Sterling and the Stability of the International Monetary System, 1944-1971

Alain Naef

St Edmund's College

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This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text (see below and in footnotes in the text).

This dissertation is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my dissertation has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text.

This dissertation does not exceed the 80,000-word limit prescribed by the History Degree Committee.

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Collaboration and joint work disclaimer

The following parts of my dissertation draw on joint work with Eric Monnet and Michael Bordo:

- Section 3.3: The creation of the Gold Pool
- Subsection 4.1.2: The 1964 gold crisis and the impact of sterling
- Subsection 4.1.3: How sterling affected the London gold price
- Section 4.2: The 1967 Devaluation and the Fall of the Gold Pool

The different parts have been clearly identified with footnotes after the relevant titles. The joint work resulted in a paper which was written in true cooperation during my visiting stays at the Bank of France in June 2016 and at Rutgers University in January-May 2017. The research is available as a working paper on the website of the National Bureau of Economic Research (http://www.nber.org/papers/w24016). The text presented here has often been rewritten and on occasions presents slightly different views and arguments. It has also been enhanced by further research undertaken on my own.

Some of the foreign exchange data presented in this dissertation come from collaboration with David Chambers, Olivier Accominotti and Jason Cen. This large project has also involved the use of internal and external research assistants and therefore the data collected in this project is only partially the fruit of my own efforts. I was involved in this project during the first two years of my PhD and gained a detailed understanding of the underlying data. This only concerns the official London spot and forward exchange rate data. All offshore and transferable sterling exchange rate data presented in this dissertation are the sole fruit of my own work and were collected independently from this project.

Finally, section 2.2 ‘The 1949 devaluation: Readjusting the postwar parities’ partially draws on work undertaken during my MSc dissertation at the London School of Economics.

Introduction

On the evening of 18 October 1967 well past 10 pm, the governor of the Bank of England, Leslie O'Brien telephoned the chairman of the Federal Reserve to inform him of an imminent ½ per cent increase in the Bank Rate, in an attempt to relieve pressure on the exchange markets. The next morning, the announcement of the increase failed to convince the markets, which had been expecting a full 1 per cent increase. Officials at the Federal Reserve and the Bank of England called each other six times that morning before 11 am New York time.[1] The two central banks were worried about mounting pressure on sterling. The sterling exchange rate was close to the lower band of £2.78 per dollar, which had been agreed within the terms of the Bretton Woods system. A fall below that, they feared, would trigger a global financial crisis.[2] Sterling was not only the secondary reserve currency; London was also host to the world's largest gold market. The gold market announced the international gold price every day at 11 am. It was a daily barometer reading of the health of the entire Bretton Woods system.[3] A few weeks later, after more attempts to rescue the currency, sterling was finally devalued. This triggered a run on gold and foreshadowed the end of the Bretton Woods system.

This dissertation questions the importance of sterling to the stability of the Bretton Woods international monetary system. Sterling has been described in the literature as playing a secondary role, having lost its prime position during the interwar years.[4] This is true when it comes to its use as an international reserve currency.[5] However, I argue that sterling continued to play a crucial role in the stability of the international monetary system. It was thought of as the 'first line of defence for the dollar', and as such was central to the postwar international

[1] Telephone memoranda, William F. Treiber and David E. Bodner, 18 and 19 October 1967, New York, Archives of the Federal Reserve, box 617031.
[2] Charles A. Coombs, *The Arena of International Finance* (New York: Wiley, 1976).
[3] Rachel Harvey, 'Market Status/Status Markets: The London Gold Fixing in the Bretton Woods Era', in *The Global Gold Market and the International Monetary System from the Late 19th Century to the Present: Actors, Networks, Power*, ed. Sandra Bott (Basingstoke: Palgrave Macmillan, 2013).
[4] Barry Eichengreen, Arnaud Mehl and Livia Chitu, *How Global Currencies Work: Past, Present, and Future* (Princeton, NJ: Princeton University Press, 2017).
[5] See further discussion in subsection 1.1.4. After 1954, sterling was clearly the secondary reserve currency. See also Catherine Schenk, 'The Retirement of Sterling as a Reserve Currency after 1945: Lessons for the US Dollar?', *World Financial Review*, May 2011.

monetary order.[6] It certainly mattered to investors, who ran from the dollar to gold as soon as sterling came under pressure. They feared a sterling crisis would eventually turn into a dollar crisis.

I further argue that because sterling was the first line of defence, the Fed took the lead in trying to keep sterling afloat. Newly available evidence from the archives of the New York Federal Reserve shows that sterling was a major concern for the US central bank from 1964 onwards. The New York Fed understood that the decline of sterling was likely to trigger a run on the dollar. Charles Coombs, vice president of the New York Fed, argued in 1964 that a sterling devaluation 'would probably precipitate an international financial crisis of the first magnitude'.[7] This is exactly what happened in 1967 after sterling was devalued and marked the beginning of the end of the Bretton Woods system. It launched a run on gold which in turn triggered the collapse of the Gold Pool a few months later, in March 1968. The end of the Gold Pool led to the introduction of a two-tier gold market which eventually resulted in the demise of the Bretton Woods system. The two-tier market created two separate markets, one for the central banks and one for private investors. Central banks traded gold at $35 an ounce directly and private investors had access to the London gold market where the price surged rapidly. This showed the world that the US was no longer able to maintain the official gold–dollar parity in the London market and was a blow to the credibility of the entire Bretton Woods system. The 1967 sterling devaluation was also a problem for the US authorities, which had to sell just short of $2.5 billion in gold – almost 20 per cent of their reserves – following the run on gold.[8]

[6] The expression 'the first line of defence of the dollar' was used by contemporaries and is used in current literature. See Michael D. Bordo, Ronald MacDonald, and Michael J. Oliver, 'Sterling in Crisis, 1964–1967', *European Review of Economic History* 13, 3 (1 December 2009), 457.
[7] This was in front of the Federal Open Market Committee (FOMC), the principal executive body of the Federal Reserve system. Coombs, *The Arena*, 118.
[8] From November 1967 to April 1968, US gold reserves fell by $2423 million. St Louis Federal Reserve Bank, Federal Reserve Economic Data (hereafter FRED), M1476CUSM144NNBR.

