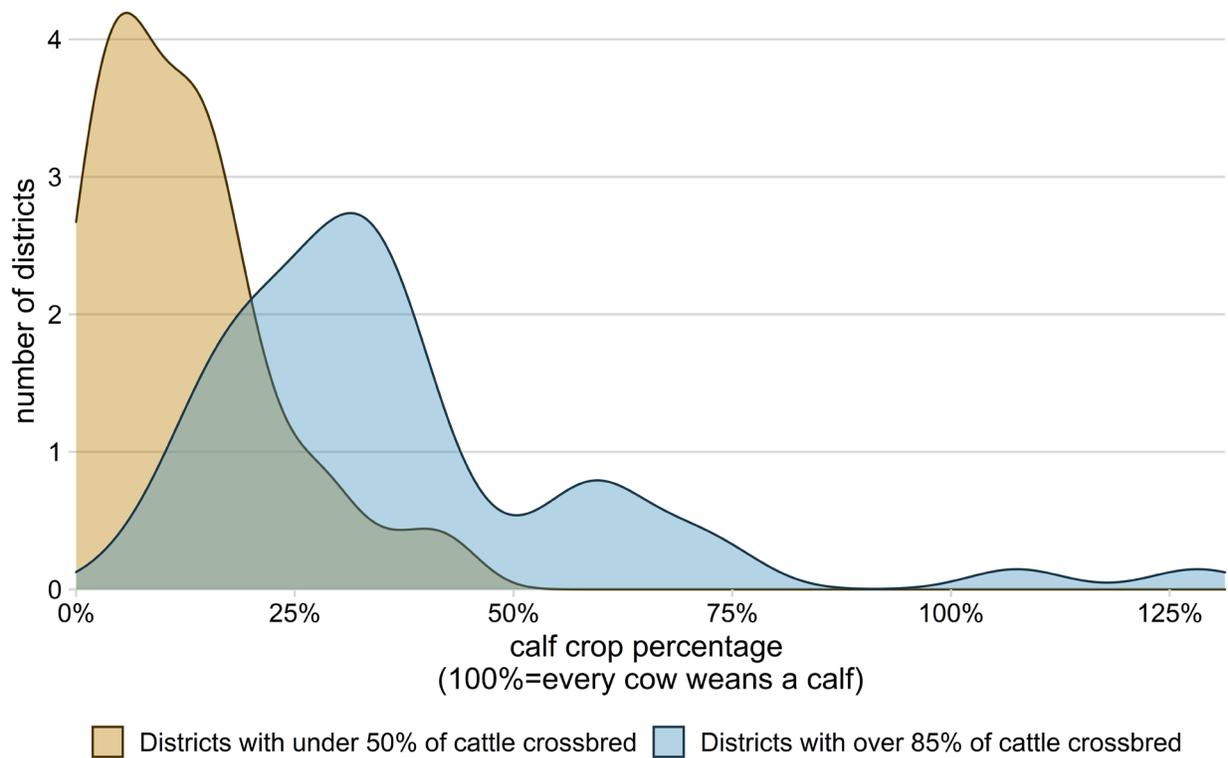
All these investments were more likely to take hold if soils were more fertile and could sustain grass growth better. The fact that local environmental conditions are intimately related to the successful adoption of biological innovations (new cultigens, varieties, rotations, or, in this case, new breeds of livestock) is well known to students of agricultural history. A major difference between agricultural and industrial technology is precisely that the former is much more 'circumstantially sensitive', which shapes the pace of the spatial distribution of technical progress as well as the limits of successful diffusion.⁶¹ Regional agro-ecologies defined the geography of cattle crossbreeding in Uruguay through their impact on the grass nutrients governing herd performance, which in turn affected the expected profitability of taking up that innovation. The 'cash-crop' of Uruguayan beef cow producers were weaned calves and young steers, for which meat factories paid more than for older animals, so an investment in crossbreeding was much more likely to be profitable in the short term if the local environment allowed for faster herd turnovers. The reproductive performance of a herd can be summarised in two variables: calving (yearly births as a share of the cows exposed to a bull) and weaning (successfully grown calves as a share of those born the previous year). Cows who are better and more consistently fed suffer fewer in-utero losses (which represent a larger loss in the case of more expensive animals), and their sucklings are more likely to survive and transition to eating grass more quickly. While stocking densities were similar across the country, levels of reproductive efficiency were not, and they differed depending on the genetic makeup of herds: areas which could support high turnover rates tended to have herds with a much higher share of crossbreds than areas with poor reproductive performance (Graph 4.3).

Soils have a defining impact on the consistency of natural vegetation growth and the dry matter yield of grass, which in turn put a limit to the reproductive efficiency of cattle in pasture-based ranching.⁶² These factors affected producers whatever their scale, and shaped the decision about whether to invest in improving the genetic makeup of their herds. The spatial distribution of innovation in Uruguay's rural modernization did not follow the geography of latifundia, but that of soils. The 'diabolical blessing' of the fertile natural grasslands was not so diabolical after all, at least from a regional perspective. Whether the consolidation of the country's specialization in livestock rearing had negative consequences for national economic development is a different question, one which Chapter 5 will take up.

⁶¹ Robert E Evenson and Larry E Westphal, 'Technological Change and Technology Strategy,' in *Handbook of Development Economics*, ed. T.N. Srinivasan and Jere Behrman (Amsterdam, 1995): 2248; Federico, *Feeding the World*, 103-05.

⁶² W.H. Schacht and P.E. Reece, 'Impact of Livestock Grazing on Extensively Managed Grazing Lands,' in *Environmental Impacts of Pasture-Based Farming*, ed. Richard W. McDowell (Wallingford, 2009); Marcelo Pereira Machín, *Manejo y conservación de las pasturas naturales del Basalto* (Montevideo, 2011).

GRAPH 4.3. Calf crop percentage in districts with low and high crossbreeding rates



Notes: Calf crop percentage estimated as the calving rate (calves born the previous year divided by number of adult female cows) times the ratio between weaned young steers (*novillos*) and calves (*terneros*), as a proxy for the weaning rate. Values over 100% suggest that ranches acquired additional steers in 1907-08.

Sources: ‘Ganado por especies, departamentos y secciones’, *Censo General 1908*, T.II, P.II: 990-997; ‘Ganado puro por razas, departamentos y secciones’, *ibid.*: 1088-1091; ‘Ganado mestizo por razas, departamentos y secciones’, *ibid.*: 1101-1106; ‘Ganado criollo, por departamentos y secciones’, *ibid.*: 1120-1124.

5 Conclusions

Through a quantitative analysis of livestock production and natural environments in Uruguayan rural districts in 1908, this chapter took up the long-running debate about the role of latifundia in the development of Latin American agrarian capitalism. While latifundia were very much present in one of the continent’s most successful cases of export-led development during the First Globalization, their effects on technical change in agriculture have been overstated by traditional historiography. Despite having a decisive influence on the specialization of market-oriented agriculture that predominated in different regions of the country, patterns of landholding did not substantially alter the effect that local environments, particularly soils, had on the adoption of cattle crossbreeding, the key biological innovation in Uruguay’s rural economy.

The historically far-reaching regional income divergences that were forged in this period, with most areas which lagged behind in the adoption of agricultural innovations remaining significantly poorer to the present,⁶³ cannot be laid at the door of latifundia alone, although a concentrated pattern of land tenure may have shaped the broader economic and social impact of their relative technical backwardness.

Ongoing research on Latin American historical economic geography will make it possible to map the rise of agrarian capitalism in the continent at large and the part that latifundia have played in it. In the meantime two conclusions can be put forward. Firstly, very large estates were neither an obstacle nor a necessity for rural modernization during the First Globalization. Uruguay's rural geography revealed that latifundia were not, simply as a consequence of being so large, any less likely to invest in cattle crossbreeding, a technology which increased output per worker as well as per hectare. It is quite possible that many large landowners did not see themselves as 'modern capitalists' and that they shared with other rural people the psychological attachment to land and livestock that historians have more often assumed than proved. But even if this was true it was not necessarily bad for business, as it did not constitute an obstacle to the adoption of productivity-enhancing innovations, or to the development of a different 'spatial code' which consisted in a landscape of wire-fenced estates, as well as in a more deliberate use of pastures and a greater attention to individual animals. At the same time, the results do not conform to the expectation of great estates being necessarily more efficient or innovative than smaller ones, an argument which has found theoretical support in followers of Marshall and Marx alike. Soils, rather than scale, hold the key to understanding the uneven spread of biological innovation in Uruguay's agricultural export economy during the First Globalization.

Secondly, the mechanisms driving the inverse relationship between the size of productive units and output per acre matter greatly and may be substantially different depending on the specifics of place and period. In Uruguay during the First Globalization, the inverse relationship was not an expression of a revealed natural advantage of some districts in pastoral or arable farming; rather, the specialization in extensive or intensive production resulted from the pattern of land tenure that each district inherited from preceding history. Areas with larger holdings were, regardless of their geography, more likely to be specialized in ranching, whereas those with smaller units specialized in cropping, even if their soils were not ideally suited to it.

A final word on inequality. This chapter has focused on the effects of large landholdings on biological innovation and agricultural specialization rather than on issues of distribution. The latter, however, should not simply be cast aside. The distributional outcomes of concentrated patterns of land tenure are of course crucial to our understanding of agrarian capitalism in Latin America, particularly in comparative perspective. The point that districts characterised by very large landholdings were not as a rule technically

⁶³ Martínez-Galarraga, Rodríguez Miranda, and Willebald, 'Patterns'.

'backward' is not intended as a moral defence of latifundia, nor as an argument for their 'historical necessity' in Uruguay or elsewhere. In fact, the quantitative analysis pursued here suggests that large landholdings were not more innovative than smaller ones, and were therefore far from necessary for the development of agrarian capitalism. These conclusions should be taken as an invitation to consider land tenure institutions and landholding patterns through their productive interactions with landscapes and factor endowments, and to think about inequality in that context.

~ ✎ ~

chapter five

Occupations and the Nature of Rural Development, 1890-1908

The previous chapter examined how the livestock economy of modernising Uruguay made productive use of land, demonstrating the impact of specific kinds of soils and landownership structures on economic strategies. This chapter focuses on people, as population and as labour resources, mapping their distribution across the territory and between economic sectors to quantitatively reassess one dimension of the contribution of workers to Uruguay's rural development at the height of the country's 'modernization'. In so doing, it attempts to answer three interrelated questions: what was the impact of agricultural modernization on rural workers and their livelihoods; how large and how productive was the agricultural workforce; and to what extent did export-oriented agriculture contribute to wider economic development.

Between 1872 and 1908 the volumes of meat and wool produced per hectare in Uruguay more than doubled.¹ The conventional wisdom has long been that the livestock economy achieved this largely without creating more jobs, because of its reliance on increasingly wire-fenced, capitalised, and specialised large estates, which had outsourced some of the more labour-demanding ranching tasks (slaughtering, skinning, droving) to meat factories, tanneries, and railroad companies. As a result, in this account, pastoral agriculture was unable to create opportunities for employment or technological change, and, therefore, could never become the cornerstone for long-term development.² Meanwhile, crop farmers working smaller holdings are thought to have been generally too poor themselves to employ more workers. And so, across the 'latifundia/minifundia' divide, the rural economy expelled workers rather than retain them. Because most people in Uruguay still lived in the countryside, it is widely accepted that this process led to widespread rural poverty which fuelled both political violence, in the uprisings of 1897 and 1904, and rural-to-urban migration.³ Scholars have found exceptions to this general pattern, pointing to some labour-intensive niches

¹ Moraes, *Pradera*, 113.

² For two classic statements of this argument, from economics and history respectively, see Instituto de Economía, *El proceso* and Barrán and Nahum, *Agricultura*, 177-99.

³ The classic account of rural impoverishment (*pobrerío rural*) in this context is Barrán and Nahum, Barrán and Nahum, *Revoluciones*, 21-47. See also Aldo E. Solari, *Sociología rural nacional* (Montevideo, 1958); José Pedro Barrán

such as sheep shearing.⁴ But the premise that the rise in agricultural output and productivity during ‘modernization’ destroyed more rural jobs than it created remains nearly universal, despite the fact that no detailed occupational data has been mobilised to prove this point, and no pre-1908 estimates of the employment structure of the economy even exist.

This chapter fills that gap by examining the history of occupational structures in the period. It provides original, detailed, and internationally comparable data on the occupations of informal as well as formal workers in rural and urban Uruguay in 1890 and 1908. To do this, a diverse but cohesive set of sources was explored, including population and agricultural censuses as well as individual-level sources (Table 5.1). The emphasis throughout is on relative shares more than absolute numbers, not only because margins of error are smaller for the former, but also because very fast demographic growth in this period means that in absolute terms employment across most sectors must have grown significantly. In the two decades before 1910, Uruguay received, relative to population, more immigrants than the United States, and was only behind Argentina and Canada in global immigration rates.⁵ Natural population growth contributed as much as immigration to population increases, as fertility rates remained at pre-demographic transition levels while mortality decreased.⁶ Changes or continuities in agricultural employment should be then understood as reflecting primarily the livelihoods and choices of new entrants to the labour market, whether immigrants or young Uruguayans.

and Benjamín Nahum, *Batlle, los estancieros y el Imperio Británico* (Montevideo, 1979); Millot and Bertino, *Historia económica*, 39; Moraes, *Pradera*, 91-93. On the idea that wire-fencing caused widespread ‘technological unemployment’, see Barrán and Nahum, *Historia Rural I*, 557-66.

⁴ Diego Piñeiro, Mariela Bianco, and María Inés Moraes, *Trabajadores de la esquila: pasado y presente de un oficio rural* (Montevideo, 2003); María Inés Moraes, *El trabajo de la esquila y los esquiladores: algunos aspectos de su historia social (1860-1970)* (2002); Millot and Bertino, *Historia económica*, 48-55. For a description of sheep shearing crews and their work, see Roberto J. Bouton, *La vida rural en el Uruguay* (Montevideo, 1961): 252-54.

⁵ Sánchez Alonso, ‘The other Europeans’, 400. On Uruguay’s migration policy, see Carlos Zubillaga, *La utopía cosmopolita. Tres perspectivas históricas de la inmigración masiva en Uruguay* (Montevideo, 1998): 61-98 and María del Pilar Cagiao Vila, ‘La inmigración gallega en Uruguay (1870-1936)’, *Anuario Americanista Europeo*, 3 (2005).

⁶ Adela Pellegrino and Raquel Pollero, ‘Fecundidad y situación conyugal en el Uruguay. Un análisis retrospectivo’, in *Cambios demográficos en América Latina: la experiencia de cinco siglos*, ed. Dora Estela Celton, Carmen A. Miró, and Nicolás Sánchez-Albornoz (Córdoba, 1998).

TABLE 5.1. Sources for reconstructing the occupational structure of Uruguay, 1890-1908

	Male occupations	Female occupations	Spatial resolution	Date	Adults with occupation	Method used
1908 Uruguay population census	209	61	Provinces	12/10/1908	297,975 men 57,846 women	Coding of all data
1908 Montevideo population census	212	58	Province	12/10/1908	120,189 men 21,624 women	Coding of all data
1908 Uruguay agricultural census	4	4	Districts	Sep-Nov 1908	69,399 men 22,917 women	Recalculation (see text)
1890 Uruguay birth records	67 (in sample)	inconsistently reported	Districts	Jan-Dec 1890	27,899 fathers	Random sample
1890 Montevideo birth records	58 (in sample)	inconsistently reported	Districts	Jan-Dec 1890	8,218 fathers	Random sample
1889 Montevideo population census	175	61	Province	18/11/1889	73,812 men	Coding of all data

Notes: ‘Adults’ refers to people 15 years old and older. ‘Adults with occupation’ refers to those people who were recorded with gainful employment.

Sources: Dirección General de Estadística: *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*, Tomo II, Parte II, 1911; *Anuario Estadístico 1885*, p. 129; *Anuario Estadístico 1893*, p. 118; Junta Económico-Administrativa de Montevideo: *Censo Municipal del Departamento y la Ciudad de Montevideo*, Montevideo: Establecimiento Tipográfico Oriental, 1892; Registro General de Estado Civil (Uruguay), *Libros de Partidas de Nacimiento*.

The chapter is divided into three parts. The first section reconstructs the employment of women and men in 1908, as well as district-level population densities across the country, to paint a picture of the sectoral demands for labour resources towards the end of ‘rural modernization’. The second section studies the pre-census period making extensive use of the birth records from the *Registro de Estado Civil*, an extremely rich archival trove resulting from the state taking over registration from the Catholic Church and which, to my knowledge, has never been systematically used by historians before. The third section offers new estimates of sectoral productivity and uses them as a vantage point to revisit the debates on the potential of export agriculture to sustain long-term development in Uruguay and beyond. The conclusion takes stock of the results and summarises their challenges to the conventional wisdom.

1 The world of work in 1908

The 1908 population census provides the best starting point for reconstructing Uruguay's occupational structures in the period of export-led growth, large-scale immigration, and agricultural change during the First Globalization. It was part of a major statistical project (including agricultural, industrial, and housing censuses) with which the government, emerging victorious from the last civil war (1904), tried to cement its programme of reforms. An unprecedented and carefully planned operation using the latest technology available, the 1908 population census is considered a seminal enumeration by historical demographers, and one reflecting the planning concerns of an emerging welfare state.⁷ Moreover, and crucial for present purposes, it was the first nation-wide enumeration to record people's occupations and its planning commission were keenly aware of the need for detail in such data. Census-takers were instructed to 'avoid terms which are too general, such as merchant or dealer, factory worker, artist, teacher, employee, or day labourer', and to prompt 'the maker or dealer to make explicit the kind of articles he produces or deals in; the artist to say whether he is a painter, a musician, a theatre actor, or a poet, etc.; the sculptor whether he works on wood, marble, etc.', as well as, and quantitatively more importantly, asking 'the day labourer whether he is a farm worker, a ranch hand, a meat factory worker, a rail worker, a builder's labourer, a road worker, etc.'⁸

1.1. The 1908 census: promise and pitfalls

Despite the population census's generally well-executed ambition, from the point of view of its potential to provide high-quality occupational data it proves problematic on two fronts. First, the general returns reported a considerable share (c.20%) of day labourers (*jornaleros*) in the male workforce, without offering any indication as to their sectoral employment. Given that the enumerators' books were destroyed on account of the answers to questions concerning religious beliefs needing to remain anonymous, the planners'

⁷ Juan José Calvo, 'Introducción,' in *Detrás de los tres millones*, ed. Programa de Población (Montevideo, 2013): 9; Adela Pellegrino, *La población de Uruguay. Breve caracterización demográfica* (Montevideo, 2010).