These losses severely undermined confidence in the US's ability to defend the international gold–dollar standard.

The link between the sterling crisis and the dollar has been hinted at in previous literature but here I provide quantitative evidence of a contagion from the 1967 sterling devaluation to the gold market. Drawing on archives from the Bank of England, I demonstrate how Gold Pool intervention intensified immediately after the devaluation. I also show for the first time how the contagion started as early as 1964. Stress on sterling made investors reluctant to invest in either of the two key currencies: sterling and the dollar.

Archives from the Bank of France and the Bank for International Settlements (BIS) shed fresh light on the role France played in the collapse of the Gold Pool and ultimately the Bretton Woods system. The contention that France's conduct was one of the main causes of the collapse of the Gold Pool finds backing in the literature.[9] That a speech delivered by Charles de Gaulle in February 1965 threatened the stability of the international monetary system is also etched in popular belief. Here, and based on new data on the activity at the US gold window, I find that France played a much smaller role than previously believed. The persistence of the old belief is understandable as the gold window data presented here are not accessible to the public in the archives of the Federal Reserve. Only by reconstructing data from the BIS and the Bank of France was I able to reach this conclusion and present a revised view of the proximate causes of the demise of the Bretton Woods system.

1.1 Sterling and the Bretton Woods system

The following subsections show how the Bretton Woods system functioned. I review the literature on Bretton Woods and the role of sterling in the international monetary system. Both

[9] The literature is discussed further in Chapter III, but see for example Allan H. Meltzer, 'U.S. Policy in the Bretton Woods Era – Review – St. Louis Fed', *Federal Reserve Bank of St. Louis Review*, 73 (May/June 1991), 54–83.

the dollar and sterling were official reserve currencies (sometimes also called key currencies) and the following subsections review their relative importance.

1.1.1 The origins of the Bretton Woods system

There is abundant literature on the origins of the Bretton Woods system; here I provide only an overview of this literature.[10] The Bretton Woods system was conceived and negotiated in 1944 at the Mount Washington Hotel, Bretton Woods, New Hampshire, fuelled by a fear of a return to economic depression. The conference brought together 44 nations to create a new postwar world financial order.[11] The interwar depression had ended with the breakdown of the international monetary system and contributed to the onset of the Second World War. Historians have often insisted that the Bretton Woods conference was not a clear break with the past, but rather the continuation of ideas and policies that had been emerging during the interwar years.[12] Martin Daunton argues that the focus of the conferences on exchange rates came from policy-makers' belief that the Great Depression started with currency crises before spreading to trade.[13] Daunton quotes the US Secretary of the Treasury, Henry Morgenthau (who was also the chairman of the steering committee and US delegation):

> We saw currency disorders develop and spread from land to land, destroying the basis for international trade and international investment and even international faith. In their wake, we saw unemployment and wretchedness – idle tools, wasted wealth. We saw their victims

[10] For a more thorough overview see Michael Bordo and Barry Eichengreen, *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform* (Chicago: University of Chicago Press, 1993); Martin Daunton, 'Presidential Address: Britain and Globalisation since 1850: III. Creating the World of Bretton Woods, 1939-1958', *Transactions of the Royal Historical Society* 18 (2008): 1–42; Eric Helleiner, *Forgotten Foundations of Bretton Woods: International Development and the Making of the Postwar Order*, 1 edition (Ithaca, N.Y.: Cornell University Press, 2016); Ed Conway, *The Summit: Bretton Woods, 1944: J. M. Keynes and the Reshaping of the Global Economy*, 1 edition (Pegasus Books, 2016); Benn Steil, *The Battle of Bretton Woods: John Maynard Keynes, Harry Dexter White, and the Making of a New World Order* (Princeton University Press, 2014); Giles Scott-Smith and J. Simon Rofe, eds., *Global Perspectives on the Bretton Woods Conference and the Post-War World Order*, 1st ed. 2017 edition (New York, NY: Palgrave Macmillan, 2017).
[11] Eric Helleiner, 'A Bretton Woods Moment? The 2007–2008 Crisis and the Future of Global Finance', *International Affairs (Royal Institute of International Affairs 1944–)* 86, 3 (2010), 620.
[12] See for example Christopher S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History* 41, 4 (1 October 2006). 701; Helleiner, 'A Bretton Woods Moment?', 620.
[13] Daunton, 'Presidential Address', 2.

> fall prey, in places, to demagogues and dictators. We saw bewilderment and bitterness become the breeders of fascism, and, finally, of war.[14]

According to Daunton the goal was to repair 'monetary disorder' while avoiding the danger of fixed exchange rates, which were believed to be at the core of what went wrong in the interwar years.[15] Therefore, Article IV of the Articles of Agreement of the IMF provided for greater flexibility on exchange rates. The system was imagined as a fixed but flexible exchange rate arrangement.

First, Article IV, section 3(i) states that spot exchange rates should not differ from parity 'by more than one percent'. This meant that exchange rates could move up or down by 1 per cent, giving currencies an overall band of 2 per cent. Sterling was fixed between $2.78 and $2.82 from 1949 to 1967.[16] Subsection (ii) states that 'other exchange rates' within members' territories should not differ from parity 'by a margin which exceeds the margin for spot exchange transactions by more than the fund considers reasonable'.[17] This could have given the Fund discretion regarding the management of forward exchange rates, but the Fund decided to leave forward management to individual central banks. In 1959, the Radcliffe Report stated that the Bank 'is free to operate in the forward exchange market, though it is under no obligation to keep the forward exchange rate within fixed limits'.[18] *De facto*, it seemed that IMF surveillance applied mainly to spot rates.