⁸ 'Se evitarán los términos demasiado generales de comerciante ó negociante, industrial, artista, profesor, empleado, peón jornalero, etc., debiendo especificarse con precisión el ramo de comercio, industria, arte-enseñanza ó trabajo del censado, y hasta en ciertos casos, la materia que se elabora; el fabricante ó comerciante expresará la clase de artículos que fabrica ó en que comercia; el artista dirá si es pintor, músico, dramático, lírico, etc.; el escultor; si lo es en madera, marmol, etc.; el profesor, si lo es de dibujo, esgrima, instrucción primaria, etc.; el mecánico ó maquinista, si lo es de ferrocarril, vapor, etc. el empleado público, si lo es de policía, correos, aduana, etc.; el empleado privado, si lo es de tienda, almacén, café, banco, ferrocarril, telégrafo, etc.; el peón, si lo es agrícola, de estancia, saladero, ferrocarril, albañil, caminero, etc.' BN, Sala Uruguay, Registro Número 101365, Dirección del Censo Nacional, "Instrucciones para el levantamiento de los censos," item VIII, questions 14 and 15 (September 24th, 1908).

efforts to provide posterity with detailed information about the work of labourers were foiled. Second, the official figures seem to grossly underestimate female labour in agriculture: the implied share of primary sector workers who were women is below 5%. Taken at face value, this figure would lend support to the idea that (especially export-oriented) agriculture did not offer women opportunities to make money. Let us consider how male day labourers can be allocated to the sectors they worked in, as well as how the problem of the under-reporting of female agricultural workers can be tackled. As we will see, these issues are far more than a matter of statistical hair-splitting and can reshape our understanding of agricultural work and workers in modernising Uruguay.

The methodological problem of estimating the agricultural/non-agricultural breakdown of a considerable number of workers described as 'labourers' in historical sources is not unique to Uruguay. It is also not simply a result of problematic registration practices, but an issue revealing of seasonality in employment opportunities and composite, multi-sited economic strategies: the same worker could harvest wheat in January and build roads in May, and was not necessarily in employment all year round.⁹ In the context of late-nineteenth century Uruguay, the expression *peones jornaleros*, or simply *jornaleros*, can be translated as 'day labourers': employees paid in money wages which were calculated on a daily basis. They worked in farms and ranches, but also in factories or docks, or even for the state building roads. This lack of precision in the registration of such workers is found in many other places: a similar description would fit, for example, about a third of adult male workers in England and Wales in 1817, according to a quasi-census of employment produced by the Cambridge Group for the History of Population and Social Structure.¹⁰ In the British case several methods have been used to allocate labourers between sectors, resulting in widely different pictures of the shape of the economy: Crafts allocated all labourers to agriculture; Broadberry, Campbell, and van Leeuwen assumed that the labourers' agricultural/non-agricultural split was analogous to that of non-labourers (which is basically the same as not including labourers in any sector); Shaw-Taylor and Wrigley used the labourers-to-non-labourers ratio across sectors of a later census, while Keibek estimated the number of labourers required by agriculture through parish-level regression analyses.¹¹

⁹ Juan Rial, *Población y desarrollo en un pequeño país: Uruguay, 1830-1930* (Montevideo, 1983).

¹⁰ P.M. Kitson et al., 'The creation of a "census" of adult male employment for England and Wales for 1817,' *Cambridge Working Papers in Economic and Social History*, 4 (2012).

¹¹ N. F. R. Crafts, *British Economic Growth During the Industrial Revolution* (Oxford, 1985): 14; Stephen Broadberry, Bruce Campbell, and Bas van Leeuwen, 'When did Britain industrialise? The sectoral distribution of the labour force and labour productivity in Britain, 1381-1851,' *EEH* 50, 1 (2013): 17; Leigh Shaw-Taylor and E. A. Wrigley, 'Occupational structure and population change,' in *The Cambridge Economic History of Modern Britain*, ed. Roderick Floud, Jane Humphries, and Paul Johnson (Cambridge, 2014); Sebastian A.J. Keibek, 'Allocating labourers to occupational (sub)sectors using regression techniques,' *Cambridge Working Papers in Economic and Social History*, 27 (2017).

In the Uruguayan case, these methods are either implausible (allocating all labourers to agriculture in a country with an urbanization rate of c.40% would be ill-advised, and assuming labourers distribute themselves in sectors just like workers with specific trades seems unwise in most contexts), or impracticable due to lack of sources: the next census returns reliably reporting labourers by sector are from 1963, by which point technology and production processes were very different in agriculture; and labourers in the 1908 returns are reported only at the level of 19 provinces, a spatial resolution which cannot produce meaningful estimates on the regional labour requirements of agriculture based on soil quality and other factors. However, the number of male labourers in the primary sector can be estimated by comparing the returns of the 1908 population census with the agricultural census conducted that same year. These enumerations not only counted the agricultural workforce (L) in 1908, but they did so from different perspectives. The population census asked questions with the aim of describing the workforce from the perspective of their ‘profession’, differentiating between men with specific rural trades (L_{sp}) such as shearers, horse-breakers, and drivers, and those agricultural labourers (L_{lab}) with no specified occupation (equation 1). L_{lab} is unknown to us, however, because the final census returns add up all labourers (agricultural or not) in the same category, and no other returns survive. On the other hand, the agricultural census looked at labour relations, asking whether men in the countryside were wage-earning employees (L_w) or employers (L_e), reporting the number of ‘male staff’ in each rural district as well as the number of farms or ranches ‘exploited [worked] by their owners’ (equation 2). Given I will classify occupations based on descriptors reflecting both the specific tasks performed at work and the hierarchy in the workplace, these two complementary ways of looking at the male workforce can be used to calculate L_{lab} , that is, the number of rural labourers (equation 3).

$$L = L_{sp} + L_{lab} \quad [1]$$

$$L = L_w + L_e \quad [2]$$

$$L_{lab} = L_w + L_e - L_{sp} \quad [3]$$

Because the agricultural census and the population census were both taken during spring (when labour requirements were higher than in winter, but lower than in summer), this simple calculation offers a plausible estimate for the average agriculture/non-agriculture split of labourers throughout the year, and one which has the advantage of being based on primary sources from the time and place for which the estimate is produced. The resulting figure for L_{lab} was added to the agricultural workforce and divided between arable and pastoral agriculture using the agricultural census’s categorization of productive units. The remaining labourers were allocated 2-to-1 between the secondary and tertiary sector, as the former containing the sub-sectors more commonly associated with labourers according to the census board’s

instructions to census-takers. These labourers were included in the residual categories within those sectors, as I was not able to allocate them to specific industries.

A similar approach can be taken to the problem of female participation in the primary sector. The figure reported in the agricultural census of women employed in farms and ranches is much higher than the population census's total of women with occupations in arable or pastoral agriculture. This suggests that the assumption some scholars have made that the population census counted people engaged in domestic labour in the countryside as agricultural workers is mistaken.¹² Again, given that the censuses were taken in the same season of the same year, it can be reasonably assumed that the population census, which had the household as its unit of analysis, generally recorded women as 'farmers' or 'ranchers' only if they owned the land or were considered the head of their household. In addition, a small share of women were recorded with specific agricultural trades (orchard grower, vine grower, herder, etc.), but there was no occupational category for farmers' wives or daughters who worked the land. The agricultural census's returns, however, had farms and ranches as units of analysis, and the respondents presumably included everyone (or at least closer to everyone) who worked in the productive unit, distinguishing between men, women, and children. Therefore, I have recalculated the female workforce in agriculture by adding the number of adult female staff in farms and ranches reported in the agricultural census (which presumably includes women with specific rural occupations) to the number of female 'farmers' and 'ranchers' recorded in the population census. This results in the female share of the agricultural workforce increasing from below 5% to over 20%: likely still an understatement, but a much more reasonable figure that more accurately describes women's contribution to arable as well as pastoral farming, on which more later.

With all these corrections, we can produce a detailed occupational structure of Uruguay in 1908 (Table 5.2).¹³

¹² See, for the most influential example, Juan José Pereira and Raúl Trajtenberg, *Evolución de la población total y activa en el Uruguay, 1908-1957* (Montevideo, 1966).

¹³ The occupational classification is based on the PSTI system, September 2019 version; details can be found in the Appendix and the data are available in Excel format in the Additional Materials. PSTI is an occupational coding system designed by the Cambridge Group for the History of Population and Social Structure for international comparison, on the basis of E. A. Wrigley, 'The PST System for Classifying Occupations,' (Cambridge, 2010). Even though the Uruguayan sources report workers of all ages, all the data presented here refers to workers over 15 years old, to allow for comparison with the rest of the countries where the PSTI occupational data has been produced.

TABLE 5.2. Occupational structure of Uruguay, 1908 (shares) (including labourers)

	Male workers	Female workers	All workers	Female share
Primary	38.5	36.3	38.0	21.1
Arable farming	20.1	15.7	19.1	18.0
Livestock farming	18.0	18.4	18.1	22.4
Rest of primary	0.3	2.3	0.8	65.3
Secondary	29.0	18.1	26.6	15.0
Construction	6.5	0.1	5.1	0.2
Food industries	2.6	1.3	2.3	12.2
Textiles	2.4	4.1	2.8	32.6
Clothing	0.1	12.7	2.9	96.9
Blacksmiths and metalworkers	1.3	0.0	1.0	0.0
Printers, bookbinders	0.5	0.0	0.4	0.0
Leather industries	0.5	0.0	0.4	0.0
Tools and machines	0.8	0.0	0.6	0.0
Rest of manufacturing	2.3	0.3	1.8	4.1
Mining and quarrying	0.6	0.0	0.4	0.0
Rest of secondary (incl. labourers)	11.5	0.9	9.2	2.1
Tertiary	32.5	45.5	35.4	28.3
Retail and wholesale	9.5	0.9	7.6	2.6
Government	6.1	0.0	4.8	0.2
Transport	3.1	0.1	2.4	1.2
Domestic and personal service	1.5	30.5	7.9	85.2
Financial and commercial services	1.2	0	0.9	0.7
Food and accommodation services	0.4	5.1	1.5	76.8
Education	0.4	3.4	1.0	72.5
Law	0.5	0.0	0.4	0.2
Medicine	0.2	0.0	0.1	1.3
Other employees in services	6.5	4.4	6.1	16.1
Rest of tertiary	3.2	1.0	2.7	8.2
Total	100	100	100	22.0
<i>Participation rate</i>	88.4	26.1	57.9	

Notes: values in columns 1-3 refer to the percentage of gainfully employed people (men, women, or both) working in each (sub)sector; column 4 ('female share') refers to the share of total workers in any one (sub)sector who were women.

Sources: 1908 population census and 1908 agricultural census (see Table 5.1 for source details).

1.2. Population geography and employment: solving the rural paradox

This new estimate of Uruguay's occupational structure sheds new light on the nature and extent of rural development at the height of the era of export-led growth during the First Globalization. Until now, the consensus among historical demographers that Uruguay's population was still predominantly rural by 1908, with about 60% of people living in small settlements of under 2,000 inhabitants, has not been reciprocated by economic historians with a similarly agreed-upon figure for the size of the agricultural workforce (Table 5.3).¹⁴ The most influential estimates published to date suggest that fewer people worked in pastoral or arable farming (28 or 33 per cent) than in the service sector, with only about half of the rural population employed in agriculture. These would suggest either extremely diversified village economies that do not fit their very low population densities, or widespread unemployment and poverty across much of the countryside, which is inconsistent with the still relatively low incidence of rural-to-urban migration: in this period the growth of Montevideo and other cities was due more to overseas immigrants and natural population increase than to rural-to-urban migration.¹⁵ The only other published estimate provides a much higher figure for agriculture's share of the workforce (almost 45 per cent) which would suggest either that productivity gains in livestock agriculture were much less impressive than economic historians have established, or that rural under- or occasional employment predominated over year-round work.¹⁶ More importantly, all three existing estimates do not use any other primary sources beyond the 1908 population census to allocate labourers, nor do they correct the undercounting of female workers.

No new estimates have been published since 1981, so more recent contributions to the debate on the nature and consequences of rural modernization have simply chosen one of these three existing estimates.¹⁷ The existing figures tell two incompatible stories: either Uruguay's successful agricultural economy was unable to sustain the livelihoods of its mostly rural population, or productivity gains during 'rural modernization' were not as impressive as economic historians have shown.

¹⁴ The first official census reporting urbanization rates for Uruguay is from 1963; demographers estimate, on the basis of district returns, that between 40.5 and 44.7 percent of population lived in towns of more than 2,000 inhabitants by 1908. See Juan Rial and Jaime Klaczko, *Uruguay: el país urbano* (Montevideo, 1981).

¹⁵ Large-scale rural-urban internal migration in Uruguay consolidated after the period under study, particularly in the second half of the 20th century; see Mario Lombardi and Danilo Veiga, 'Estructura socioeconómica y distribución espacial de la población en el Uruguay,' *Cuadernos del CIESU* 33 (1980).

¹⁶ See, for an overview of productivity improvements in the period, Moraes, 'Capitalismo pastor'.

¹⁷ See, for example, Millot and Bertino, *Historia económica*, 40-41; Bértola, 'Primer Batllismo', 175; Martínez-Galarraga, Rodríguez Miranda, and Willebald, 'Patterns'.

TABLE 5.3. Published estimates of the workforce in agriculture in Uruguay, 1908

	Workforce in agriculture (%)	Largest employer	Method of allocation of labourers	Sectoral classification method
Rama (1969)	28.5	Services	Allocated equally between secondary and tertiary sectors	Census's subtotals by sector
Klaczko (1979)	44.1	Agriculture	All labourers living outside the capital allocated to agriculture	Census's subtotals by sector
Rial (1981)	33.4	Services	None: labourers subtracted from the workforce	Census's subtotals by sector
New estimates (this chapter)	38.0	Agriculture	Calculated labourers in arable and pastoral agriculture from primary data; remaining labourers allocated 2-to-1 between secondary and tertiary sectors	Sectoral employment calculated from individual occupational categories

Sources: Rama, *Ascenso*; Klaczko, 'Población'; Rial, *Población*, and author's calculations (see text).

Neither of those stories hold up to the evidence. Our new estimate offers the first attempt to solve the agricultural/non-agricultural split of labourers with reference to primary sources rather than a guesstimate, and recalculates agricultural employment on the basis of individual occupational categories, rather than taking the census's subtotals at face value. The results demonstrate that by 1908 Uruguay's rural economy was still overwhelmingly agricultural. Arable and pastoral farming remained the foundation of rural livelihoods for two out of three adults, as agriculture was the employer of last resort for most rural people and the largest sectoral employer in the economy at large. This fundamentally challenges the picture painted by Rama's influential estimates, popularised in the most widely cited economic histories of Uruguay and Latin America by Finch and Bulmer-Thomas respectively, which implausibly suggested that the relative size of the Uruguayan agricultural labour-force was very similar to Australia's or New Zealand's, economies with average incomes 50% higher than Uruguay's.¹⁸

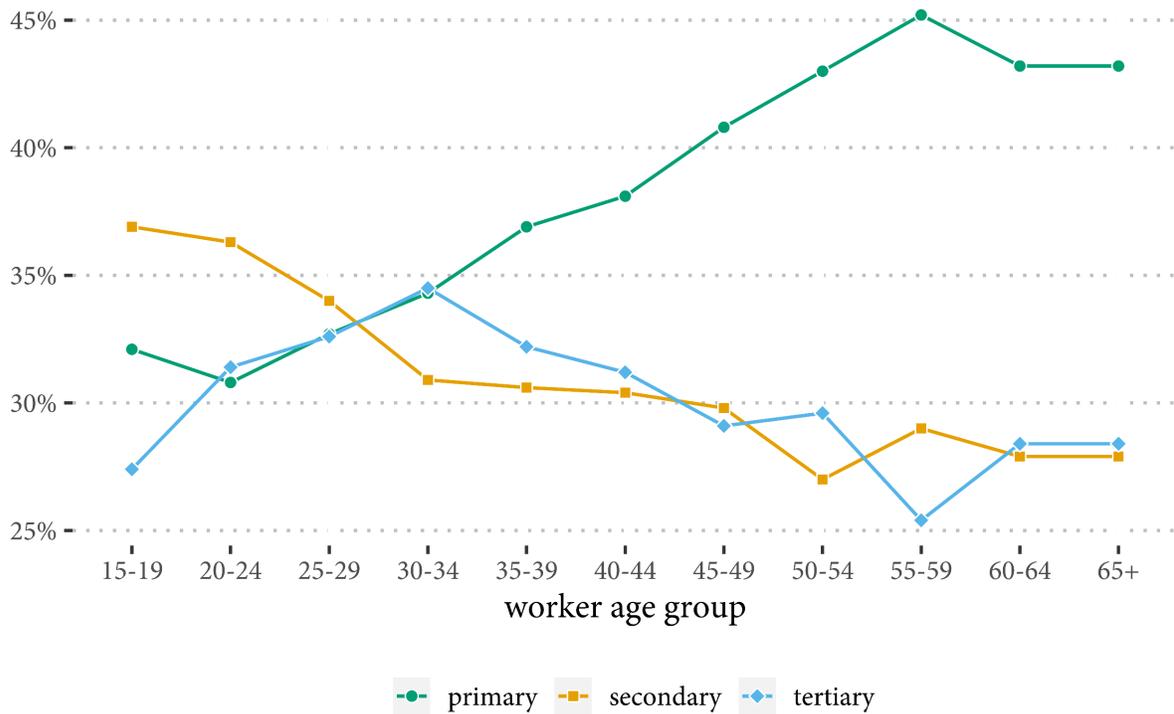
On the other hand, my new estimate is, as we will see below, more optimistic than Klaczko's about the labour productivity of the Uruguayan livestock sector, and so is more in line with rural historians' account of agricultural change in the period. Moreover, with about 60% the population living in rural areas and villages, the fact that less than 40% of workers were employed in agriculture suggests that agricultural

¹⁸ M. H. J. Finch, *A political economy of Uruguay since 1870* (London, 1981): 76; Bulmer-Thomas, *Economic History*, 120. For income comparisons, see Bolt et al., 'Rebasing "Maddison"'.

productivity was high enough to sustain not only large urban centres, but also a degree of differentiation and labour specialization in market towns as well.

While agriculture remained in 1908 the largest employer, farming and ranching no longer accounted for most of the workforce. The age structure of male workers by sector offers a picture of the process underway, with older workers concentrated in agriculture and younger men, especially the teenage new entrants to the labour market, finding employment mostly in the secondary sector (construction and manufacturing) and services (Graph 5.1). As we will see below, this age structure also relates to the demographic profile of migrants, who were on average younger than local economically active men and tended to find work outside agriculture.

GRAPH 5.1. Male occupational structure by age groups in Uruguay, 1908
Share of the male workforce by age cohort and sector (not including labourers)



Source: 1908 population census (see Table 5.1 for source details).

These employment dynamics also shaped the spatial distribution of Uruguay's population, which we can now map for the first time in detail: an almost empty central plain surrounded by a few towns (Map 5.1). The dominance of livestock over crops, central to the 'spatial code' of agrarian capitalism in the country, promoted the population geography characteristic of modern Uruguay: an expanse of lightly populated grassland villages surrounded by a few distant cities, rather than many small market towns.¹⁹ The areas of horticulture, dairy production, and especially grain and wine farming in the south and south-west, islands of ploughs in a sea of pastures, were the regional space that came the closest to a continuum of sizable settlements.

This pattern of occupations is consistent not only with Uruguay's urbanization rate, very high by Latin American standards, but also with the size of its capital in particular.²⁰ Montevideo was by 1908 a metropolitan city of over 300,000 inhabitants, and would remain throughout the twentieth century about ten times more populous than the second largest town.²¹ From an economic geography perspective, Montevideo combined a series of agglomeration advantages and catalysts that explained its size: it was the political capital as well as the major port and, except for meat-packing in the western littoral, it was also home to the largest factories. These advantages, consolidated in the context of agricultural intensification in this period, contribute to explain why Uruguay does not follow the rank-size rule of urban hierarchy, a regularity found in historical demography when the second city in a country is about half as large as the first and so on.²²

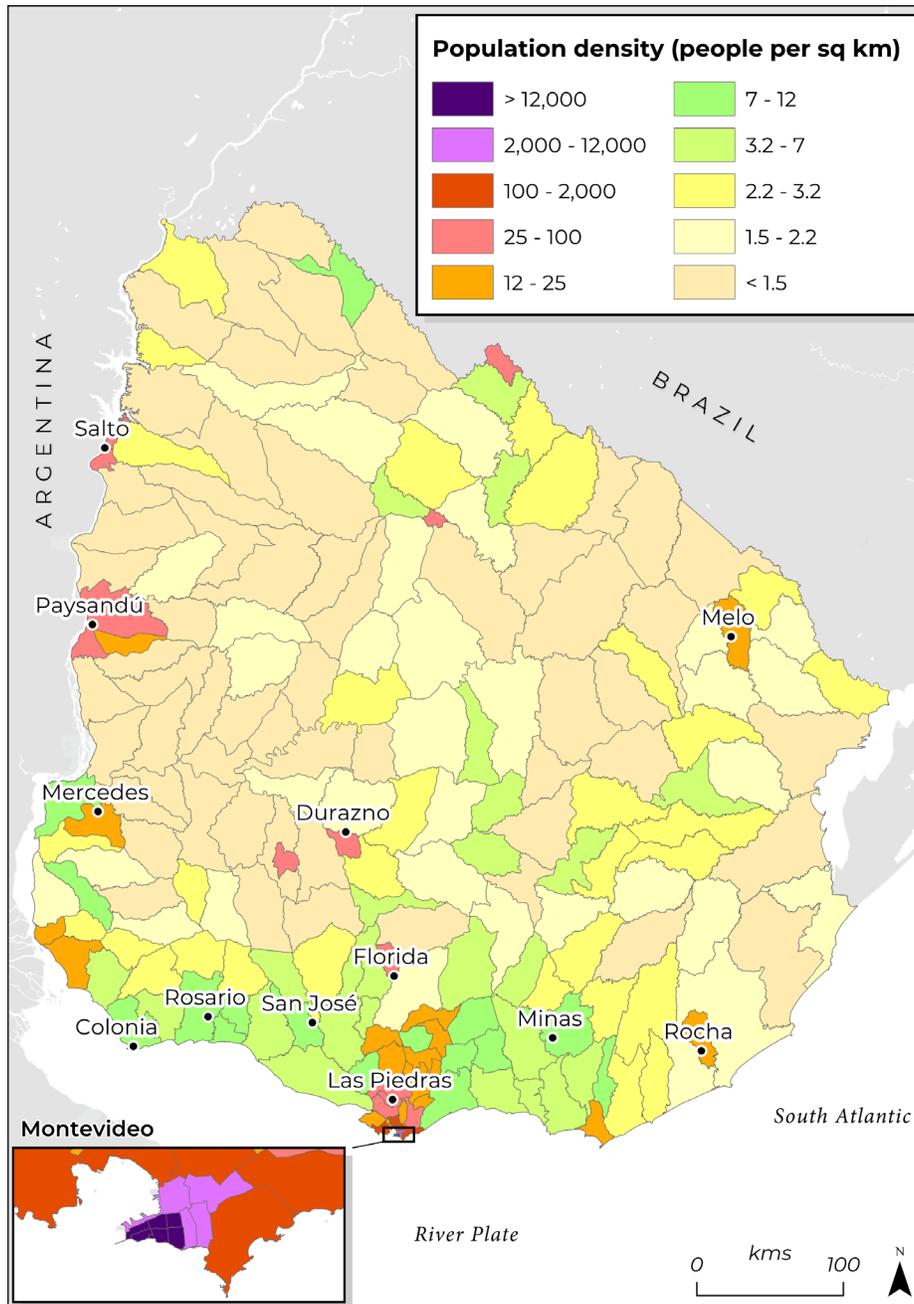
¹⁹ See Chapter 4 for an analysis of the geography of agriculture in this period. The link between pastoral specialization and population geography in Uruguay was first hypothesised by Susana Prates, *Ganadería extensiva y población* (Montevideo, 1976) and Danilo Veiga, *Regional Development and Population Distribution in Uruguay* (Montevideo, 1979). The concept of 'spatial code' was introduced in Chapter 1; its original formulation can be found in Lefebvre, *Production*.

²⁰ Rial and Klaczko, *País urbano*.

²¹ Juan Rial, 'Uruguay. La génesis de un país urbano macrocefálico,' *Revista EURE-Revista de Estudios Urbano Regionales* 11, 31 (1984).

²² For a discussion of the rank-size rule and urban hierarchy in economic history, with particular reference to England, see Wrigley, *Poverty*, 253-57. For European evidence in support of the rule, see the seminal Jan de Vries, *European Urbanization 1500-1800* (London, 1984).

MAP 5.1. Population geography of Uruguay, 1908
 Districts in each category add up to 10% of the national population
 Towns over 10,000 inhabitants shown. Montevideo in inset map



Sources: drawn by the author from the district-level returns of the 1908 population census (see Table 5.1).

The importance of services and manufacturing in the occupational structure is also a function of comparatively high average living standards, which, given different income elasticities of demand, made the market for manufactures and services grow faster than the market for foodstuffs. Moreover, the variety of non-agricultural occupations can be linked to improvements in schooling in the late-nineteenth century, leading to Latin America's highest literacy rate (c.60% in 1908) for women as well as men. This was a result of both state investment in public schools and living standards being high enough to allow many children the free time to go to school daily.²³ The expansion in primary education was fundamentally built upon female labour: schoolteachers were mostly young and came from rural villages, even if they were all trained in Montevideo since 1882.²⁴ Educational attainment beyond primary schooling can also be seen in the occupational data, which already showed the first female university graduates as physicians and lawyers in the first decade of the twentieth century.

Given the lack of directly comparable estimates for other Latin American countries, we cannot yet ascertain how typical or atypical this structure is in the continent, or how representative it is of the Southern Cone in particular. Nevertheless, comparison with Spain and Italy, from where most migrants came to Uruguay in this period, is particularly instructive. The share of the labour force in agriculture only dipped below 40% in Italy in the 1950s and in Spain in the 1960s, a full half century after Uruguay.²⁵ Despite being, like them, an agricultural exporter, Uruguay's livestock economy required a much smaller share of the workforce than Spain's or Italy's agrarian production. Given such different economic structures, it is unsurprising that real wages in Uruguay were three times higher than the southern European average.²⁶ The hundreds of thousands of migrants that disembarked in Montevideo were therefore moving to an economy with a substantially different employment pattern, and they adapted and contributed to it. As part of the 'late' wave of movers in the age of mass migration, they were mostly male and young.²⁷ Migrants entering the labour market found employment disproportionately in the secondary sector: foreign-born males, who represented by 1908 32% of the total adult male population, constituted in my estimates up to half of the

²³ Sokoloff and Engerman, 'Institutions.'

²⁴ For an excellent account of the part played by female schoolteachers in the expansion of mass education in rural as well as urban Uruguay, see Jens R Hentschke, 'More than "queens of the home": positivist modernisation, teacher training, and gender mobility in Uruguay, 1882–1915,' *Journal of Iberian and Latin American Studies* 19, 1 (2013).

²⁵ Natalia Mora-Sitja, 'Spain,' in *Occupational Structure and Industrialization in a Comparative Perspective*, ed. Osamu Saito and Leigh Shaw-Taylor (Cambridge, forthcoming); Paolo Malanima and Vittorio Daniele, 'Italy,' in *Occupational Structure and Industrialization in a Comparative Perspective*, ed. Osamu Saito and Leigh Shaw-Taylor (Cambridge, forthcoming).

²⁶ Williamson, 'Real wages.'

²⁷ María Magdalena Camou, 'Family formation, gender and labour during the First Globalization in Montevideo, Uruguay,' in *Cliometrics of the Family* (2019).

male workers in construction and machine making, and more than 60% of those in textile production and shoemaking as well as food and accommodation services.²⁸ Social historians have shown that Spaniards and Italians were also over-represented among owners of manufacturing firms and workshops, and often outnumbered locals in the leadership of trade societies and unions.²⁹ Female migrants, for their part, made up 21% of adult women in 1908, and those who entered the workforce had an employment structure much more similar to that of Uruguayan female workers, concentrating in some of the same sub-sectors (domestic service, textiles, and clothing), although foreign women were over-represented in food and accommodation services and significantly under-represented in livestock farming. This is, to an extent, the result of human capital dynamics: most farmers of any sort were born into farming families, and thereby acquired specific skills. But it was also related to the issue of access to land: unlike in next-door Argentina, the agricultural frontier in modernizing Uruguay had been closed for longer, and so relatively fewer immigrants could become farmers.³⁰

This under-representation in pastoral agriculture extended also to male foreigners, who accounted for only 10% of those working with cattle and sheep. Livestock farming remained predominantly an employer of Uruguayans, women and men, who also made up the vast majority of landowners (almost 70%) and of managers of pastoral farms and ranches (more than 80%), and owned the majority of cattle and sheep (60% of livestock units).³¹ The fact that agricultural land, the key natural resource for the leading sector, remained in the hands of Uruguayans has long been considered by local historiography as a key difference with other Latin American economies, where natural resources were predominantly owned by foreign capital.³² This would have ensured that most of the profits were reinvested in the country. The evidence presented here

²⁸ By 'adult population' in this context I mean people at least 15 years old. My calculations on the 1908 population census returns. DGE, *Anuario Estadístico 1911-12*, Tomo II, Parte II, Montevideo: VII, XIV.

²⁹ Alcides Beretta Curi, *Inmigración europea e industria: Uruguay en la región (1870-1915)* (Montevideo, 2014): 28-36; Sergio Rodríguez Villamil and Graciela Sapriza, *La inmigración europea en el Uruguay. Los italianos* (Montevideo, 1982).

³⁰ On immigrant farmers in late-nineteenth century Argentina, see Julio Djenderedjian, *Gringos en las pampas: inmigrantes y colonos en el campo argentino* (Buenos Aires, 2008). On the failure of public and private attempts to promote agricultural settlement in Uruguay since the late-nineteenth century, see Isaac Morón, 'Problemas de la colonización en el Uruguay', in *Anales de la Universidad de Montevideo* (Montevideo, 1946); for an account of a success story, see the local history by Omar Moreira, *Colonia Suiza Nueva Helvecia. En el ojo de la lupa* (Colonia Suiza, 2010).

³¹ My calculations on the basis of the 1908 agricultural census returns. DGE, *Anuario Estadístico 1911-12*, Tomo II, Parte II, Montevideo: 978; 1017; 1126-1127. Livestock units are used to standardise the number of animals according to their grazing or fodder requirements (a cow is equivalent to roughly five sheep, and so on). Here I use the coefficients suggested for Uruguay by INIA, *Revisión*. For a discussion on different methods of calculating LUs in Uruguay, see Jorge Álvarez, 'Instituciones, cambio tecnológico y productividad en los sistemas agrarios de Nueva Zelanda y Uruguay. Patrones y trayectorias de largo plazo' (Unpublished PhD Thesis, Universidad de la República, 2014), 138-40.

³² Barrán and Nahum, *Civilización*.

suggests that labour was also predominantly Uruguayan in livestock production, which must have also contributed to the spill-over effects of pastoral agriculture through increased demand without part of the incomes being 'lost' (from the perspective of the domestic economy) to remittances.³³

1.3. Women and market-oriented agriculture

The gender dimension deserves further consideration. The mainstream historiographical view of female labour in the Uruguayan rural economy stressed their seasonal participation in arable farming and considered their contribution to market-oriented agriculture, and ranching in particular, to be largely limited to times of crisis or civil war.³⁴ The erasure of the work of women in livestock farming in this period extends beyond economic historiography to reach more influential realms, notably art. In Juan Manuel Blanes's famous oil paintings of rural scenes from this period (to be found in every school history textbook in Uruguay), women, when they appear, are never dressed for ranch work and their presence suggests that men are taking a break from it, as women often offer them a drink of *mate* (Illustration 5.1).

Illustration 5.1. *Uno de los tres chiripás*, 1881 by Juan Manuel Blanes (oil on canvas)



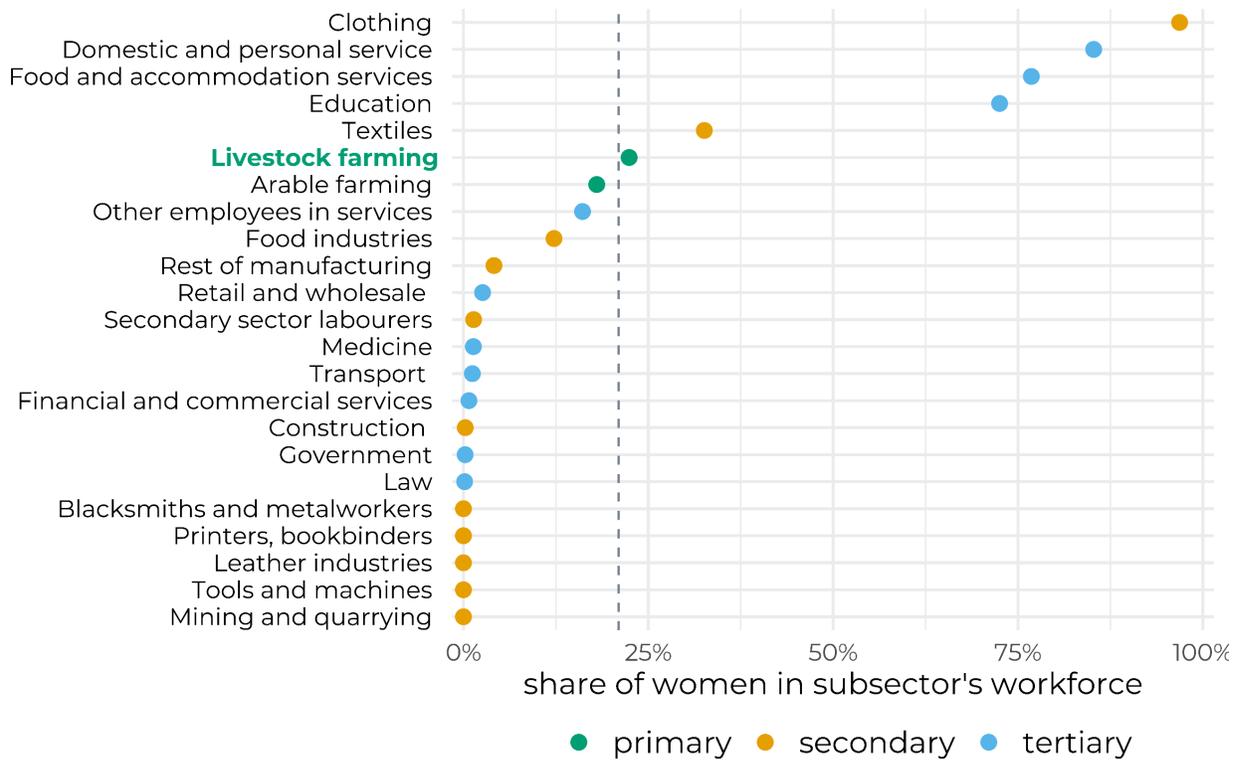
Source: Museo Nacional de Artes Visuales, Montevideo.

³³ Remittances are a topic deserving further study in the case of Uruguay as well as other settler economies. For a pioneering analysis, see Warren Dean, *Remittances of Italian Immigrants: From Brazil, Argentina, Uruguay and USA, 1884-1914* (New York, 1974).

³⁴ José Pedro Barrán and Benjamín Nahum, Barrán and Nahum, *Historia Rural I*, 37.

Our new estimates, which correct the pervasive under-counting of female rural workers in the population census, demonstrate that almost a quarter of all livestock workers were women. Female livestock workers represented in fact a larger share of the female workforce than their male counterparts did of gainfully occupied men. Indeed, female participation in pastoral agriculture was higher than in most other sectors and even above the overall share of women in the national workforce (Graph 5.2). Without their contribution it is difficult to imagine how the output of livestock agriculture could have grown as it did in the closing decades of the nineteenth century, because wages would have had to rise in the sector in order to attract extra men.

GRAPH 5.2. Female workers as share of the total workforce by sub-sector, 1908
Dotted line represents the share of women in the total national workforce



Sources: 1908 population census and 1908 agricultural census (see Table 5.2; Table 5.1 contains source details).

This new perspective on female rural labour complements the ongoing reassessment in the literature on the urban economic activities of women in the period, and suggest that there is much scope for rewriting the history of female labour in Uruguay.³⁵ In particular, my new estimate of the general female activity rate in 1908 (i.e. the share of the adult women who were economically active) results in a significant increase from the up to now accepted figure of 19% to 26%.³⁶ This can fundamentally change our perspective of women's participation in the labour market in the twentieth century, as it suggests that female activity rates remained relatively stagnant, rather than significantly grew, between the 1910s and 1970s, an important finding the implications of which fall beyond the chronological scope of this dissertation and should be the subject of future research.