Article IV also stipulated that each member's responsibility extended only to their own territories. This explains the variation observable in the offshore exchange rates referred to in this dissertation. The Radcliffe Report echoed this important point in 1959, stressing that the

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[14] Morgenthau, quoted in ibid., 3.
[15] Ibid., 4.
[16] These limits are technically 'a little less than one per cent.' as the Radcliffe Report notes. However, all parities were usually rounded up using 2.78–2.82 and 2.38–2.42 after the 1967 devaluation. *Committee on the Workings of the Monetary System* (hereafter *Radcliffe Report*), Cmnd 827 (London: HMSO, 1959), para. 325.
[17] 'Bretton Woods Conference, Final Act', Washington, Archive of the IMF, 22 July 1944, GD-48, 8329, 1944, p.24.
[18] *Radcliffe*, para. 327.

Bank 'is able to operate in other foreign exchange markets', but the 'Government is not, however, under any formal obligation to keep rates on those markets within prescribed limits'.[19] In that sense, Bretton Woods obligations were intended for national territories, not offshore markets.

Article IV, section 5 deals with changes in parity.[20] According to this article, changes should occur only to 'correct a fundamental disequilibrium'. This encouraged the monetary authorities to delay devaluation as far as possible.[21] Devaluations were used only as a last resort, often when a central bank was about to run out of reserves. Devaluations came with a high political cost as it would, as Obstfeld put it, 'signal incompetence [which] appears more generally to be a powerful deterrent'.[22] Therefore, devaluations were used only when no other option was available. The alternative, an overvalued exchange rate, was costly but did not explicitly demonstrate government incompetence. The opposite, undervalued exchange rates, were rarely an issue for electorates who often resisted revaluation of their currencies (as in Germany in 1957 and 1961). The IMF rules stipulated that for changes of less than 10 per cent in par value, 'the Fund shall raise no objection'. For adjustments between 10 and 20 per cent, the Fund should be given 72 hours to 'concur or object'. These timings were not respected during both the 1949 and 1967 British devaluations.

Some of the historiography reduces the negotiations to a simple dispute between John Maynard Keynes and Harry Dexter White, the leading British and US negotiators respectively.[23] The key narrative is that the debates between these two central figures shaped the next two decades. This is misleading on at least two accounts. First, the negotiations were

[19] Ibid.
[20] 'Bretton Woods Conference, Final Act', Washington, Archive of the IMF, pp. 24–25.
[21] Bordo and Eichengreen, *A Retrospective*, 45.
[22] Maurice Obstfeld, 'The Adjustment Mechanism', in *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, ed. Michael Bordo and Barry Eichengreen (Chicago: University of Chicago Press, 1993), 229.
[23] See for example Conway, *The Summit*; Steil, *The Battle of Bretton Woods*.

much more complex and far–reaching than the Keynes–White debate alone; and second, the actual negotiations held in Bretton Woods had little to do with the international monetary system that followed as the early version of the system still rely heavily on capital controls.[24]

On the first account, Eric Helleiner has parted from this simplified historiography to portray how the Bretton Woods negotiations were the result of a long-term process with origins in the interwar years.[25] Helleiner argues that Latin American countries played an important role in these negotiations. On the second point, there were major differences between the planned and the actual system. The Bretton Woods system as designed in 1944 included the early introduction of convertibility and free capital flows. Many have argued that the 'real Bretton Woods system' (as it is sometimes called) was only in place after the introduction of convertibility in late 1958.[26] The next section therefore looks at how the Bretton Woods system actually worked once the delegates had long left the Mount Washington Hotel.

1.1.2 The workings and issues of the Bretton Woods system

The Bretton Woods system presented three main problems, identified by both contemporaries in the 1960s and 1970s and economic historians: adjustment, liquidity and confidence. The adjustment problem was that, despite being designed as an adjustable exchange rate system, adjustments were too infrequent and largely chaotic. The liquidity problem was that, in a world with a limited gold supply, liquidity could be provided only by the US running a deficit with the rest of the world to provide dollars for trade and reserves. Finally, the confidence problem

[24] Ben Wubs also makes the point that the delegations were not homogenous, with the American delegation being made of both Democrats and Republicans as Roosevelt wanted the support of both parties. Ben Wubs, 'Beyen at Bretton Woods: "Much More Significant Under the Surface…"', in *Global Perspectives on the Bretton Woods Conference and the Post-War World Order*, ed. Giles Scott-Smith and J. Simon Rofe, 1st ed. 2017 edition (New York, NY: Palgrave Macmillan, 2017), 189–206.
[25] Helleiner, *Forgotten Foundations of Bretton Woods*.
[26] Michael D. Bordo, 'The Bretton Woods International Monetary System: A Historical Overview', in *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, ed. Michael Bordo and Barry Eichengreen (Chicago: University of Chicago Press, 1993), 3–109.

meant that the system could survive only if central banks were confident that the US could supply gold at $35/oz at the gold window. The more the US provided liquidity to the world by supplying dollars, the lower the gold cover ratio and therefore confidence. These last two problems were deeply interlinked.[27]

The first to flag problems with the Bretton Woods system was a Belgian economist and former Fed employee, Robert Triffin, in 1947.[28] The Triffin dilemma stipulates that the US had an interest in providing dollars to the global economy to foster global economic growth as it led to more US exports. However, by supplying these dollars to the world economy, US policy-makers eroded confidence in the dollar by making their commitment to convert dollars into gold less credible. The problem needed solving. It only became more prominent in the early 1960s when the dollar went into crisis, with the gold price surging in London. This first attack on the dollar forced western central banks to take action.