2 Before the census

Useful as the corrected figures of the 1908 census are to paint a picture of the Uruguayan economy at the end of our period, we can only get a sense of structural change during Uruguay's 'rural modernization' if we compare them with the structure of employment in the previous decades. The lack of national censuses or any other comprehensive enumeration recording occupations before 1908 means that we have to resort to individual-level sources, and rely on a method that allows us to construct a representative picture from them.

Uruguay's political past turns out to be, in this context, very generous to the economic historian. As a result of the relatively—by Latin American standards—short-lived colonial period (less than a century passed between the foundation of Montevideo and the start of the independence revolution), the Uruguayan Catholic Church did not wield a temporal power comparable with the influence it enjoyed elsewhere in the continent. It could be said the Church's hold on the country was, much like the Spanish colonial state's had been, 'weak because it was tardy'.³⁷ By the late-nineteenth century, Uruguay was, to borrow Real de Azúa's eloquent definition, 'the faintest star in the Catholic firmament of Latin America'.³⁸ It was therefore politically possible for successive governments to progressively take on functions and spaces the Church once monopolised (graveyards, schools, hospitals, record-keeping), establish free, secular, and mandatory primary school attendance, and eventually establish Uruguay as a completely secular state in the 1918

³⁵ For an overview of the expanding female roles in the urban economy, see Camou, 'Family formation'.

³⁶ For the most recent published estimates of female participation rates, see Sebastián Fleitas and Carolina Román, 'Evolución de la población económicamente activa en el siglo XX: un análisis de la estructura por sexo, edad y generaciones,' *Boletín de Historia Económica* VIII, 9 (2010).

³⁷ Gerardo Caetano and José Pedro Rilla, *Historia contemporánea del Uruguay: de la colonia al Mercosur* (Montevideo, 1994): 17.

³⁸ Carlos Real de Azúa, *Uruguay, ¿una sociedad amortiguadora?* (Montevideo, 1984): 21.

constitution, all without facing great opposition.³⁹ This matters for present purposes because in 1879 the national state took over vital registration from the Church: births, marriages, and deaths had to be recorded with the newly created *Registro de Estado Civil* (Civil Registry) before any religious sacraments took place.⁴⁰ Birth registration was mandatory within twenty days (ten days in urban areas), free of charge, and issued by Justices of the Peace in each court district. A copy of the certificate was sent to each provincial capital and to the national record office in Montevideo, where they remain to this day. This government takeover of registration turned out to be much more than a change of management, forms, and stamps: it pioneered the first drive to full vital registration in Latin America.⁴¹

2.1. Sources

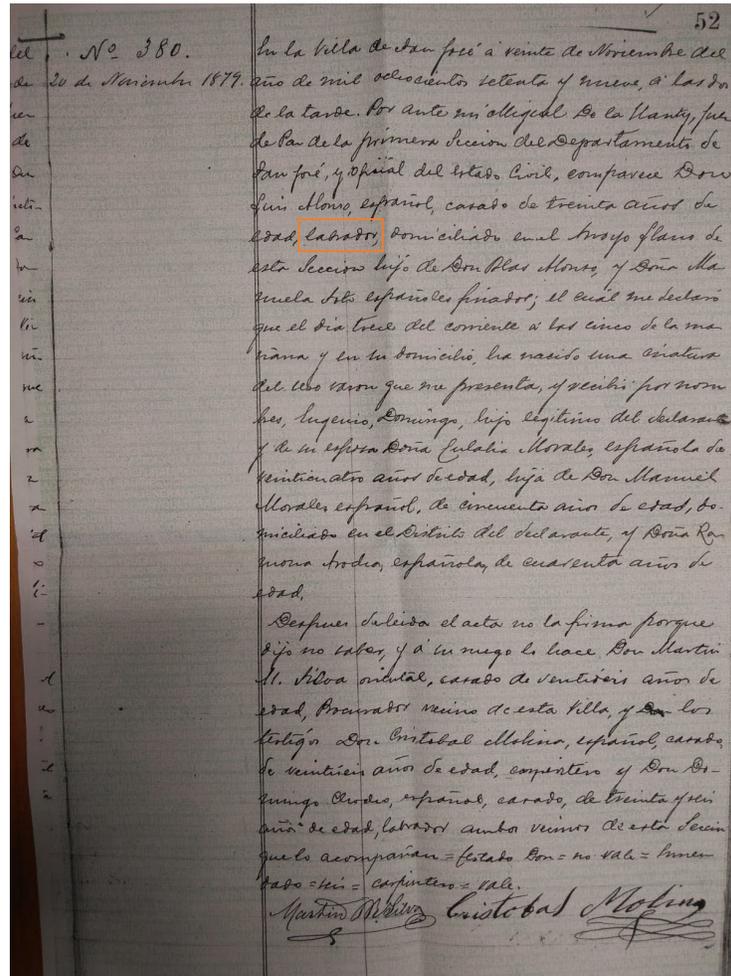
The new secular birth records, unlike the previous religious ones, included children born out of wedlock and, crucially, recorded the father's occupation (Illustration 5.2). Another significant advantage is that they were centrally processed and kept, which means that the rate of source survival does not depend on the circumstances of the district where the birth was recorded. The records follow a narrative template which contains information about the place of birth, as well as the nationality, age, and occupation of parents, grandparents, and witnesses to the registration. Because the father was asked to declare his own age and to sign the register, these records could also be relied upon to estimate numeracy and literacy rates (in the example in Illustration 5.2 the father says he is thirty years old and does not know how to sign his name), among many other possible uses for economic and social historians. Despite the wealth of individual-level data offered by the birth records, the usually readable handwriting of court clerks, and the almost perfect rate and conditions of source survival, scholars have, to my knowledge, never explored them systematically as a source, other than for reconstructing individual family histories or for tracing particular lineages.

³⁹ José Pedro Barrán, *Iglesia Católica y burguesía en el Uruguay de la modernización (1860-1900)* (Montevideo, 1988); Gerardo Caetano and Roger Geymonat, *La secularización uruguaya (1859-1919): Catolicismo y privatización de lo religioso* (Montevideo, 1997).

⁴⁰ Religious ceremonies remained recognised as legal basis for marriage until 1885, when secular ceremonies were ruled by law to be the only ones valid in the eyes of the state.

⁴¹ Keith Breckenridge and Simon Szreter, 'Recognition and Registration: The Infrastructure of Personhood in World History,' in *Registration and Recognition: Documenting the Person in World History*, ed. Keith Breckenridge and Simon Szreter (Oxford, 2012): 26. A similarly rigorous procedure was followed for civil marriage registration, and the resulting records contain valuable information regarding the occupation of women, both single (i.e. the bride) and married (the mothers of bride and groom). I have not been able to access them freely yet, but, if scholars are granted free access to them by the authorities, they could powerfully contribute to our understanding of female work in the late-nineteenth century.

ILLUSTRATION 5.2. Example of birth record: Eugenio Domingo Alonso Morales (b.1879)
 Father's occupation (*labrador*, i.e. tiller) highlighted



Source: author's photograph, Dirección General del Registro de Estado Civil, Montevideo.

The reasons for such neglect fall beyond the scope of this chapter, but at least two factors should be mentioned. First, these sources are not held in an archive, but in a civil registration office, an arena more familiar to lawyers and notaries than to historians and economists, and one where access to records is not free of charge.⁴² The second problem is that insights from this large corpus, containing millions of

⁴² The office charges 88 Uruguayan pesos (about £1.78, at current exchange rates) per item issued, a problem I have circumvented by largely relying on the microfilms of birth records freely available at the Family History Centres of the Church of the Latter-Day Saints, which have excellent coverage especially since 1890. The microfilms of Uruguayan birth records (along with those of many other countries) are accessible online through the Family Search platform, but only

manuscript individual records from 1879 up to 2013 (when files became digital), can only be gained by systematically extracting large amounts of information, which requires a significant time investment by expert staff, as some contextual knowledge is required for effective transcription. A large team of scholars and a significant research grant would be needed to fully extract the data contained in all the records. The alternative is to work with representative samples. Given that the seminal historiography on this period was written before personal computers and statistical software were widely available, and that most historians remain unfamiliar with the potential and limitations of sampling methodologies, neither path has been explored until now and the potential of birth records emerging from the early years of state-led registration and recognition remains untapped.

A crucial question regarding the usefulness of these birth records as sources, at least from the perspective of quantitative history, is the extent and quality of their coverage. Even if some under-registration of births, particularly in rural areas, undoubtedly must have occurred, scholars have generally regarded the coverage of vital statistics in Uruguay through individual records in this period as reliable according to international standards.⁴³ Moreover, the implied fertility rates calculated on the basis of these records (131 live births per 1,000 women in reproductive age in 1908, or about 6 live children per woman throughout her life) are in line with what can be expected of a pre-demographic transition society, which is how historical demographers have characterised Uruguay in this period.⁴⁴ This scenario of high fertility rates also improves the chance that fathers (and their occupations) will be representative of men in general, as it makes it more likely that men in a fertile relationship will appear in the birth records as fathers. Because fathers were more likely to be young adults (the average age of fathers in the sample was 36 years old) than elderly men, if young adults were not representative of the overall male occupational structure, then the potential of birth records to estimate sectoral employment would be compromised. Fortunately, the occupational structure of men in 1908 by age cohort shows men in their thirties to be the most representative age-group of the overall picture.⁴⁵

through computers connected to the Church's Salt Lake City servers. I accessed them in the Family History Centre located in the Church of the Latter-Day Saints in Cherry Hinton (Cambridge, UK). I have repeatedly contacted the Uruguayan Registry authorities to try and gain free access to the original records, so far unsuccessfully. I trust free access for scholars will be granted eventually, once the authorities are convinced of the potential of the sources.

⁴³ Anne-Emanuelle Birn, 'Uruguay's Child Rights Approach to Health: What Role for Civil Registration?', in *Registration and Recognition: Documenting the Person in World History*, ed. Keith Breckenridge and Simon Szreter (Oxford, 2012): 419-22.

⁴⁴ Pellegrino and Pollero, 'Fecundidad'.

⁴⁵ See Graph 5.1 above.

2.2. Method

The quality of the occupational data produced from these birth records depends not only on the reliability of the registration practices which produced the underlying data (which, I have argued, we have reason to think was relatively high) and on the fertility and age specificity of different occupations (which demographic scholarship and the 1908 census' age cohort data suggest does not produce large distortions), but also on the method used to extract information. Ideally, a quasi-census of fathers could be constructed extracting the father's occupation from each birth record. Indeed, this method could (and hopefully will in the future) make up at least partially for the census hiatus in Uruguayan history, not only before 1908 but also (and beyond the chronological boundaries of this thesis) between 1908 and 1963. However, such an approach is quite simply impracticable for a single researcher working within the time constraints of a three-year doctoral dissertation. Fortunately, the specific questions this chapter asks of these birth records (what was the occupational structure of fathers, and, in particular, what was the share of fathers who worked in agriculture?) do not necessarily require, if we are willing to accept certain margins of error, the transcription of every single case. A sample which is random and large enough can give a reasonably representative image of the whole population of fathers who appear in the records. Let us consider how such a sample can be drawn, how large it should be, how accurate can it aspire to become, and finally how well can it 'predict' the actual male occupational structure calculated on the basis of a comprehensive census.

Given that birth records are organised by court district and date, and therefore there could be periodicities that would bias the results, I chose to take a random sample rather than a systematic one.⁴⁶ The choice of sample size depends, as always, on the variation of the population in the variable of interest (which in turn depends on the question we ask the data), as well as on the margins of error we are comfortable with and the likelihood of being wrong that we are prepared to accept.⁴⁷ In this case, we are trying to make an inference about the share of male workforce employed in different sectors. In particular, we are interested in knowing what share of fathers were engaged in agriculture. Because we do not know how large that share was in the total population, we assume the maximum possible variation (i.e. 50% of fathers worked in agriculture, 50% did not). If we are further willing to accept a 1 in 20 chance of drawing an unlucky sample (in statistical terms, producing an estimate with a 95% confidence interval) within a margin of error of +/-

⁴⁶ I numbered all records sequentially and used the function 'sample' of the base package of the statistical software RStudio to provide a sample of 385 observations without replacement (the choice of sample size will be explained shortly). For a clear discussion of the difference between random and systematic samples, and the latter's limitations for historical research, see Roger Schofield, 'Sampling in historical research,' in *Nineteenth-Century Society: Essays in the Use of Quantitative Methods for the Study of Social Data*, ed. E. A. Wrigley (Cambridge, 1972): 151-54.

⁴⁷ The classic discussion of sample size estimation in traditional (i.e. non-Bayesian) sampling methods is William G. Cochran, *Sampling Techniques* (New York, 1953): 50-61. The mathematics behind the calculations that follow can be found there.

0.05 (that is, our estimate for the share of men in agriculture being within a 5% of the actual share), then a sample of as few as 385 birth records should suffice.⁴⁸

385 births are of course an irrelevant proportion of all babies recorded in Uruguay in any given year, but this does not necessarily hinder their representativeness. What matters is how the sample is drawn (whether every observation has the same chance of making it to the sample) and what is the *absolute* size of the sample, not its relative share of the total population, a logic which can seem counterintuitive to many historians.⁴⁹ Because in reconstructing Uruguay's occupational structure we are interested in what was typical rather than exceptional, and because almost every birth record provides valuable information, statistical theory tells us that there are decreasing returns to the understanding we gain from each additional observation. In drawing the samples, I found some exceptional records which do not contain occupational data, and which must be substituted by 'new' draws. About 6% of the records randomly drawn did not report the father's occupation, in most cases because the child was recorded as 'illegitimate' (*hijo natural*), and was registered by a single mother or by an orphanage.⁵⁰ For each such record, a new observation was drawn at random from the same seed state.⁵¹

However useful these theoretical considerations are, the ultimate measure of the quality of evidence constructed from individual-level sources is to compare the estimates with an independent and reliable primary source from the same place and period. To test the quality of the Uruguayan occupational data produced by sampling late-nineteenth century birth records, I started by drawing a sample of 385 records from all births recorded in Montevideo province (that is, including the countryside as well as the city) in 1890, which could be compared with the census taken there in November 1889. There is no comparable enumeration for Uruguay as a whole in the late-nineteenth century, but Montevideo offers a good test case because, while unrepresentative of the country at large, it is the province where we would expect to see the most occupational complexity and variation, because it was home to the largest city, the main port, and the administrative capital of the republic, as well as to several rural districts. Graph 5.3 compares, by sector and

⁴⁸ The estimated sample size n_o for the share of fathers working in agriculture (p , which to be safe we place at its maximum possible variation: 50%) and the share of those not in agriculture (q , also 50%) can be expressed as

$n_o = \frac{p \times q}{V}$, where V is the desired sample variance, in turn calculated as $V = \frac{d^2}{t^2}$, where d is the confidence error margin ($\pm 5\%$) and t is 1.96, the normal deviate for our chosen confidence interval (95%). This equation yields 384.6.

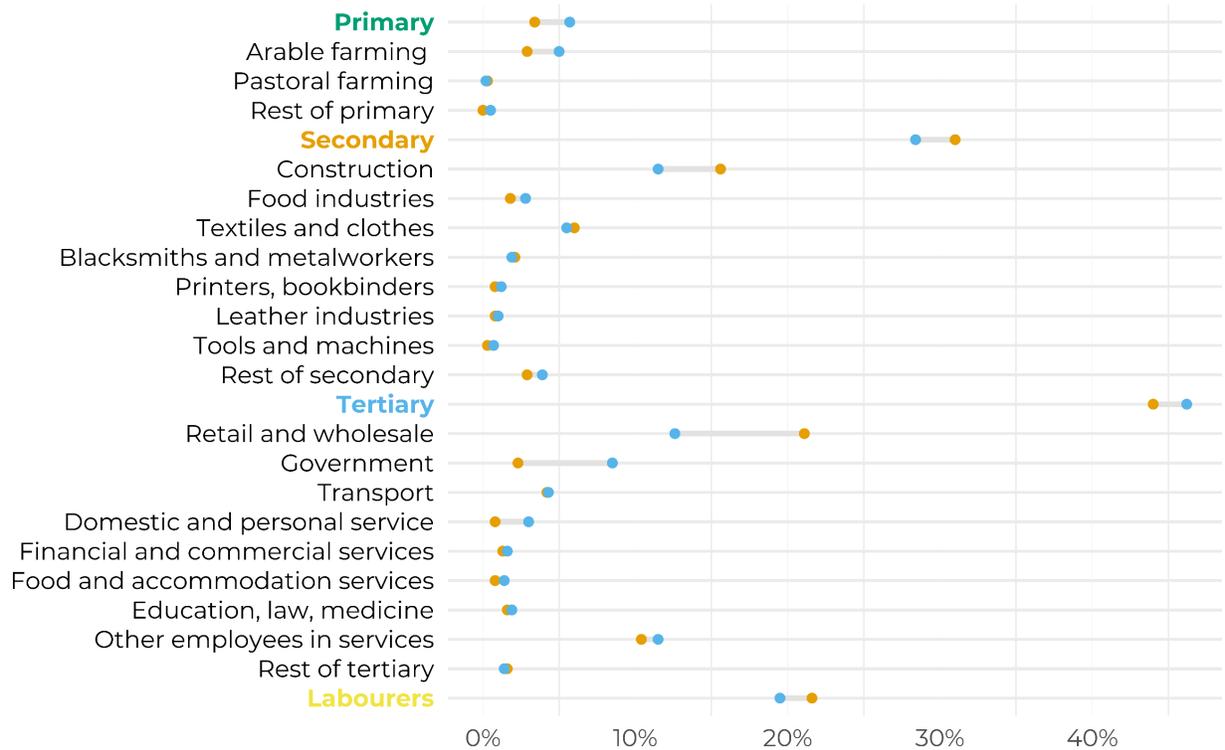
⁴⁹ A concise and entertaining exposition of the problem can be found in McCloskey, *Econometric History*, 49-50.

⁵⁰ Other cases which were discarded were when the father had died before the birth and was recorded as 'deceased' (*finado*) or when the father had no gainful occupation (because he lived off property or family rents).

⁵¹ A seed state value corresponds to a sequence of randomly generated numbers within a given vector of numbers. By using the same seed we can be sure that if we draw, say, 50 more observations at random those will be different from the hundreds of observations we drew beforehand.

sub-sector, the male occupational structure ‘predicted’ by our sample of Montevideo birth records with the ‘actual’ male occupational structure constructed on the basis of the full returns of the provincial census.