France was an important participant in this debate, demanding more orthodoxy from the US and an international currency that would not favour one nation over others. Eichengreen discusses France wanting to return to a pure Gold Standard as argued by Charles de Gaulle on the advice of Jacques Rueff.[29] Rueff had successfully fought inflation in the past and therefore had the trust of the French president. However, as will be argued in this dissertation, the influence of France was negligible outside policy circles. This can be seen in de Gaulle's inability to move markets by his actions and grandiose speeches. The Germans' position, according to Eichengreen, was to favour the status quo as they were anxious to enhance their 'image as a loyal member of the Western alliance'.[30] British policy-makers presented a more realistic option of a new form of synthetic currency, such as the bancor which had been

[27] On the link see for example Obstfeld, 'The Adjustment Mechanism'.
[28] Barry Eichengreen, *Exorbitant Privilege: The Rise and Fall of the Dollar* Oxford: Oxford University Press, 2012), 52.
[29] Ibid.
[30] Ibid.

proposed by Keynes during the Bretton Woods negotiations. Such a currency would have been backed by national currencies and advantageous to Britain, as it would have helped to tackle the problem of sterling balances or unconvertible sterling held abroad. However, the Bank of England, as I argue in Chapter II, did not have a clear vision to solve the issues of the Bretton Woods system.

Eichengreen argues that the US policy-makers did not know what to do to solve the issues of the Bretton Woods system and hence stuck to their original plan of defending the official gold window.[31] For its part the Federal Reserve, as argued in this dissertation, was exploring solutions to the problems of the international monetary system but did not have any sense of urgency. The institution was critical of comments by Triffin. The system eventually changed in the late 1960s with the introduction of SDRs, but this was too little to save it.

The Bretton Woods system presented a clear imbalance between the core and the periphery as presented by Eichengreen in *Global Imbalances and the Lessons of Bretton Woods* in 2006. He argues that after the interwar collapse, the US wanted a system that offered monetary stability, whereas the UK favoured a system that left domestic monetary policy for national governments to decide.[32] This created the adjustable-peg system whereby countries, in theory, maintained a fixed exchange rate which could be adjusted in the event of imbalances. In practice, however, adjustments were painful and rare.

Another area where compromises were reached was on the movement of capital. The US and the UK agreed to work towards convertibility in Europe (this was achieved in late 1958) while agreeing to keep controls on the capital account. Eichengreen also argues that the Bretton Woods system was essentially based on the dollar, which met the reserve needs of the central banks, which a finite world gold supply was unable to meet.[33] The system presented an

[31] Ibid.
[32] Barry Eichengreen, *Global Imbalances and the Lessons of Bretton Woods* (Cambridge, MA: MIT Press, 2007), 9.
[33] Ibid., 10.

inherent instability due to central banks' preference for gold. If the central banks started doubting the credibility of the US dollar, they would be tempted to convert their dollar holdings at the Federal Reserve gold window. This, in turn, would create a confidence crisis, and therefore a self-fulfilling run on the entire system.[34] And if the US undertook more restrictive monetary and fiscal policies, or worse, under political pressure implemented protective measures, they would reduce their capacity to export to Europe. Similarly, European economies were reluctant to revalue their currencies against the dollar to avoid harming their exports.[35] Eichengreen shows how the Gold Pool failed to provide a credible solution to the issues of the Bretton Woods system. This dissertation agrees with his reading of the Gold Pool, but it also offers a novel interpretation of its fall, focusing more on the role of sterling and less on the role of France and de Gaulle.

1.1.3 Britain, sterling and the Bretton Woods system

Here I focus on the literature on the role of Britain in the Bretton Woods system. When taking a British perspective, there is also a wide body of literature analysing the workings of the exchange rate and monetary policy in Britain after the war. What is instrumental to this dissertation is understanding how Britain affected the international monetary system. The relationship between the US and Britain is central here. Much has been written about how Britain used sterling to receive financial aid. However, there seems to be little analysis of the impact sterling had on the stability of the international monetary system.

I engage with the work of Catherine Schenk in her book *The Decline of Sterling*. This book is a major contribution to our understanding of sterling after the Second World War. Schenk's main argument is that 'sterling's international role was prolonged by the weakness

[34] This shortcoming is studied in more detail in the section on the Gold Pool.
[35] Eichengreen, *Global Imbalances*, 11.

of the international monetary system and by collective global interest in its continuation'.[36] The international monetary system could not yet rely on the dollar alone. The retreat of sterling as an international currency, Schenk argues, was the collective effort of governments around the world. Her book argues that, unlike what was believed by many macro-economists, two reserve currencies could and did in fact coexist.[37] This is in line with work by Eichengreen who has demonstrated that the transition from one leading reserve currency to another has historically been a gradual process and that reserve currencies often cohabit.[38]

Here I expand on Schenk's work by looking at the retreat of sterling from the point of view of the foreign currency dealing room of the Bank of England. My focus is more on the foreign exchange operations, whereas Schenk looks at the question from the government's point of view. I question Schenk's view of why sterling was important. She argues that the British government 'was able to convince other governments that sterling's international role was critical for the stability of the international economy'.[39] I challenge this view. My argument is that the Fed understood that sterling was important almost despite the British government's opinion. And the opinion of the Fed mattered to policy-making in Washington. In 1964, Coombs, the main expert on currency questions at the FOMC, argued that a British devaluation would trigger an international financial crisis.[40]

Analysing archival records of the Fed's research department (see Chapter II), I argue that the Fed understood the importance of sterling for international monetary stability; it did not need to be convinced of this by the British government. Even more, I argue that the Fed had a better understanding of the international monetary system than did the Bank of England.

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[36] Ibid., summary page.
[37] See for example Frankel and Chinn, who argue that after the war, 'the dollar emerged as the uncontested leader among international currencies', Menzie Chinn and Jeffrey Frankel, 'Why the Euro Will Rival the Dollar', *International Finance* 11, 1 (1 May 2008):,49.
[38] This is discussed in more detail in the following subsection. For a good summary of this argument, see Eichengreen, Mehl and Chitu, *How Global Currencies Work*.
[39] Catherine Schenk, *The Decline of Sterling: Managing the Retreat of an International Currency, 1945–1992* (Cambridge: Cambridge University Press, 2010), front cover summary.
[40] Coombs, *The Arena*, 118.