GRAPH 5.3. Testing birth record sampling: occupations in Montevideo province, 1889-90
% of the male workforce calculated from birth records sample (orange) & census returns (blue)



Sources: Montevideo 1889 census and author’s random sample (n=385) of Montevideo birth records.

The results of this pilot analysis are very encouraging. The shares of male workers across the primary, secondary, and tertiary sectors estimated on the basis of a sample of 385 birth records are within a 5% error margin (which we defined as acceptable) of the ‘true’ values for the population as a whole, as recorded by the census. Our sample also accurately predicts the share of those described as ‘labourers’ in the census, who, as we have seen, were an important group as late as 1908. Indeed, even across all sub-sectors, with the exception of government and retail trade, the estimates are near the mark, no more than 5% off from the occupational structure constructed on the basis of the census’s comprehensive enumeration. The fact that government’s share is underestimated may have to do with civil servants being more affluent than most workers in services, and therefore tending to have fewer children. This should not pose a large problem for

the rest of the country, where civil servants were far fewer than in the capital. Conversely, the largest sub-sector in services, wholesale and retail trade, appears to be overestimated by the sample of birth records. This is probably a consequence of one very general occupational descriptor, 'trade' (*comercio*), which occurs often in birth records but was disaggregated by further questions asked by census-takers, and it does not appear in the census returns as such. This test proves that the data constructed from a random and sufficiently large sample of birth records is useful to estimate the male occupational structure of late-nineteenth century Uruguay across large sectors, while noting that, as far as sub-sectors are concerned, this method has a tendency to under-represent the government's share of employed males and over-represent those working in retail trade.

We are now ready to apply this methodology to construct a picture of male occupational structure in Uruguay as a whole in that same year (1890), which can give us a new perspective on the agricultural workforce and the nature of economic development during the First Globalization.

2.3. Results

A random sample of more than 500 fathers recorded in 1890 with an occupation was drawn, using the number of registered births in Montevideo and provinces from the rest of the country to weigh the number of records to be taken from the capital.⁵² Almost exactly as in the 1908 census, about 20% of male workers were recorded as 'labourer' and, given the lack of other sources of occupational data, we cannot allocate them to a sector in 1890. Therefore, the total sample size was increased further in order to obtain 385 random observations containing specific occupational descriptors.⁵³ The results are shown in Table 5.4 in comparison with the male occupational structure two decades later, calculated also by subtracting labourers from the totals presented earlier in the chapter.

⁵² The total number of randomly sampled records was 649, of which 146 had to be discarded because they did not report the father's occupation, either because the father was 'unknown' and the child recorded as 'illegitimate' or for any of the reasons mentioned in footnote 49 above.

⁵³ The most common non-sectoral occupational descriptors were, besides 'labourer', 'worker' and 'owner'.

TABLE 5.4. Male occupational structure of Uruguay, 1890 and 1908 (shares)
(excluding labourers)

	1890	1908
Primary	39.2	39.3
Arable farming	25.7	22.4
Livestock farming	13.0	16.6
Rest of primary	0.5	0.4
Secondary	23.6	21.2
Construction	7.8	7.9
Food industries	2.3	3.1
Textiles and clothes	3.9	3.0
Blacksmiths and metalworkers	0.8	1.6
Printers, bookbinders	0.5	0.6
Leather industries	0.8	0.6
Tools and machines	0.3	0.9
Mining and quarrying	0.8	2.7
Rest of manufacturing	6.5	0.7
Tertiary	37.1	39.5
Retail and wholesale	17.4	11.5
Government	2.6	7.4
Transport	4.4	3.8
Domestic and personal service	1.6	1.8
Financial and commercial services	1.3	1.4
Food and accommodation services	0.5	0.5
Education, law, medicine	0.8	1.2
Other employees in services	6.5	7.9
Rest of tertiary	2.1	3.9
Total	100	100

Sources: for 1890: author's random sample (n=385) of birth records containing specific occupations from the provinces of Canelones, Colonia, Minas, Montevideo, Soriano, and Rocha; 1908 census (see Table 5.1).

In 1890 agriculture was the largest sectoral employer, with ‘farmer’ (*agricultor*) or ‘tiller’ (*labrador*) as the modal occupation. The words *agricultor* and *labrador* had almost identical meaning and it seems they were used interchangeably for farmers working their own land, tenants, and also permanent farm workers.⁵⁴ The sectoral shares were in general also very similar to those observed almost two decades later, and the main changes seem to be within agriculture rather than across large sectors, with pastoral production gaining ground over arable farming, the latter being much less export-oriented. This is the shifting pattern we would expect, as livestock exports increased and the arable sector continued to feed the domestic population, albeit one that was growing.

Moreover, the stability of the relative size of the agricultural workforce at large is consistent with the drivers behind demographic growth and the different labour trajectories of foreigners and locals. Historical demographers have demonstrated that natural population increase and immigration were equally important drivers of population growth in this period. As shown earlier in this chapter, foreign men were disproportionately concentrated in manufacturing, construction, and services, whereas agriculture was by far the largest employer of Uruguayan men. Montevideo, where foreigners represented a much larger share of the population than anywhere else in the country, remained exceptional in both benchmark years, with the tertiary sector as by far the largest employer in the province and ‘trader’ (*comerciante*) as the most common occupation.

This persistence of agriculture’s share of the workforce over the two peak decades of ‘rural modernization’ should bring into question the idea that the agricultural economy was not capable of absorbing new entrants to the labour market, or that the productivity gains within export agriculture led to widespread rural unemployment. Throughout this period there were still opportunities to make money in market-oriented agriculture, where labour remained in high demand, as mechanization was yet to show its full force. The agricultural economy was more capable of generating employment than previously assumed in the literature.⁵⁵ This was true of both large pastoral landholdings, which had not yet introduced significant labour-saving technologies and therefore needed more, rather than fewer, permanent wage workers, and of the much smaller crop farms, which reduced fallow periods and expanded their cultivated acreage. As argued in the previous chapter in relation to soil quality and agricultural innovation, the latifundia-

⁵⁴ The strongest evidence of this is that the 1908 census returns aggregated both categories together, suggesting that court officers simply chose one or the other whenever someone described themselves as engaged in arable agriculture year-round. I can offer an additional piece of empirical, if anecdotal, evidence: my great-great-grandfather was recorded as an *agricultor* when my great-grandmother was born, and as a *labrador* when my grandmother was born, but I have it on good authority (my grandmother’s) that his actual occupation never changed: he continued to farm the same smallholding.

⁵⁵ For a succinct summary of the mainstream view on this point, see Moraes, *Pradera*, 12.

minifundia framework that has informed most scholarship is not always helpful to trace rural development. Technical improvements in large estates during this period, after enclosures and wire-fencing but before widespread mechanization, were not as labour-saving as traditional scholarship assumed, nor were small landholdings unable to invest and change their productive strategy. Across both scales there was significant change, but it was mainly predicated on biological innovation (cattle crossbreeding), new industry patterns (with ranches specializing in different stages of the life cycle of livestock), or new crop repertoires (diversifying and increasing the acreage permanently cultivated), rather than in the introduction of capital-intensive, labour-saving machinery and technologies. Even if the countryside was increasingly punctuated by railway stations, machines remained a rare sight. In 1908 there were only 290 tractors compared to over almost 200,000 ploughing oxen and horses, while most of the 26 million sheep were sheared with hand blades, as there were only 365 machine shears in the whole country.⁵⁶ The muscle energy of animals and people continued to be the main way of working land and livestock.

Occupying by 1908 only 5% of the total agricultural land and producing only 10% of agricultural output, crop farmers have been described by the mainstream view as being in this period 'synonymous with economic difficulties and misery.'⁵⁷ However, the pace of growth of output during the previous two decades was larger in arable agriculture than in any other sector, including livestock production.⁵⁸ The evidence points to a diversification of crop choices, within a production function still dependent on traditional energy sources and farming techniques, and an increase of the area under crops of almost 50% between 1890 and 1908. Wheat and maize retained their secular primacy in the Uruguayan crop repertoire, but the expansion was led by other cultigens, as farmers responded to the expanded urban demand buttressed by immigration: the acreage cultivated with barley, potatoes, and sweet potatoes doubled in less than twenty years.⁵⁹ The more than threefold expansion of the land occupied by vineyards over the same period is particularly emblematic of rural responses to the rise of urban populations and disposable incomes.⁶⁰

⁵⁶ *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908* (henceforth *Censo General 1908*), Tomo II, Parte II, Montevideo, 1911 p. LXXV. On the incremental improvement in oxen- or horse-driven ploughs in Uruguayan agriculture in this period, see Alcides Beretta Curi, 'Elite, agricultura y modernización: el programa de la Asociación Rural del Uruguay, 1870-1900,' in *Agricultura y modernización, 1840-1930*, ed. Alcides Beretta Curi (Montevideo, 2012): 76-79. For an analysis of the part played by animals Uruguay's long-term energy economy, see Reto Bertoni, *Energía y desarrollo: la restricción energética en Uruguay como problema (1882-2000)* (Montevideo, 2011): 94-113.

⁵⁷ Barrán and Nahum, *Crisis*, 278. Data on the number and extension of crop farms from *Censo General 1908*. Sectoral output figures for 1912 from Piñeiro, Bianco, and Moraes, *Trabajadores*, 158.

⁵⁸ Luis Bértola, 'El PIB per cápita de Uruguay 1870-2015: una reconstrucción,' *Documentos de Trabajo de la Facultad de Ciencias Sociales DOL* 48 (2016): Anexo I.

⁵⁹ 'Estadística Agrícola 1892,' pp.152-153; *Censo General 1908*, Tomo II, Parte II, pp. 1131-1137.

⁶⁰ Vineyards occupied 6,823 hectares in 1908, up from 2,597 in 1892. 'Anuario de Estadística Agrícola 1892,'

This set of changes was adopted by tenant crop farmers as well as land-owning producers, both of whom bought imported machinery, albeit still worked by animal energy: the stock of harvesters tripled between 1892 and 1908.⁶¹ The balance between landowning farmers and tenants tended to change, however, as ownership shrank following the increased value of land which was in part a consequence of these productive choices. While land-owning croppers still outnumbered tenants in 1892, by 1908 55% of crop farmers were tenants: proletarianization, albeit quite slow, was underway.⁶² Throughout this period, however, arable agriculture remained dominated by small farmers producing for the market: there was an average of only 1.8 hired dependent workers per crop farm in 1892 as well as in 1908.⁶³ Therefore, the image of widespread rural poverty and the depopulation of former crop farming villages which so impressed social scientists in the second half of the twentieth century seems to have been projected backwards to the late-nineteenth century by mainstream economic historiography and historical imagination.⁶⁴

Despite these caveats, the fact remains that arable agriculture employed twice as many people as livestock farming while contributing far less to GDP. This is not, therefore, an entirely Boserupian story, or rather it shows that, as Federico has argued, Boserup's model works much better for very long-term changes in agriculture than for (relatively) short-term ones: the crop-farming sector did not immediately respond to demographic change in Uruguay with radical innovations to increase yields.⁶⁵ While we do not know enough about the micro-level diffusion of mechanization in Uruguayan crop farming in the late-nineteenth century, the information we do have points to it being much slower than in the other two Southern Cone economies

returns published in *Anuario Estadístico de la República Oriental del Uruguay. Año 1893*, Montevideo: DGE, 1895, p.158; *Censo General 1908*, Tomo II, Parte II, p.1147. For a social history approach to the networks that made such expansion possible, see Beretta Curi, 'Camino de innovación.'

⁶¹ *Censo General 1908*, p.1148; 'Estadística Agrícola 1892.'

⁶² Among crop-farming estates (*establecimientos agrícolas*) there were 10,853 land-owning farmers and 10,471 tenants in 1892; by 1908 there were 7,511 farm-owning producers and 8,997 tenant farmers, while the rest owned part of the land they farmed and rented the rest. 'Estadística Agrícola 1892', p.151; *Censo General 1908*, Tomo II, Parte II, p.1127. On the evolution of land prices, see Luis Bértola, Leonardo Calicchio, María Camou, and Gabriel Porcile, 'Southern Cone real wages compared: a purchasing power parity approach to convergente and divergente trenes, 1870–1996,' *DOL/FCS-UM*; 19 (1999).

⁶³ 'Estadística Agrícola 1892', p.151; *Censo General 1908*, Tomo II, Parte II, p.1127.

⁶⁴ The best overview of later, mid-twentieth century changes in rural population and economic opportunities is Diego Piñero and María Inés Moraes, *Los cambios en la sociedad rural durante el siglo XX*, El Uruguay del Siglo XX (Montevideo, 2008). The most important primary source on rural poverty in the 1960s is the report by CLAEH-CINAM, *Estudio económico y social del Uruguay rural* (Montevideo, 1964).

⁶⁵ Giovanni Federico, 'Population, Agricultural Growth and Institutions: The Real Long View,' *EH.net Book Reviews* (2001); Ester Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure* (London, 1965).

(Chile and Argentina).⁶⁶ It is unsurprising that investments in physical as well as ‘landesque capital’ followed the domestic comparative advantage and concentrated in livestock agriculture.⁶⁷ While fallow periods were reduced, intensification was otherwise fairly limited in crop farming: it still took a quarter of the workforce (excluding labourers) to feed the population. This is a very different story from the large-scale genetic improvement of six million cattle studied in the previous chapter. The lack of intensification in the arable farming sub-sector, which was responsible for feeding Uruguay’s growing population, could have also limited the expansion of livestock agriculture, by denying it land and labour.

Beyond the dynamics within rural production, the lack of a continued shift of employment out of agriculture (and into manufacturing) at the height of ‘rural modernization’ could be seen as proof that the economy of modern Uruguay had grown but not developed during the First Globalization, as the *dependentista* tradition has long argued. Should the era of ‘rural modernization’ be understood as merely an episode of export-led growth? Or rather as a period of broad economic development rooted in agriculture? It is to that debate that we turn now.

3 Rural development and long-term economic growth

The analysis of occupational structures can shed new light on both the potential and the limits of rural development in Uruguay to sustain long-term economic growth.⁶⁸ Let us start with its contributions. First, the expansion in arable agriculture kept domestic food supply in pace with the demographic growth, as population grew at a very fast rate of about 2.5% per year between 1890 and 1908 without requiring larger food imports.⁶⁹ Second, the increases in the physical productivity of the livestock sector—in the context of favourable terms of trade for beef, wool, and leather—contributed to obtaining foreign exchange: agricultural produce accounted for more than 90% of Uruguayan exports. In turn, that increased import capacity became the cornerstone of the fiscal revenue of the expanding national state, which relied mostly on custom duties and could therefore fund public investment without imposing direct taxation on its

⁶⁶ Castro Scavone, ‘La mecanización.’

⁶⁷ ‘Landesque capital’ is a generic term to encompass persistent landscape modifications that increase yields in agriculture. See, for an overview of the concept, Widgren and Hakansson, ‘Landesque Capital’.

⁶⁸ As a conceptual tool for thinking about the contributions of the rural economy to wider development I follow here the framework outlined in the seminal paper by Bruce F Johnston and John W Mellor, ‘The role of agriculture in economic development,’ *AER* 51, 4 (1961).

⁶⁹ Population data from *Censo General 1908* and Programa de Población, *Base de Datos Sociodemográficos* (Montevideo, 2014).

citizens.⁷⁰ As one essayist put it some decades later, Uruguay's was a 'peculiar welfare state, standing on hooves, grass, and mud.'⁷¹ Third, because it remained the largest employer in the economy, agriculture sustained more livelihoods than any other sector, contributing therefore to the rising domestic demand that fuelled Uruguay's 'early' manufacturing industry focused on nondurable consumer goods (clothing, beverages, cigarettes, etc.).⁷²

But the lack of a continued shift in employment out of agriculture also points to the limits of the rural economy to induce economic development, understood as a process of structural change characterised by the emergence of new sectors. While we can hypothesise that the early decades of modernization (1870s-1880s) saw a shift of labour-shares out of agriculture in the context of enclosures and the effective closing of what had been a relatively open frontier, that process did not continue into the late years of export-led growth.⁷³ In this sense, agriculture did not entirely succeed in 'releasing' labour to further encourage the rise of manufacturing, one of its classic roles in long-term economic development. Moreover, the agricultural export economy could be expected, in contexts such as modernising Uruguay, to make a large net contribution to the capital required by industrial investment. Profits from livestock exports were concentrated in the hands of large landowners, and were mostly directed to acquiring more rural assets (fundamentally land and livestock) rather than being channelled towards new sectors, and so did not create a spill-over effect beyond the more immediate connections with meat and wool production, or the financial investments surrounding government debt.⁷⁴ Traditional economic historiography and revisionist interpretations disagree on how rational this investment strategy was, the former arguing it reflected the tenacity of an archaic 'livestock-mania' (*ganadomanía*) and the latter claiming it made economic sense for agents to continue to invest in capital goods which kept gaining value in the short term, but what is clear is

⁷⁰ Custom duties represented well over 60% of the total fiscal revenue of the Uruguayan state in the period 1870-1904, and about 45% in 1904-1913. Bértola, 'Primer Batllismo', 179.

⁷¹ Alberto Methol Ferré, *El Uruguay como problema en la cuenca del Plata entre Argentina y Brasil* (Montevideo, 1967).

⁷² Industrial growth in this period is known as 'early' in the literature because it came before the core expansion of manufacturing after 1914 and, especially, the short but momentous period of state-led industrialization in the 1940s and 1950s. The best analysis of such developments is Luis Bértola, *La industria manufacturera uruguaya 1913-1961: un análisis sectorial de su crecimiento, fluctuaciones y crisis* (Montevideo, 1991). For an overview of the literature on Uruguay's 'early industry' see Javier E Rodríguez Weber, 'Nueva luz sobre viejos problemas: incidencia de la cuantificación en la historiografía sobre la industria temprana en Uruguay,' *América Latina en la historia económica*, 36 (2011).

⁷³ I hope in the future to gain free access to birth records from 1879-1880 to be able to test this hypothesis.