The Fed was therefore even more concerned about sterling than the British government was. This is essentially what the economist Harry Johnson argued in 1968 when he wrote that the US 'supported the $2.80 price of the pound on the grounds that maintenance of the stability of the pound was the first line of defense of the dollar'.[41] As further evidence, it was the US in 1967 that did everything to avoid a further sterling devaluation by providing additional financial support to the pound, which the British government refused as it came with the implicit understanding that Britain would have to sustain its overseas military expenditure.[42]

The reason why the Fed understood so well the importance of sterling was because it was a modern central bank, with a strong focus on research. The Bank of England, in comparison, was less focused on research and was slower to adapt. This was apparent during Governor Cobbold's speech at the annual dinner of the Overseas Bankers Club at Guildhall when he asserted that 'the Bank of England must be a Bank and not a study-group'.[43] Communication was completely different in the two institutions. Newly available archives from the New York Fed show this. Novel ideas and proposals to reform the international monetary system were openly discussed there.[44] The Bank of England, on the other hand, seemed wedded to the idea that the solution to the problems of the international monetary system was for the US to devalue the dollar against gold on its own accord. The US was not going to take this decision unless gold reserves came under pressure. Not only was the US, the new hegemon, unwilling to undertake this unpopular exercise, but also it would have destabilised the Bretton Woods system by convincing investors that another devaluation was possible.

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[41] Harry G. Johnson, 'The Sterling Crisis of 1967 and the Gold Rush of 1968', *Nebraska Journal of Economics and Business* 7, no. 2 (1968): 3.
[42] Catherine Schenk, *The Decline of Sterling: Managing the Retreat of an International Currency, 1945–1992* (Cambridge University Press, 2010), 157–85.
[43] Forrest Capie, *The Bank of England: 1950s to 1979* (Cambridge: Cambridge University Press, 2010), 99.
[44] Evidence shows for example that important memoranda with ideas concerning the international monetary system were circulated to more than 30 staff members.

Others have emphasised the importance of sterling for the international monetary system. Eichengreen argues that the 'United States saw sterling as the dollar's first line of defence', somewhat echoing Coombs' claims.[45] As the world's secondary reserve currency, Eichengreen argues, a devaluation 'would shake confidence in the entire reserve currency system'. This again is in line with Coombs, who was in favour of extending sterling's credit line during FOMC meetings. Forrest Capie also refers to Coombs when narrating the events of the sterling crises from 1964 and his instrumental role in securing credit to support the currency.[46]

Bordo emphasises this role of first line of defence for the dollar and shows how sterling posed a central problem of confidence.[47] He further argues that the 'Bretton Woods system collapsed between 1968 and 1971 in the face of US monetary expansion that exacerbated worldwide inflation'.[48] This dissertation agrees that US monetary expansion was at the heart of the confidence problem. I also argue, however, that what triggered the fall of the Bretton Woods system was the 1967 devaluation, which forced the creation of a two-tier gold market. US inflationary policy played a major role and the fall of sterling triggered the crisis.

I argue that any shock to sterling would necessarily be a shock to the entire Bretton Woods system. As the first line of defence of the dollar, sterling was the trigger for most of the dollar's serious crises. It started in 1949 when sterling devaluation led to devaluations across the world in order to adjust to a stronger dollar after the war. Sterling was centre stage and no other nation would have devalued without Britain's lead. Then again in 1964, Britain saw a record deficit in merchandise trade as a consequence of a pre-election boom. The incumbent Conservative government did not want to implement deflationary measures but left this to the

[45] Barry Eichengreen, *Globalizing Capital: A History of the International Monetary System*, 2nd edition (Princeton, NJ: Princeton University Press, 2008), 123.
[46] Capie, *The Bank of England*, 203.
[47] Bordo, 'A Historical Overview', 54.
[48] Ibid., 82–83.

new Labour government, which gained office in October 1964. Labour did not want to be the party of devaluation just after the election, yet the new Cabinet failed to impress markets with other deflationary measures.[49] This was the start of a long sterling crisis, and this crisis had an impact on the stability of the international monetary system as I argue in Chapter III.

The first body blow to the Bretton Woods system was a consequence of the 1967 sterling devaluation, which led to an unprecedented run on gold, rather than pressure from France. The event was not the only cause of the problems with the Bretton Woods system, but it was a clear trigger. This interpretation is made possible by the use of newly available data. Gold prices, forward sterling prices and Bank of England intervention data clearly establish when stress on the international monetary system was at its height. Quarterly data from the BIS point to which central banks ran at the gold window, and confirm the minor role France played. What France did in this period, such as de Gaulle's 1965 press conference, was certainly dramatic but had little effect on the eventual collapse of the Bretton Woods system. Admittedly, they had political consequences and forced the US to take a stand, but they did not trigger a major panic in the market. On the other hand, the sterling crises as an explanatory factor for the fall of the Bretton Woods system have not been brought forward in recent literature. Although they were less theatrical, their role in the fall of Bretton Woods is absolutely central.

1.1.4 Sterling's reserve currency role after the war

In this subsection I focus on the role of sterling during the 1950s and 1960s. Was sterling a major international currency or was it simply an awkward relic of the British Empire that had to be dealt with? Allan Meltzer puts it simply: 'At the outset, in recognition of its historic

[49] Eichengreen, *Globalizing Capital*, 125.

position, the British pound was a reserve currency, akin to the dollar.'[50] But matters quickly changed after the war.

Barry Eichengreen and Marc Flandreau demonstrate how as early as the mid-1920s the dollar overtook sterling as the lead reserve currency, contrary to what was assumed in previous accounts; however, the two currencies continued to contest each other for leadership during the interwar years. Eichengreen's research also explains that after this period of rivalry, the dollar finally overtook sterling.[51] He also demonstrates that two international currencies can coexist and argues that this was the case during the interwar years.[52] The 1933 dollar devaluation restored sterling to its leading role. Hence, for much of the interwar years, the two currencies shared the reserve currency role. Their research, however, focuses on the interwar years and says little about when the dollar took over again after 1945.[53]

Schenk demonstrates that among the central banks' reserves, sterling was the most important currency until 1955.[54] She argues that, after 1945, sterling still had a role to play as the international financial system was too weak, and that sterling was used not only by loyal members of the Commonwealth but also by countries such as Iraq and Kuwait, which kept sterling reserves despite not being members of the Commonwealth.[55] On the other hand, Eichengreen sees the role of sterling as merely a historical legacy.[56] Members of the actual and former British Empire had given the UK an 'unlimited credit line', he argues, and continues:

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[50] Allan H. Meltzer, *A History of the Federal Reserve, Volume 2, Book 2, 1970-1986*, Reprint edition (Chicago: University of Chicago Press, 2014), 686.
[51] Most of Eichengreen's work on the question has been published in a book covering the articles mentioned in this paragraph: Eichengreen, Mehl and Chitu, *How Global Currencies Work*.
[52] Barry Eichengreen and Marc Flandreau, 'The Rise and Fall of the Dollar (or When Did the Dollar Replace Sterling as the Leading Reserve Currency?)', *European Review of Economic History* 13, 3 (1 December 2009), 379.
[53] In a later paper, Eichengreen and Flandreau show that similar trends were at work in international trade; trade or banker acceptances, which were an important instrument of international trade credit, become progressively denominated in dollars, with the US dollar overtaking sterling in the mid-1920s. Barry Eichengreen and Marc Flandreau, 'The Federal Reserve, the Bank of England, and the Rise of the Dollar as an International Currency, 1914–1939', *Open Economies Review* 23, 1 (1 February 2012), 57–87.
[54] Schenk, 'The Retirement of Sterling as a Reserve Currency after 1945'. In figure 1 of this paper sterling is the most important reserve currency until 1955 (using a valuation in SDR).
[55] Schenk, *The Decline of Sterling*, 88.
[56] Eichengreen, *Exorbitant Privilege*, 40.

‘Superficially this created the impression that the pound was still the leading reserve currency. But two-thirds of overseas financial claims on the UK were in the hands of that small part of the world that comprised the sterling area.’ Figure 1 makes clear that for much of the period most sterling reserves were in the hands of sterling area countries. However, this does not mean that sterling had no international role.

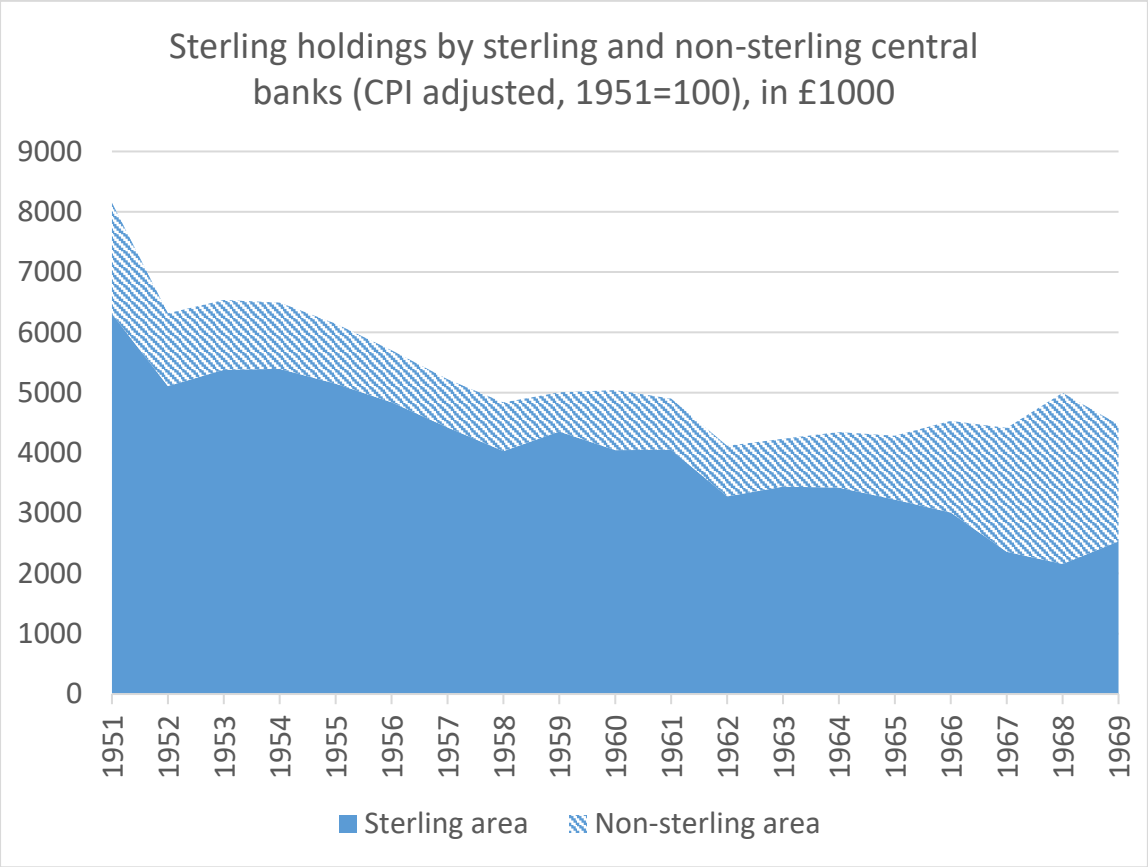

Figure 1 Sterling reserves in sterling area and non-sterling area central banks, adjusted for inflation

Source: IMF, ‘International Financial Stability Reports’, various years; Office of National Statistics for CPI figures.

Overall, there is a consensus that the dollar was the leading reserve and international currency of the world in the Bretton Woods period. It is less clear what role sterling played. I argue that if sterling’s role as a reserve currency was mainly a legacy after the war, the currency still played an important role in the way investors assessed the probability of a dollar

devaluation. If they saw a run on sterling, they anticipated a run on the dollar to follow. Contagion from sterling was not due to the currency's reserve status *per se*, but rather to the fact that a sterling crisis could trigger a run on the dollar. If sterling could be devalued, then so could the dollar. Therefore, sterling did have a central role to play.