⁷⁴ There were exceptions to this pattern within Latin America: the profits of the coffee export economy in São Paulo were invested by large producers on the emerging textile industry, as shown in the seminal work of Warren Dean, *The Industrialization of São Paulo, 1880-1945* (Austin, 1969).

that such behaviour did not contribute to structural change.⁷⁵ The kind of livestock agriculture that dominated the export economy—extensive, highly specialised, and with cattle and sheep as its main form of capital—had, in Hirschman’s sense, a very limited linkage potential to underpin broad-based economic development.⁷⁶ As shown by the early development of the dairy industry in contemporary New Zealand, further linkages could have been developed even within a specialization pattern centred on pastoral agriculture.⁷⁷

Another possible contribution of a leading sector to broader economic development is to provide demand for productivity-enhancing innovations which can then be used in other sectors of the economy. The case of steam, a general-purpose technology originated in coal production in Britain, is perhaps the best known case of this dynamic in comparative economic history, but by no means the only one.⁷⁸ As we have seen in the previous chapter, the modernization of Uruguay’s livestock agriculture was predicated on making better use of natural pastures, through simple yet effective means: closing off paddocks, grazing sheep and cattle together, introducing new breeds of livestock, encouraging some ranches to specialise in weaning calves and some in fattening them. While these changes were crucial to the expansion of output (in total and per acre) they did not require substantial changes in production processes or farming techniques. Such agricultural growth, against the background of a largely unchanged mechanical technology in the countryside, could not result in a dramatic drop in the share of the workforce in agriculture. Given how context-specific the innovations were, they could not be easily transferred to other sectors, nor did they create a demand for the local production of new technologies. In this sense, modernising Uruguay provides evidence for the argument, central to the Latin American structuralist tradition, that in the modern world economy agricultural commodities have less capacity than manufactures to induce or create incentives for technological innovation.⁷⁹

⁷⁵ The positions are succinctly and clearly argued in Barrán and Nahum, *Civilización*, Ch.1 and Millot and Bertino, *Historia económica*, 86-89.

⁷⁶ Albert O Hirschman, ‘A generalized linkage approach to development, with special reference to staples,’ *Economic development and cultural change* 25 (1977). On staple theory in particular, see Melville H. Watkins, ‘A Staple Theory of Economic Growth,’ *The Canadian Journal of Economics and Political Science / Revue canadienne d’Economie et de Science politique* 29, 2 (1963). For a more recent historiographical review and an attempt to refine the theory, see Morris Altman, ‘Staple theory and export-led growth: constructing differential growth,’ *Australian Economic History Review* 43, 3 (2003).

⁷⁷ I have pursued that comparison further in Travieso, ‘United by grass.’

⁷⁸ N. F. R. Crafts, ‘Steam as a general purpose technology: a growth accounting perspective,’ *The Economic Journal* 114, 495 (2004).

⁷⁹ The pioneering works are Raúl Prebisch, *El desarrollo económico de la América Latina y algunos de sus principales problemas* (New York, 1949), and ECLAC, *Estudio económico de América Latina 1954* (Santiago, 1955). For an overview of the structuralist school, see Octavio Rodríguez, *El estructuralismo latinoamericano* (Mexico City, 2007).

Another analytical tool from the same school which can be useful to construct the balance sheet of agrarian development is the concept of 'structural heterogeneity': the large productivity gaps between sectors (typically following the divide between the domestic non-tradeable economy and the export economy) that characterise developing economies.⁸⁰ One way of assessing how lopsided Uruguayan rural-based development was is to compare output per (male) worker across sectors at the height of modernization, which our new estimates allow us to do. The results suggest that there was some diversification underway. Between 1890 and 1908 the value of output per worker in manufacturing almost doubled, converging towards the levels of livestock agriculture, which continued to produce about a third of GDP with less than a fifth of the labour force. For its part, arable agriculture, which provided most of the foodstuffs eaten by the increasingly numerous urban dwellers, also experienced very fast productivity growth, albeit starting from a much lower level (Graph 5.4).

Comparing productivity across sectors is never straightforward, and it is even more problematic in this case because of the lack of an input-output matrix for Uruguay before 1961.⁸¹ All the while, the faster growth in output values per worker in manufacturing than in livestock agriculture suggests a degree of structural change. Indeed, nominal output per worker was, towards the end of modernization, higher in domestic manufacturing than in export-oriented agriculture. This was to some extent a result of changing relative prices, in the context of high tariffs (even by Latin American standards) which increased the profit margin of domestic factories competing with imports.⁸² But it was primarily due to the increased physical output of domestic manufacturing, which more than doubled across its main industries, according to Bértola's estimates.⁸³ Given the standard relationship between labour productivity and wages, these results also imply that incomes were rising faster for urban workers than for rural ones. To briefly return to the central argument of this dissertation, the rising productivity leadership of the early light manufacturing sector

⁸⁰ The original formulation is Aníbal Pinto, 'Naturaleza e implicaciones de la "heterogeneidad estructural" de la América Latina,' *El Trimestre Económico* 37, 145(1) (1970). For a recent, more mathematically formalised, application, see Mario Cimoli and Gabriel Porcile, 'Technology, structural change and BOP-constrained growth: a structuralist toolbox,' *Cambridge Journal of Economics* 38, 1 (2013).

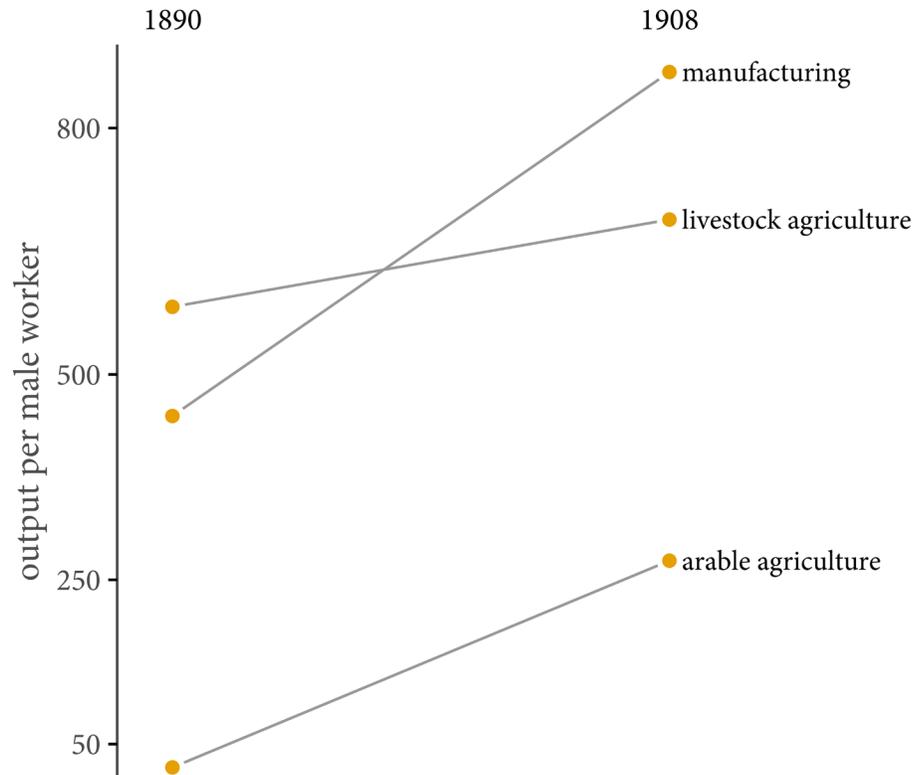
⁸¹ Nominal values were chosen because Uruguay's currency was tied to the gold standard throughout, which was characterised in this period by low inflation rates, so changing price levels are not a significant concern. The first reliable input-output matrix with detailed relative costs of factors across sectors was produced for 1961 as part of the first complete national accounts; see Banco de la República Oriental del Uruguay, *Cuentas Nacionales* (Montevideo, 1965): B215.

⁸² In this period Uruguay had the highest custom duties per capita in Latin America, and probably anywhere the world; see María del Mar Rubio, 'Protectionist but globalized? Latin American custom duties and trade during the pre-1914 Belle Époque,' (unpublished) (2006). For an overview of the modern history of Latin American tariffs, see John H Coatsworth and Jeffrey G Williamson, 'Always protectionist? Latin American tariffs from independence to Great Depression,' *JLAS* 36, 2 (2004).

⁸³ Bértola, *PBI de Uruguay*, Table VI.

should also be seen against the background of the bottlenecks in livestock agriculture, whose technical trajectory remained tied to the same farming processes and patterns of resource use, and therefore could not continue to increase output per worker at the same rate it had done before.

GRAPH 5.4. Estimates of labour productivity across three large sectors, 1890 and 1908 (in current pesos)



Sources: this chapter's estimates for labour-force size; sectoral output from Bértola, *PBI de Uruguay*.

Yet, within the 'liberal' interpretation of Uruguayan economic history, these new productivity estimates could be taken as further proof that state intervention in relative prices, since the late-nineteenth century, distorted the allocation of resources that should have followed, and further encouraged the 'naturally' higher productivity of livestock agriculture. Even if the government's motive for its tariff policy was fiscal economy, the unintended consequence, in this account, was to start a long tradition of distortive protectionism that

limited economic growth.⁸⁴ To the contrary, for a structuralist interpretation this significant expansion of light manufacturing resulting from a change in relative prices was a step in the right direction, although it proved insufficient for it to move out of the shadow of livestock agriculture and contribute to a shift in the country's development path.⁸⁵ Finally, for *dependentistas* the transfer of rents from export agriculture to light, import-substituting manufacturing created some positive spill-over effects for average urban incomes, but strengthened, rather than threatened, the political economy basis of peripheral underdevelopment.⁸⁶

From a resource perspective, and in light of the new evidence presented here, I would propose that we think of Uruguayan rural-based development during the country's 'modernization' as statically efficient but dynamically limited. Resources were allocated in a way that expanded output per worker across sectors, and per acre in agriculture, and so this proved to be a Pareto-efficient trajectory. This model was, however, dynamically limited in terms of its linkages with other sectors and its ability to channel profits and provide incentives to push Uruguay's 'early' (by Latin American standards) industrialization beyond its infant phase and contribute to the further diversification of the economy.⁸⁷ Its short term impact was an increase in living standards, which proved widespread despite concentrated landownership because of (a) the continued demand for labour in crop and animal farming, in the context of increased domestic and external demand for agricultural commodities and very limited change in agricultural techniques and technologies, and (b) the transfer of rents, via relative prices shaped by custom duties, from the export-oriented livestock sector to import-substituting light manufacturing, which could absorb new urban entrants to the labour market.

⁸⁴ An influential articulation of this thesis of Uruguayan economic history, written by an academic economist who was also a policy-maker, is Ramón P. Díaz, *Historia económica de Uruguay* (Montevideo, 2003). See also, from a neoclassical welfare economics perspective, the contributions to Michael B. Connolly and Jaime De Melo, *The Effects of Protectionism on a Small Country: The Case of Uruguay* (Washington, D.C., 1996).

⁸⁵ For a concise and insightful structuralist interpretation of this period, see Bértola, 'Primer Batllismo'. On how getting relative prices wrong can be a sound development policy for late industrialization, see the seminal work by Amsden, for example Alice Amsden, 'A theory of government intervention in late industrialization,' in *State and Market in Development: Synergy or Rivalry?*, ed. Louis G. Putterman and Dietrich Rueschemeyer (Boulder, 1992). For an overview of her influence in Latin American debates, see Helen Shapiro and Juan Carlos Moreno-Brid, 'Alice Amsden's Impact on Latin America,' *Brazilian Journal of Political Economy* 34, 2 (2014).

⁸⁶ A nuanced *dependentista* interpretation, drawing from both classical and Marxist economic theory, can be found in the fluently written and highly influential Instituto de Economía, *El proceso*. See also Luis Macadar, *Uruguay, 1974-1980: ¿un nuevo ensayo de reajuste económico?* (Montevideo, 1982).

⁸⁷ By c.1928, when comparative data is first available, manufacturing's share of GDP was 15.6% in Uruguay and 19.5% in Argentina, whereas it was below 10% in most of the continent, with the exceptions of Brazil (12.5%), Chile (12.6%), and Mexico (11.8%). Bulmer-Thomas, *Economic History*, 187; see also, for the discussion surrounding the original Uruguayan manufacturing data, Julio Millot, Carlos Silva, and Lindor Silva, *El desarrollo industrial del Uruguay, de la crisis de 1929 a la posguerra* (Montevideo, 1973).

The long-term legacy of this pattern of agrarian development, however, was less positive. Diversification remained limited, as shown by the fact that agriculture was still the largest employer, and the fundamentals of the leading livestock sector did not change: extensive techniques continued to dominate because the landownership structure made them profitable for large producers, but this limited the sector's potential for further productivity increases. Perhaps the most crucial long-term problem inherited from the consolidation of this insufficiently diversified economic structure during 'modernization' was a tendency to high levels of growth volatility, which underscored the disappointing twentieth-century performance of the Uruguayan economy.⁸⁸

4 Conclusion

The analysis of occupational structures has revealed much about the nature of and the limits to rural-based economic development in Uruguay in the late-nineteenth and early-twentieth century. Scholars have long debated whether the experience of Uruguay (and Argentina) during the First Globalization boom should be understood as a fragile prosperity built on exceptionally high relative prices for their primary commodities in the world market, or if the regionally-leading income levels in these countries reflected an economic structure which was genuinely more complex and provided more opportunities for improving living standards than that of the rest of Latin America.⁸⁹ From the perspective of global economic history, this question is relevant far beyond the River Plate: can the rise, or the transformations within, modern export agriculture in the periphery strengthen the prospects for self-sustained development rather than simply produce episodic growth?

This chapter constructed new evidence from primary sources to discuss that question for the case of Uruguay. It demonstrated, first, that agriculture was still the main employer in the economy by 1908. This finding implies that the structural shift out of the primary sector preceded 1890 and was not further deepened during the height of 'modernization': Uruguay's rural economy remained overwhelmingly agricultural throughout the period, with at least two-thirds of rural livelihoods tied to crop or livestock farming. Second, and relatedly, it proved that the very limited mechanization of Uruguayan agriculture in this period meant that it continued to demand labour in pace with population growth, and that the

⁸⁸ The volatility of Uruguayan long-term growth rates and terms of trade are very high even by Latin American standards: see Luis Bértola and Fernando Lorenzo, 'Witches in the South: Kuznets-like swings in Argentina, Brazil and Uruguay since the 1870s,' in *The Experience of Economic Growth*, ed. Jan Luiten Van Zanden and Sakari Heikenen (Amsterdam, 2004) and Bértola and Ocampo, *Economic Development*, 19.

⁸⁹ The wider debate was surveyed in Chapter 1. For an overview of the Argentine case, see Roy Hora, *Historia económica de la Argentina en el siglo XIX* (Buenos Aires, 2010): 165-255.

contributions of female rural workers in particular have been significantly underplayed in the literature. Third, it showed that the pace of productivity growth at the height of modernization was far higher in the burgeoning light manufacturing industry than in the livestock sector, while output per worker in arable agriculture expanded rapidly, but from a much lower base.

These challenges to some of the evidential bases of the conventional wisdom allow for an interpretation of economic change in this period that, while closer to the 'structuralist' perspective than to others, introduces some environmental nuance. Uruguay's rural development during the long-nineteenth century culminated, in the three decades following 1880, in a process of agricultural intensification. This was led by a few biological innovations in agriculture, especially the adoption of new breeds of cattle and changes to the crop repertoire, operating within the same technological frontier, defined by rainfed and animal-ploughed crop farming and extensive grazing management by workers on horseback in the livestock sector. While those few innovations did much to improve the efficiency of land use, within both pastoral and arable farming and in the balance between them, they left agricultural practices and the tools which empowered rural labour fundamentally unchanged across the vast majority of farms and ranches. The result was an impressive short-term expansion predicated on capitalising on Uruguay's comparative advantage on extensive livestock agriculture on natural pastures, which came at a long-term cost for both natural and human resources. The persistence of traditional livestock management practices applied to substantially larger herds than ever before contributed, particularly during times of overgrazing in autumn and winter, to the process of grassland degradation that life scientists have described as characteristic of the Uruguay's pastures in the long-term.⁹⁰ For human resources the long-term consequences were also problematic: while Uruguay in the late-nineteenth century benefitted from an early (by Latin American and by global standards) schooling revolution, economic growth did not translate into substantial investments in human capital in the decades that followed.⁹¹

The priorities guiding census-taking became emblematic of the perceived hierarchy between natural and human resources, and in particular of governments' idea of where the wealth of the nation lay: over the six decades that followed, the Uruguayan state successfully counted cattle and sheep herds an additional seven times and population only once more, to the great dismay of several generations of scholars.⁹² The methodology introduced in this chapter has the potential to overcome that bias and open a new trove of

⁹⁰ Panario and Bidegain, 'Climate'.

⁹¹ Luis Bértola and Reto Bertoni, 'Educación y aprendizaje: su contribución a la definición de escenarios de convergencia y divergencia,' *Documentos de Trabajo de la Facultad de Ciencias Sociales* DOL 20 (2012).

⁹² In the six decades following the population and agricultural censuses 1908, comprehensive livestock censuses were taken in Uruguay in 1916, 1937, 1943, 1951, 1961, 1966, and 1970; the only nation-wide population enumeration in that period was in 1963.

historical data for Uruguayan social science. The systematic examination of birth records can fill in the gaps created by the lack of demographic censuses between 1908 and 1963, which prevents us from answering such basic questions as when did Uruguay become a predominantly urban nation. Such new data, constructed from primary sources rather than projected backwards from late-twentieth century evidence, will be crucial in assessing the long-term legacy of agricultural intensification during Uruguay's 'rural modernization'.

The hypothesis suggested by this chapter is that rural development in this period was, in a sense, successful in the short term, perhaps too successful for its own good. After the productivity breakthrough provided by cattle crossbreeding and its related innovations, Uruguayan agriculture was not capable of encouraging further productivity gains in its leading sector. Export-oriented livestock agriculture stayed fundamentally unchanged in terms of its ownership structure and the basis of its international competitiveness, and remained highly vulnerable to international prices that were beyond its control. While export volumes and prices grew throughout this period, thanks to the demand for beef and other livestock by-products being reasonably income-elastic, Uruguay's share of their global trade decreased, as larger producers entered the market. In terms of structural change, the limits to diversification, which stalled after the initial growth of light manufacturing, made the entire economy vulnerable to such price swings, as successive crises during the twentieth century went on to show.



conclusion

The agrarian origins of modern Uruguay *

Uruguay is a small, highly urbanised country, where more than a third of the population live in the capital city. It has a well-founded reputation for progressive politics, often associated with its interventionist state and a close-proximity, relatively homogenous society. The export economy is, however, tied to its lightly populated countryside, where large estates practise specialised, extensive temperate-zone agriculture. These defining traits can be explained (and in some respects can *only* be explained) in relation to the rural ‘modernization’ of the late-nineteenth century: a shift from a variety of relations to land in subsistence and commercial farming to capitalist agriculture dominated by large estates. But, this thesis argues, part of the reasons contemporary Uruguay is the way it is are rooted in the history of agrarian development *before* 1870, and have to be explained with reference also to what did not change in the wake of ‘modernization.’