1.1.5 Bretton Woods and central bank cooperation

Central bank cooperation was important during the Bretton Woods period. Most of the cooperation efforts took place during monthly meetings at the BIS, an institution that was set up to 'to promote the co-operation of central banks'.[57] In this dissertation, I review how cooperation between the Fed and the Bank of England was set up. Newly available archival materials show that the Bank was slow to warm to the idea of cooperation until the early 1960s, when it acknowledged the crucial importance of swap contracts with the Fed if the parity were to hold. I demonstrate how cooperation was functional only from 1960 to 1969, the year the Nixon administration took power.

Central bank cooperation has been the subject of a broad literature and engaged debates among economic historians. Central bank cooperation during the pre-war Gold Standard is much debated.[58] Later, during the interwar years, central bank cooperation broke down, somewhat mirroring the political breakdown in Europe leading to the Second World War. Even if some cooperative efforts – such as the 1936 Tripartite agreement – were instituted, the period is best known for competitive devaluations and currency wars. This, so the story goes, is what persuaded policy-makers to attempt to avoid repeating earlier mistakes. This willingness to cooperate lies at the heart of the Bretton Woods period, which was meant to be a time of close

[57] 1936 annual report of the BIS, quoted in Capie, *The Bank of England*, 162.
[58] The mainstream view of cooperation in Eichengreen is challenged in Flandreau. Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression, 1919–1939: Gold Standard and the Great Depression, 1919–39*, new edition (Oxford: Oxford University Press, 1996); Marc Flandreau, 'Central Bank Cooperation in Historical Perspective: A Sceptical View', *The Economic History Review* 50, 4 (1997), 735–63.

collaboration.[59] Beggar-thy-neighbour or competitive devaluations and gold hoarding were to be replaced by coordinated intervention and international swap facilities.

Cooperation intensified with the introduction of convertibility in late 1958, when it became clear that the fully functioning Bretton Woods system would need 'a good deal of international coordination and even intervention'.[60] Piet Clement argues that after the fall of the Gold Pool and even more so in 1971–73, central cooperation lost momentum.[61] Toniolo and Clement illustrate how BIS meetings were the institutional framework for cooperation when central bankers met in an informal atmosphere to discuss important matters.[62]

Coombs narrates the meetings in Basel from an insider's perspective, having taken part in most of these monthly meetings. Coombs' narrative casts a positive light on these meetings, presenting them as central to the management of Bretton Woods. Coombs argues that the meetings were efficient because they did not involve governments but central bankers only. Cooperation would take place if national interests converged: 'None of us were romantic internationalists. But where we could see a clear overlapping of national interests, our minds instinctively reached out to one another.'[63]

Central banks also cooperated in joint market operations. An example was in 1965 when the Federal Reserve and the Bank of England coordinated operations in what is known as the 'sterling bear squeeze'.[64] By coordinating intervention, the two central banks succeeded in easing pressure on sterling for several months.

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[59] This narrative is found in many accounts. See for example Piet Clement, 'Introduction: Past and Future of Central Bank Cooperation', 4.
[60] Ibid.
[61] Ibid., 5.
[62] Toniolo, Gianni, and Piet Clement. *Central Bank Cooperation at the Bank for International Settlements, 1930-1973*. Cambridge University Press, 2005.
[63] Coombs, *The Arena*, 29.
[64] Ibid., 107–30; Michael D. Bordo, Owen F. Humpage and Anna J. Schwartz, *Strained Relations: US Foreign-Exchange Operations and Monetary Policy in the Twentieth Century* (Chicago: University of Chicago Press, 2015).

Cooperation comes down to personalities and is difficult to assess. Another contribution of this dissertation is to review an extensive corpus of telephone conversation records between the Fed and the Bank. These records offer a unique insight into day-to-day central bank cooperation. What was the tone of these conversations? How familiar with each other were the interlocutors? Did they disclose what was really happening? These questions can be answered from these transcripts.

1.1.6 The macroeconomic trilemma under Bretton Woods: was there an escape?

The following paragraphs present the macroeconomic trilemma, a simple theoretical framework which helps us understand the trade-offs governments faced when it came to exchange rate and monetary policy. The trilemma is sometimes called the fundamental trilemma of international finance. It stipulates that policy-makers have to choose two of the following three policies: free capital flows, fixed exchange rate and monetary policy independence. The model presents the choices as binary (fixed or floating exchange rate, capital controls or free capital flows, independent or dependent monetary policy). Yet, choices are more complex. As Maurice Obstfeld and Alan Taylor argue, these choices are based on a continuum.[65] For example, a country might have no official exchange rate target but might intervene periodically to influence the exchange rate. Or capital controls might apply to limited categories of capital flows and not all. That said, the framework helps us understand exchange rate policies. Figure 2 presents a schematic version of the macroeconomic trilemma.

The period covered in this dissertation offers two trilemma settings. First, until 1958, there was a period when most governments renounced free capital flows and introduced capital controls (position 3 on the chart below). The UK had relative control of capitals flows and fixed

[65] Maurice Obstfeld and Alan M. Taylor, *Global Capital Markets: Integration, Crisis, and Growth* (Cambridge: Cambridge University Press, 2005), 31.

exchange rates and could set its monetary policy somewhat independently. Convertibility in December 1958 forced the country to allow freer capital flows.[66] Consequently, British policy-makers had to choose between leaving the Bretton Woods fixed exchange rate system and giving up the ability to set their own monetary policy. They wanted to do neither. Harold Wilson, prime minister from 1964 to 1970, explained what fixed exchange rates and free capital flows meant to the government: 'Every action we took had to be considered against a background of the confidence factor, particularly against our assessment of what speculators might do.'[67] Wilson's speculators were overseas sterling holders wondering whether to sell their sterling before a possible devaluation as well as British citizens buying dollars.