While Patricio Belén, Francisca Ximénez, and other rural workers of the late-colonial period, whether free or enslaved, would have been surprised by much of Uruguayan agriculture a century later (wire fencing and landholding systems, emancipation and labour relations), they would have been able to take part in the actual farming in almost all estates without any further training. The dynamics of the crop repertoire, the calendar and methods of sowing and harvesting, the daily routines of herding, the cycles of calving and gelding—they could have started work on all of these minutes after stepping out of the time machine. The mechanisms through which rural resources were allocated had changed profoundly, and with them the prospects for accumulation, but most agricultural techniques proved surprisingly stable and remained dependent on so-called ‘pre-modern’ patterns of environmental use. The agrarian origins of modern Uruguay are to be found in that contradiction, which might also help us think about its future.

This conclusion is a coda to that story over three movements. The first section explains how some features of historical rural development came to preside over modern Uruguay. The second section reflects on ‘agrarian capitalism’ as a conceptual device to analyse that development, and also discusses how useful different definitions of capitalism—a concept that has recently regained its lost audience—are for the task at

* The title of this conclusion is taken, along with much inspiration, from Thomas C. Smith’s remarkable book *The Agrarian Origins of Modern Japan* (Stanford, 1959).

hand. The final section considers how the contradiction between changes in resource ownership and allocation, on the one hand, and continuities in patterns of environmental exploitation, on the other, can be studied by (economic) historians, and with what consequences for our understanding of long-term development in Uruguay and beyond.

Agriculture, structural change, and relative backwardness

Labour scarcity and open access to agricultural land encouraged the people of ‘pre-modern’ Uruguay to choose high fertility strategies. Importantly, younger generations were not retained in the household. For the colonial period, Chapter 2 demonstrated how relatively open access to land saw parents petitioning for new plots for their children when they reached adulthood, while the population registers of the 1830s studied in Chapter 3 showed many families of the same last name living near each other, but not as part of a single peasant household. The result was a countryside of mostly large, young, nuclear families up to and including the decades of ‘rural modernization’ during the First Globalization. By 1908 those families still represented the majority of Uruguay’s population, and more of them worked in arable agriculture than in ranching. Nevertheless, the environmental advantages for ranching made it the cornerstone of export agriculture and labour productivity in the sector was far higher than in crop farming and in manufacturing by 1890, as Chapter 5 showed.

Against this background, changes in access to land interacted with technical change in agriculture, but not in a straightforward way. Chapter 4 explored a comparatively overlooked subject in the global history of agriculture, technical innovation in cattle rearing,¹ and found that estate sizes did not explain different regional rates of adoption of cattle crossbreeding in Uruguay in the late-nineteenth and early-twentieth century. Contrary to the conventional wisdom in the specialist historiography, latifundia-owners were willing to act as capitalists, while smaller producers were also able to do so. Differences in local environments, rather than in the scale of productive units, affected the expected profitability of adopting innovation and hence its take-up. But even if the ‘modernization’ of export-oriented livestock agriculture could have happened without latifundia, the fact is that it did not, and this had far reaching consequences for urban as well as for rural development.

The new ‘spatial code’—characterised by wire-fenced estates, more capitalised ranches, and the rise of farm tenancy agreements—encouraged demographic transition and funnelled immigrants to towns. In this sense, more limited opportunities to make an independent living in the rural economy promoted structural change and urbanization. Immigrants allowed the growth of light manufacturing to develop without having

¹ I thank Giovanni Federico for drawing my attention to this.

to draw people out of the rural workforce, as demonstrated in Chapter 5. Domestic food supply could be thus sustained without major technical improvements in crop farming, and the labour force in export agriculture could continue to increase, all the while achieving the second-largest share of manufacturing in output in Latin America (c.16%, behind Argentina) in the early-twentieth century.² The state coffers grew as well and became, per capita, the largest in the region.³ International trade (tariffs on agricultural exports and especially on the manufacture and coal imports they sustained) became the cash-cow of the modernizing Uruguayan state, which allowed it to invest in public education and physical infrastructure to a larger extent than most other Latin American countries, and to do so without having to rely mainly on direct taxation of its citizens.

But as Chapter 5 also argued, there were stark limits to this development path. Productivity gains in pastoral agriculture were already stagnating in the late-nineteenth century, and the international competitiveness of the sector remained tied to a favourable ratio between high prices in the world market and the low domestic cost of the ecological services of the natural grasslands. Some diversification did occur, but productivity in arable agriculture remained low, while labour and capital continued to be comparatively scarce, limiting the further development of manufacturing. A comparatively strong fiscal capacity, insufficient diversification, and a population geography characterized by vast open spaces surrounding a few towns and only one large city: these would all become long-term features of Uruguayan development. As such, we should bear them in mind when explaining Uruguay's development as well as its backwardness, including the relative prosperity of the late-nineteenth century, the decades of stagnation since the mid-twentieth, and the renewed cycle of growth in the early twenty-first.

Rural development and 'agrarian capitalism'

Since when can Uruguay's rural development be described as 'capitalist'? In what sense, if any, is it useful to think of it in those terms at all? In the long-nineteenth century, Uruguay was transformed from a rural economy in which landholding was widespread and negotiable (either from above through political grants or from below through collective squatting) and agricultural labour outside the family depended on slavery as well as on (mostly seasonal) free labour, to one where access to land was restricted to those who could buy it, tenants outnumbered landowning peasants, and the only form of extra-familial labour was paid in wages. These contrasting patterns of resource allocation were connected in non-linear ways to political and social actors and processes: slavery and abolition, states colonial as well as national, and wars both revolutionary and civil.

² Bulmer-Thomas, *Economic History*, 187.

³ *Ibid.*, 178.

Chapter 1 introduced a working definition of ‘agrarian capitalism’ as a system in which rural economic resources are allocated primarily through markets and are privately owned, including labour owned by the workers themselves.⁴ Thus defined, the term is, I think, useful to reflect on agrarian change in the context of our case study. It brings into analytical focus the fundamental changes in the way factors of production were organized for accumulation in rural Uruguay, while conveying the interconnections between property rights, markets, and the broader cultural world they emerged from and of which they were part.

On the subject of culture, which has been relegated to the sidelines for most of this dissertation (for no other reason than because I thought marginal returns would be greater in pursuing overlooked themes, and culture was not one of them), I should note that the shift towards a capitalist ‘spatial code’ in Uruguayan rural development had enormous cultural sway. This is epitomized by the controversies surrounding the nation-building myth of the gaucho, those fiercely independent ‘centaurs of the pampas.’⁵ Gauchos were not only taken as a leitmotiv by artists of all stripes, but their looming cultural presence was also seen by essayists and scholars as evidence that there had been no peasantry proper in Uruguay—yet another proof of supposed exceptionalism in the Latin American context, connected to the once dominant view that the abundance of cattle made farming an unpalatable occupation and semi-nomadism an appealing prospect.⁶ The irony is that (plot twist!) gauchos were peasants all along. The gaucho left the grasslands for the legends precisely when the ‘spatial code’ that allowed widespread peasant family smallholding on fenceless lands faded, and with it the ability to seek only temporary employment while retaining a subsistence foothold. Mid-nineteenth century contemporaries seem to have been less confused than later scholars: as Garavaglia pointed out, Francisco Muñiz’s 1845 dictionary of River Plate Spanish defined gaucho first and foremost as ‘peasants whether working in livestock or arable farming.’⁷ The echoes of this myth reach the present, when scholars and media hardly ever speak of ‘peasants’ (*campesinos*) in Uruguay, preferring the term ‘family producers’ (*productores familiares*).⁸

⁴ Of the range of recent definitions of ‘capitalism’ available in the literature, the one I proposed in pages 39-41 has the most in common with Jürgen Kocka’s in his *Capitalism*, 21-24. For a critical survey of the early-twenty-first century conceptual debates, see Gareth Austin, ‘The Return of Capitalism as a Concept,’ in *Capitalism: The Reemergence of a Historical Concept*, ed. Jürgen Kocka and Marcel van der Linden (London, 2016).

⁵ See, for an insightful overview, Raúl O Fradkin, ‘Centaures de la pampa: le gaucho, entre l’histoire et le mythe,’ *Annales. Histoire, Sciences Sociales* 58, 1 (2003).

⁶ See Virginia Rossi, ‘La producción familiar en la cuestión agraria uruguaya,’ *Revista Nera* 13, 16 (2012). Chapter 2 surveyed the relevant historiography in detail.

⁷ ‘campesinos bien sirvan como peones en la ganadería o en la labranza,’ Francisco Muñiz, *Voces usadas con generalidad en las Repúblicas del Plata, la Argentina y la Oriental del Uruguay* (1845) cited in Garavaglia, ‘Gauchos,’ 144.

⁸ Mercedes Figari, Virginia Rossi, and Rosario González, ‘Los productores familiares,’ in *El campo uruguayo*, ed. Marta Chiappe, Matías Carámbula, and Emilio Fernández (Montevideo, 2008).

Less demanding definitions of capitalism are, I think, ill-suited to describe Uruguay's historical rural development over the long period covered by this thesis. If capitalism means simply dependence on the market for economic survival, or the prevalence of profit-oriented mental attitudes, or the dominance of 'the imperative and strategies of private investment', then colonial estancias could be called capitalist.⁹ Indeed, there was plenty of scope for market behaviour, profit-seeking, and price signalling in so-called 'pre-modern' Uruguay, all of them reaching significant scale and dynamism in the case of livestock and their by-products. As Chapter 2 demonstrated, however, while late-colonial estancias were sites of organized production for long-distance trade, with time horizons stretching far beyond the next harvest as required by the long life-cycle of cattle, they operated in a rural economy in which more capital was held in slaves than in farms and ranches, and where access to agricultural land was only rarely gained through the market. If we were to consider that a capitalist economy, then 'capitalism' would become a mostly superfluous concept to describe the long-term changes studied in this dissertation because anyone whose way of making a living included producing cowhides for sale (and there were many such people in late-colonial and early-independent rural Uruguay) would be a capitalist.

Furthermore, whilst some definitions of 'agrarian capitalism' can help us make sense of the history covered by this dissertation, the concept does not lend itself well to precise dating: it would be unhelpful to look for the one day when by evening it suddenly became clear that capitalism had won over the Uruguayan countryside. We can instead identify a series of crucial turning points along the way: the demise of colonial mercantilism in the 1820s, slave emancipation since the 1830s and especially in the 1850s, the large-scale adoption of merino sheep in the 1860s, the mass wire-fencing of estates in the 1870s, systematic cattle crossbreeding since the 1880s. Instead of choosing a single golden spike among these candidates, I want to emphasise that if the death of the 'pre-capitalist' spatial code was slow, its afterlife was long and eventful. The last civil war was fought in 1904 still under the banner 'free air and fat beef'.¹⁰ Many rural people did not agree that the time of flexible landholding and direct appropriation of nature had ended, and the democratic opposition to a free market in land evidenced by the revolutionary-era *Reglamento de Tierras* of 1815, studied in Chapter 3, remained vibrant among them almost a century later. It was enough to go to war over because, as Chapter 5 demonstrated, agriculture continued to be the basis of rural livelihoods for two out of three adults in 1908, when most people still lived in the countryside.

⁹ As Samuel Amaral does for rural colonial Buenos Aires in *Rise of Capitalism*. The emphasis on 'organized market activity that took place over long distances' as a threshold for the beginning of the rise of capitalism is present in the definition by Larry Neal, 'Introduction,' in *The Cambridge History of Capitalism. Volume I: The Rise of Capitalism: From Ancient Origins to 1848*, ed. Larry Neal and Jeffrey G. Williamson (Cambridge, 2014): 6. Some 'new' historians of capitalism argue that 'we can add an "ism" to "capital" only when the imperatives and strategies of private investments come to dominance', see Joyce Appleby, *The Relentless Revolution: A History of Capitalism* (New York, 2011): 14.

¹⁰ 'Aire libre y carne gorda.' The classic study is Barrán and Nahum, *Revoluciones*.

'Agrarian capitalism' can therefore be a helpful concept to think about the major shifts in Uruguay's rural development during the long-nineteenth century, which implied a greater division of labour and spaces between agriculture and the processing of agricultural products. However, the agrarian basis of modern Uruguay are also about what did not change: the persistent dominance of livestock over crops, of land-extensive techniques over labour-intensive ones, and the continued reliance on 'cheap' nature (in the form of abundant grass cover, reliable yearly rainfall, and natural freshwater courses) to produce export commodities at competitive prices.

Landscapes and long-term development

This dissertation has tried, from the title onwards, to think about Uruguay's grassland landscapes as economic resources which are mobilised *for* production (i.e. 'land') and as situated environments which are themselves *produced* (landscapes). This double-edged meaning opens, I think, a promising avenue for the reciprocal integration of economic and environmental history. It can also contribute to a deeper understanding of the part played by natural resources in historical development, because, as Morrison argues, landscape 'rather than land as unadorned nature as in neoclassical economics, is thus closer to capturing the actual conditions of situated agricultural production.'¹¹ In my own sub-field of economic history, our account of the diversity of development paths across Latin America (as well as within and between other world regions) will be enriched by a more careful consideration of their changing landscapes.

I think the two dimensions implicit in the concept of 'landscape' capture the contradiction at the heart of the history of change in rural Uruguay, both before 1913 and in our own days. In the early twenty-first century technological change, in the form of livestock traceability and precision soybean agriculture, has again renewed the economic potential of Uruguay's grasslands, while new landholding patterns have emerged as transnational corporations coordinate production across a number of large estates.¹² However,

¹¹ Kathleen D. Morrison, 'Capital-esque Landscapes: Long-Term Histories of Enduring Landscape Modifications,' in *Landesque Capital: The Historical Ecology of Enduring Landscape Modifications*, ed. Mats Widgren and N. Thomas Håkansson (Walnut Creek, 2014): 52.

¹² On mandatory cattle traceability in Uruguay and its potential see Kimberly L VanderWaal et al., 'Network Analysis of Cattle Movements in Uruguay: Quantifying Heterogeneity for Risk-based Disease Surveillance and Control,' *Preventive Veterinary Medicine* 123 (2016); on the debates surrounding precision soybean agriculture, Matilda Baraibar, 'Green Deserts or New Opportunities? Competing and complementary views on the soybean expansion in Uruguay, 2002-2013' (PhD diss., Stockholm University, 2014); on 'land grabs' by foreign corporations, Gabriel Oyhançabal and Ignacio Narbondo, 'Land grabbing in Uruguay: new forms of land concentration,' *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 40, 2 (2019). For a contextual overview of agrarian change in early-twenty-first century Latin America, see Leandro Vergara-Camus and Cristóbal Kay, 'Agribusiness, peasants, left-wing governments, and the state in Latin America: An overview and theoretical reflections,' *Journal of Agrarian Change* 17, 2 (2017).

large-scale, highly specialised, extensive land use practices remain the standard, and the competitiveness of export industries is tied to the relative cheapness of resources (water, nutrients, and the topsoil itself) which replenish much more slowly than they are spent or eroded. Narrow agricultural specialization over extremely large tracts of land also risks reducing biodiversity, further deepening grassland degradation. Although we have seen that in the nineteenth century there were exceptions to this pattern, with shrubland formations regaining their footing after steel wire enclosures, they were unintended and indeed exceptional.

Aware that reconstructing the past is already hard enough, historians are rightfully wary of speaking of the future. Economic historians in particular are used to seeing their economist friends struggle with prediction, and so know better than to try. And yet it is difficult to not see the history of agrarian change in Uruguay as a warning of what is to come. While a cycle of specialized rural development can be a potent engine of growth, if its changing environmental basis is not taken into account, its ability to generate employment and income within and beyond agriculture will soon find its limits.



Appendix

This Appendix is a brief guide to readers interested in reproducing, testing, or modifying the quantitative exercises and data visualizations presented in the thesis. It also contains some additional evidence mentioned in the main text but not detailed there for reasons of space. If the data are unclear, or if readers find any other problem in working with the code or the supplementary files, please get in touch with me at emiliano.travieso@gmail.com, and I will do my best to assist you. Likewise, if you encounter any inconsistencies in the data, the code, or the shapefiles, please let me know. The default typefaces for the visualization themes are Minion Pro and Montserrat, which need to be installed in the target system for them to look exactly like the graphs in this dissertation, but can of course be substituted by any other typeface.

chapter 1

The ‘Data’ folder contains the replication package for Figures 1.1, 1.2, and 1.3 in R language (‘Chapter 1 code.R’). The underlying data are presented in CSV format. They were taken, respectively, from Acemoglu, Johnson, and Robinson, ‘Colonial Origins’, and the Maddison Database (Bolt et al, ‘Rebasing Maddison’). Latitudes are from Google Public Data Explorer. The ‘Map’ folder contains the shapefiles necessary to reproduce the map in Figure 1.4, including the grassland sub-regions (taken from Soriano, ‘Rio de la Plata Grasslands’), Uruguay’s provincial (*departamentos*) boundaries circa 1850, and the location of towns which had a regular station coach connection with Montevideo in the mid-nineteenth century (taken from *The Republic of Uruguay* (1862)).

chapter 2

The raw data for Table 2.1 is available in Excel format (‘Land titles.xlsx’) in the ‘Data’ folder. The calculation of the present value of slaves and free workers in Estancia Las Vacas can be reproduced in R-Studio with the replication code (‘Chapter 2 code.R’) available in the same folder. *Peón* wages were taken from BA, IX.6-8-1, ff.604; supplies for slaves from BA, IX.6-8-1, ff.687-694; interest rates from 99 surviving loan records printed in Pivel Devoto, *Colección*, 1188-1231; and average slave price from Newland and San Segundo, ‘Human Capital’.

Asset valuations and wealth composition

In 1751 the governor of Montevideo led a small military campaign against the *Minuanes*, a native community in the northeast of the Banda Oriental which the settlers intended to push further north. Taxing foreign trade was the prime and, together with fiscal transfers (*situados*), the only source of government revenue, so the *Cabildo* decided to levy an extraordinary wealth tax (3% imposed on total asset value) on the *vecinos* of Montevideo. The surviving records of the appraisal values (*tasaciones*) of the assets of 170 heads of household resulting from this one-time tax provide useful price data on slaves, livestock, and landed property. I rely on these appraisals to estimate the economic value of the assets reported by the first attempt at a population count in the history the region, the *Estado de vecinos y almas* of 1757, carried out three decades after the foundation of Montevideo, which provides us with 299 sets of household assets, comprising 1,991 people (about 40% of the estimated population living in the city).¹ The resulting dataset can be found in Excel format as ‘Wealth composition.xlsx’ in the relevant ‘Data’ folder. Using the 1757 enumeration rather than relying only in the tax records from 1751 not only results in a much larger sample size, but it also eliminates one likely bias: the fact that assets might have been poorly counted or underreported as they formed the unit of taxation.

Table A1 provides measures of inequality in wealth ownership in the of households recorded by the 1757 enumeration.² I use the technique developed by Lerman and Yitzhaki, ‘Income inequality’, and decompose the Gini index for asset ownership as follows (equation A1):

$$G = \sum_{i=1}^I s_i g_i r_i \quad [A1]$$

for all asset categories i , where s_i is the share of a particular category of wealth in total wealth, g_i gives the Gini index for that particular category of wealth, and r_i gives the Gini correlation of wealth in that asset category with the distribution of total wealth.

¹ For a historical demographer’s analysis of the source, see Osvaldo Pérez, ‘El Montevideo colonial a la luz del nuevo censo,’ *Revista del Instituto de Estudios Genealógicos del Uruguay* 28 (2004).

² For a comparable analysis of wealth inequality in another newly settled, pre-industrial society in the southern hemisphere in the 18th century, see Johan Fourie and Dieter Von Fintel, ‘The dynamics of inequality in a newly settled, pre-industrial society: the case of the Cape Colony,’ *Cliometrica* 4, 3 (2010).

TABLE A1. Asset inequality between Montevideo households, 1757 (N=299 households)

Asset category	Share of wealth	Gini of asset category	Correlation with total wealth	Share of total asset inequality
Cattle	0.44	0.91	0.96	0.53
Urban property	0.22	0.69	0.79	0.17
Slaves	0.11	0.83	0.84	0.10
Estancias (ranches)	0.06	0.73	0.81	0.05
Chacras (arable farms)	0.05	0.82	0.77	0.04
Sheep	0.05	0.89	0.87	0.05
Oxen	0.03	0.88	0.74	0.03
Horses	0.02	0.91	0.88	0.02
<i>Total wealth</i>	<i>1.00</i>	<i>0.73</i>		

Sources: 'Estado que manifiesta los vecinos y almas que hay en esta ciudad, y las haciendas que poseen. Montevideo, Octubre 1º de 1757', AGN, Biblioteca Nacional, Legajo 190, Inventario 016557; 'El Cabildo al Gobernador de Montevideo, Tasación de 1751,' published in Apolant, *Padrones*. The reference price for oxen was taken from Moraes, *Economías agrarias*, 345-346.

chapter 3

The replication code for Figures 3.3 and 3.4 is available in the file 'Chapter 3 code.R', which also contains the age heaping calculations cited in the discussion, based on the methodology by A'Hearn, Baten, and Crayen, 'Quantifying'. The relevant datasets extracted from the enumerators' books called by the code are available in CSV format in the same folder; details on the enumerators' books available in Montevideo's Archivo General de la Nación are given in Table 3.1. Figure 3.5 can be reproduced from the same code (lines 135-180), calling the data in 'diff_livestock.csv', taken from Acevedo, *Anales* and Vaillant, *El Uruguay* (details in Figure 3.5). The boundary data for the districts shown in Figure 3.2 can be found in the folder 'Data' which contains the shapefile 'Districts 1836.shp' and associated files.

chapter 4

The shapefiles in the 'Maps' folder contain boundary data at the spatial level of the Uruguayan court districts (*secciones judiciales*) existing in 1908 ('Uruguay_districts_1908.shp' and associated files), as well the railway stations in 1910 ('Uruguay_stations_1910.shp' and associated files). These were created through geo-

referencing historical maps and governmental decrees (references by variable below) and are provided in SHP format. They are optimised for the coordinate system WGS 1984 Web Mercator (auxiliary sphere); linear units are meters. In order to produce the maps in the chapter, or to conduct other analysis or representation on those boundaries, attribute data at the same spatial level is required. These are provided in CSV format ('Uruguay_districts_data.csv') in the 'Data' folder. These can be joined to the .SHP files using any mapping software (ArcGIS, QGIS, or others). The definitions and units of measure for each variable are provided in a separate file ('Uruguay_districts_definitions.xlsx'). The CSV file also contains all the data necessary to replicate the rest of the analysis and visualizations using the R code included in the 'Data' folder ('Chapter 4 code.R').

Attribute data

Altitude

Mean altitude in each district calculated with data from ESRI World Elevation services.

Crops

Hectares sown and hectolitres harvested of wheat, maize, barley, other cereals, potatoes, sweet potatoes, beans, and other vegetables. Source: «Cultivos por departamentos y secciones, y según nacionalidad de los agricultores», *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*, Tomo II, Parte II, Montevideo 1911, pp. 1131-1137.

Farms

Number of holdings, crop agriculture and pastoral agriculture area, kilometres of wire fencing, workers, capital, output value, and wages (all in nominal pesos). Source «Establecimientos agropecuarios por secciones», *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*, Tomo II, Parte II, Montevideo 1911, pp. 1026-1035.

Livestock

Head of cattle and sheep by breed (purebred, crossbred, 'native') and by kind (bulls, calves, oxen, etc.). Source: *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*, Tomo II, Parte II, Montevideo 1911, pp. 990-997; 1036-1040.

Railways

Access to railways was estimated as the linear distance from each district's centroid to the nearest station. Station coordinates georeferenced from Waterlow and Sons, 'The Central Uruguay Railway of Monte Video and its Connections, 1911' UL, Map Room. Maps.697.91.6. Freight cargo taken from or estimated on the basis of primary sources described below in 'III. Railways'.

Rainfall

Average annual rainfall was obtained for 52 meteorological stations for the period 1906-1913 (or longer periods where possible) from statistical yearbooks, and each district was assigned the average yearly rainfall recorded by the meteorological station closest to it. Source: “Lluvias. Promedios anuales obtenidos en las 52 estaciones pluviométricas establecidas en la República O. del Uruguay”, *Anuario Estadístico de la República Oriental del Uruguay. Años 1913 y 1914*, Montevideo: DGE, 1916, p. 9.

Population

District-level population taken from *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*.

Soils

Soil types and quality indexes (CONEAT) were taken from the Uruguayan Ministry for Agriculture’s 1976 high resolution survey and projected onto the court district map, assigning to each district the soil type that occupied most of its agricultural land. Source: *Clasificación de suelos del Uruguay*. Montevideo: Ministerio de Ganadería, Agricultura y Pesca, 1976.

Temperatures

Mean annual temperature in each district calculated from the 1961-1990 averages by Uruguay’s National Institute of Meteorology (INUMET) ‘Estadísticas climatológicas’.

Historical maps for boundary data

Araujo, Orestes. *Diccionario geográfico del Uruguay*. Montevideo: Dornaleche y Reyes, 1900.

“Carta del departamento de Cerro Largo.” Dirección de Topografía (MOP) (1951), Archivo Nacional de Planos de Mensura, Ministerio de Transporte y Obras Públicas, Montevideo. CPV266.

“Carta del departamento de San José.” Archivo Nacional de Planos de Mensura, Ministerio de Transporte y Obras Públicas, Montevideo. CPV261.

“Mapa del departamento de Canelones.” Dirección de Topografía (MOP) (1945). Archivo Nacional de Planos de Mensura, Ministerio de Transporte y Obras Públicas, Montevideo. CPV265.

“Paysandú. Creación de una nueva sección judicial.” Decreto del Poder Ejecutivo 10/01/1900, published in Matías Alonso Criado, *Colección Legislativa de la República O. del Uruguay*, Tomo XXIII, Montevideo: Barreiro y Ramos, 1901, p. 58.

Pereda, Setembrino. *Paysandú y sus progresos*. Montevideo: Imprenta El Siglo Ilustrado, 1896, p.41.

“Secciones Judiciales del Departamento de Montevideo.” Archivo General de la Nación, Montevideo. Mapoteca, Planera 31.

“Soriano. La obra colonizadora en el departamento.” Instituto Nacional de Colonización (1900). Colecciones digitales de la Biblioteca Nacional, Montevideo.

Crossbreeding and productivity

The specialist economic historiography agrees that cattle crossbreeding had a positive impact on Uruguayan agricultural productivity, both of labour and land.³ Because Chapter 4 uses crossbreeding rates as an indicator of the adoption of productivity-enhancing innovation, this relationship needed to be tested. Using the output value returns from the 1908 agricultural census, it is possible to measure the effect of crossbreeding on labour and land productivity and compare it with the effect of estate sizes, while controlling for other variables. It should be noted that the census-takers themselves acknowledged that output value was underestimated by the agricultural census's returns, as under-reporting of output was likely widespread.⁴ Nevertheless, these data remain the best way we have to confirm whether crossbreeding had an effect on productivity across varied geographical settings.

The effect of cattle herd improvement and farm sizes on the productivity of agriculture is therefore estimated through an ordinary least squares (OLS) model in the following form:

$$y_i = Constant + \beta_1 CattleCrossbreeding_i + \beta_2 FarmSize_i + \gamma X_i + \varepsilon_i \quad [A2]$$

On the left side of equation A2, the dependent variable y_i measures the agricultural productivity in district i in 1908. Productivity of labour (in hundreds of nominal pesos of yearly output per worker) or of land (in hundreds of nominal pesos of yearly output per hectare) are used in different specifications; logarithmic transformations were applied to smooth the right-skewed distribution of these variables. On the right side, the two main independent variables of interest are *CattleCrossbreeding* _{i} , which measures the share (in percentage) of cattle that was crossbred (that is, 'improved') in the herds of district i in 1908, and *FarmSize* _{i} , which measures the average size (in hectares) of the agricultural holdings in district i in 1908. X is a vector of control variables, and ε is an error term. Agricultural controls include enclosure density (in kms of wire fencing per hectare), wheat yields (in hundredweights harvested per hectare), oxen as share of livestock units (in %), stocking density (livestock units per hectare), bulls per cow (heads), and sheep per cow (heads). Environmental controls include soil quality (in CONEAT index), rainfall (in yearly millimetres), temperature (annual mean in °C), and altitude (average meters above sea level). Market access controls include distance to the nearest railway station (linear, in kms), and access to an immediate land border with Brazil (dummy). Demographic controls include population density (people per square km.) and

³ See, for an overview, Moraes, 'Capitalismo pastor'.

⁴ Census-takers had the same reservations regarding the Montevideo manufacturing census, which suggests that under-reporting output value was not exceptionally problematic in agriculture. *Anuario Estadístico de la República Oriental del Uruguay, Censo General de la República en 1908*: LXXV, LXXIX.

share of foreign-born population (in %). Summary statistics for these variables can be found in Table 4.1 in the main text.

After including the full set of controls, I still find a strong and positive effect of both cattle crossbreeding and landholding sizes in the labour productivity of agriculture (column 1 of Table A2). By contrast, the results show a negative, and also statistically significant, effect of large holdings on land productivity (column 2). Genetic improvements in cattle herds, on the other hand, retain a positive and significant effect on land productivity (column 2, row 1). While the sizes of the effects implied by the coefficients are subject to significant margins of error arising from the under-reporting of output values in the agricultural census, these results are useful in confirming in a systematic way the intuition present in the specialist literature about the positive effect of cattle crossbreeding on productivity in modernising Uruguay.

TABLE A2. Impact of cattle crossbreeding & farm size on productivity, 1908

	<i>Dependent variable:</i>	
	Labour productivity (log)	Land productivity (log)
	(1)	(2)
Cattle crossbreeding	0.013*** (0.004)	0.007*** (0.003)
Farm size	0.0002*** (0.0001)	-0.0002*** (0.0001)
Agricultural controls	Yes	Yes
Environmental controls	Yes	Yes
Market access controls	Yes	Yes
Demographic controls	Yes	Yes
Observations	197	197
R ²	0.343	0.734

Notes: OLS regressions, with logarithmic output value in hundreds of pesos per worker (col.1) and logarithmic output value in pesos per hectare (col.2) as dependent variables. Cattle crossbreeding (% of bovines crossbred) and farm size (in hectares) as independent variables of interest. Observations are Uruguayan court districts. Standard errors in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Sources: see Table 4.1.

Railway stations

Location and cargo

Railway transportation is negligible in present-day Uruguay. The vast majority of stations are not in operation for either freight or passenger travel. Therefore, the location of all stations was reconstructed by georeferencing a 1911 map drawn in London at the request of the largest railway company in Uruguay, the Central Uruguay Railway Company (CUR).⁵ Latitudes and longitudes were cross-checked against the location of the abandoned or repurposed buildings of the stations, which remain standing in most cases, and can be seen in satellite imagery. The shapefile containing the locations is available as part of the Additional Materials ('Uruguay_stations.shp' and related files).

The station-level freight cargo dataset by product group is available in CSV format also in the relevant folder in Additional Materials ('Uruguay_train_stations.csv'); values refer to kilograms of volume of each commodity transported in 1910. The volumes of freight cargo for each station were calculated as follows. For the stations belonging to the Central Uruguay Railway's combined system or to the North-eastern, Northern, and Eastern railway companies the Statistical Yearbook offers station-level cargo data in kilograms disaggregated by product groups and in some cases by individual products (*Anuario Estadístico de la República Oriental del Uruguay 1909-1910, Tomo I con varios datos de 1911*, Montevideo, 1912, pp. XXX-XXXVIII). Livestock is the exception: cargo is measured in numbers per type of animal (cattle, sheep, pigs, horses, and riding horses). Average weights from contemporary sources and from Bertoni, *Energía* were used to arrive at the final figure for total cargo weight dispatched by each station. Weights used are as follows: 370kg for cattle, 48kg for sheep, 120kg for pigs, 350kg for horses and riding horses. The estimated weight of animals transported is used to classify stations according to the volume of their cargo.

For the Midland Uruguay Railway Company the primary sources only provide us with aggregate data, which made it necessary to distribute the total between the stations of each section. In order to arrive at plausible estimates a three-step plan was followed:

- a) The cargo data was divided between the main branch (Paso de los Toros—Paysandú—Salto) and the secondary branch (Algorta—Fray Bentos). This was done by comparing the figures from 1909-1910 (when the Algorta—Fray Bentos extension had not been built) to the figures from 1911-1912 (the first full year after that extension was opened), and imputing all new cargo to the new branch. Midland's 1911 report mentions that the increase in receipts for freight cargo, particularly livestock, was due to the Fray Bentos extension, which gives some support to this assumption (*The Midland Uruguay Railway Company, Limited. Report of the Directors to the Proprietors with Statement of Accounts, for the year ended 30th June 1911*, p. 5). This thus permits working separately with the cargo from the main branch and the new extension.

⁵ Waterlow and Sons Limited, 'The Central Uruguay Railway of Monte Video and its Connections, 1911', London. UL, Map Room. Maps.697.91.6.

- b) Main branch. The main stations in the other networks dispatching ‘merchandise’ (i.e. manufactured goods) are near ports, such as Montevideo’s Central Station or Salto, or border cities, such as Rivera. Since data was already available on cargo dispatched from Salto (as it was a CUR station), all cargo in the ‘merchandise’ category of this branch was assigned to Paysandú, the only port on the main branch line. This is without doubt an exaggeration, but it seems plausible that almost all of the manufactured goods on the Midland’s main branch were dispatched from Paysandú. The rest of the cargo weight transported on the Midland’s main branch was divided thus: 44% livestock, 29% wool, 12% building materials, 5% cereals, and 6% company traffic (coal and railway building materials). Since the stations are near each other the distribution of the cargo between them does not significantly alter the interpolation analysis, so each station is assigned the same share of cargo. A random specialization pattern would result in 60% of the stations being specialised in livestock and 40% in wool. The assumption can be made that the stations closer to Paysandú, where *saladeros* were in operation, specialised in livestock and that stations further away from Paysandú and toward the centre of the country (where most of CUR’s stations specializing in wool are) specialised in wool. Of course, this arbitrary imputing of specialization patterns offers much room for improvement, but the only results significantly affected by it are the broad-brush classification of stations and the nearest neighbour analysis.
- c) Algorta—Fray Bentos extension. The increase in livestock traffic after the opening of the branch is assigned equally to each station between Algorta and Fray Bentos, except Algorta (which was already part of the main branch), Parada Liebig, and Fray Bentos. All the cargo classified as ‘frutos del país’ is assigned to Parada Liebig, and all ‘merchandise’ and building materials to Fray Bentos.

Nearest Neighbour Ratio

The nearest neighbour ratio (equation A3) usefully compares the sum of the observed mean distance between each station and its nearest neighbour of the same kind (\bar{D}_O) (A4) with the expected mean distance which would result from a random distribution of stations of that kind in the territory (\bar{D}_E) (A5). When the ratio is closest to zero it suggests greater clustering, whereas if it is closest to 1 it suggests the observed distribution was closer to a random distribution. The expected mean distance arising from a random distribution is calculated in relation to the minimum enclosing area around all features (A), which was set as the total land area of the Uruguayan territory.

$$NNR = \frac{\bar{D}_O}{\bar{D}_E} \quad [A3]$$

$$\bar{D}_O = \frac{\sum_{i=1}^n d_i}{n} \quad [A4]$$

$$\bar{D}_E = \frac{0.5}{\sqrt{\frac{n}{A}}} \quad [A5]$$

chapter 5

The occupational data behind Tables 5.2 and 5.4 are available as Excel files in the folder ‘Data/Dataset’. These include the detailed results of the 1908 census and the 1890 sample for male workers, both coded using the PSTI system (at the sixth point, September 2019 version).⁶ The visualizations presented in Figures 5.1, 5.4, 5.6, and 5.7 can be reproduced or modified with the replication package ‘Chapter 5 code.R’ available in the folder ‘Data/Visualizations’, which also contains the CSV files for which the code calls. The files necessary to construct map in Figure 5.2 can be found in the folder ‘Population’. These include the shapefile containing district boundaries (‘districts.shp’), the population data, including the variable ‘pop10percent’ (‘population_districts.csv’), and the layer symbology definition (‘pop10.lyr’). The primary sources for these attribute and boundary data are the same as those cited above for Chapter 4.

⁶ The definitions of occupational categories are available at:
<https://www.campop.geog.cam.ac.uk/research/occupations/datasets/coding/>

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