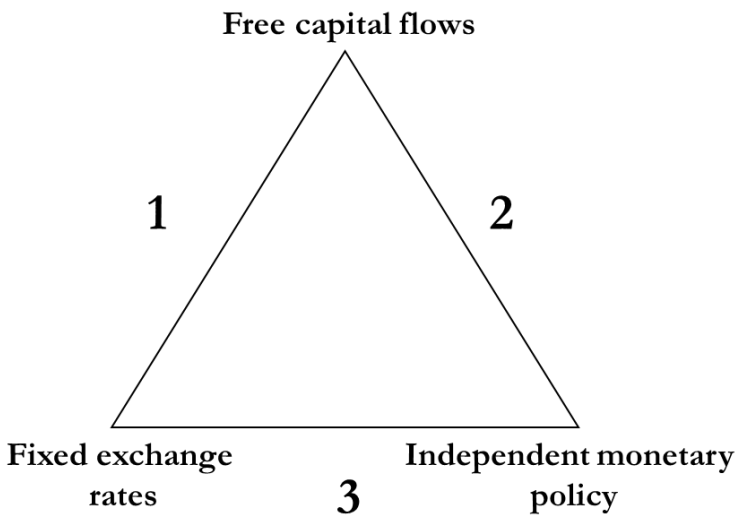

Figure 2 Macroeconomic trilemma

Source: First labelled by Maurice Obstfeld, 'The Global Capital Market: Benefactor or Menace?', *The Journal of Economic Perspectives*, 12, 4 (1998): 9–30 and Alan M. Taylor and Maurice Obstfeld, 'The Great Depression as a Watershed: International Capital Mobility over the Long Run', in *The Defining Moment The Great Depression and the American Economy in the Twentieth Century*, ed. Michael D. Bordo, Claudia Goldin and Eugene N. White (Chicago: University of Chicago Press, 1998), 353–402.

Freer capital flows also meant that interest rates had to be coordinated. For example, if the US increased its interest rates, capital would flow out of Britain to the US. This would put

[66] There were still many controls on capital flows, most of which survived until the 1980s.
[67] Harold Wilson, *Labour Government, 1964–70: A Personal Record* (London: Michael Joseph, 1971), 32–33.

pressure on the exchange rate, which would have to be dealt with by intervention or by increasing British interest rates. This would have consequences for domestic conditions (such as by allowing unemployment to rise). Figure 3 presents the both British and US interest rates over the Bretton Woods period. The daily series display a certain amount of co-movement and seems to suggest, as expected, that UK interest rates broadly followed US interest rates.

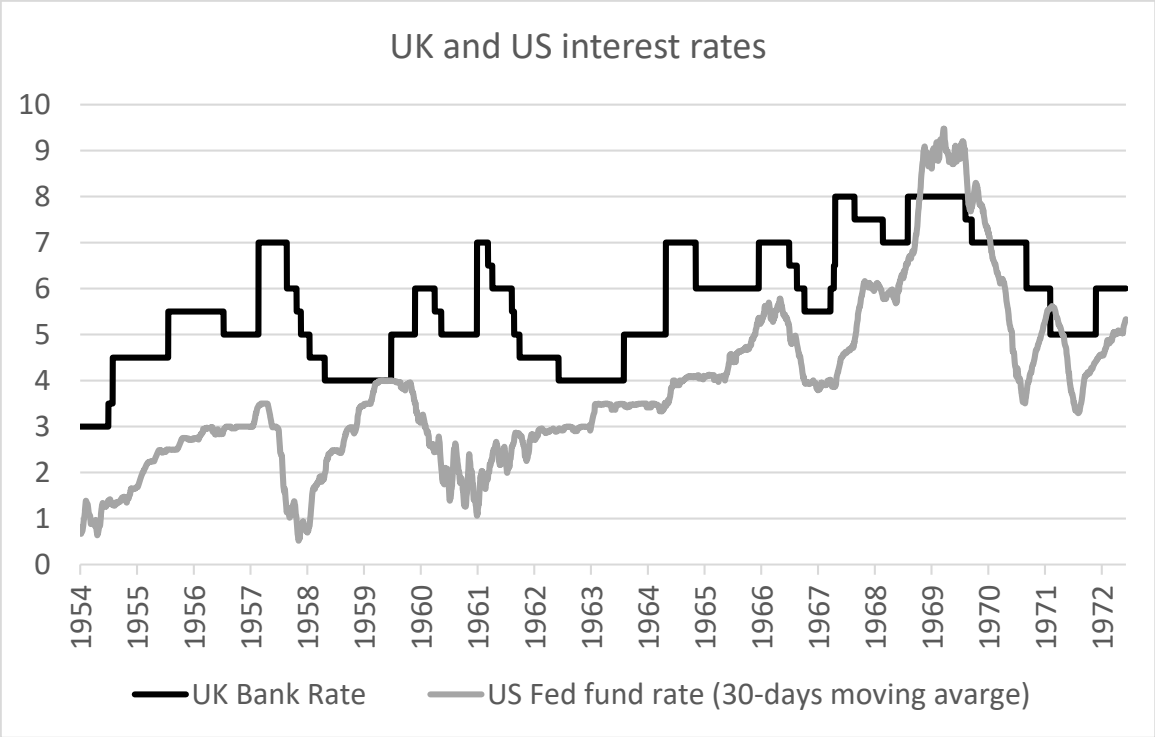

Figure 3 UK and US interest rates

Source: Moving average my calculation. Effective Federal Funds Rate, percentage, daily, not seasonally adjusted (DDF), computed as a 30-day moving average, FRED; Bank of England Bank Rate, Bank of England.

The UK, like most governments, tried to 'escape' the trilemma, in order to ensure an independent national monetary policy along with a fixed exchange rate. Sterilised intervention, international cooperation and international swap networks are all ways to try to escape the trilemma or to try to avoid capital flows, which interfere with domestic monetary conditions.

1.1.7 The Exchange Equalisation Account

The Exchange Equalisation Account (EEA) is central to understanding the detail of foreign exchange management by the Bank of England and the Treasury. There is a limited literature focused on the activities of the EEA. The following paragraphs review this literature and give a brief history of the EEA since its creation. I draw heavily on the work of Susan Howson, the first economic historian to explore its workings systematically.

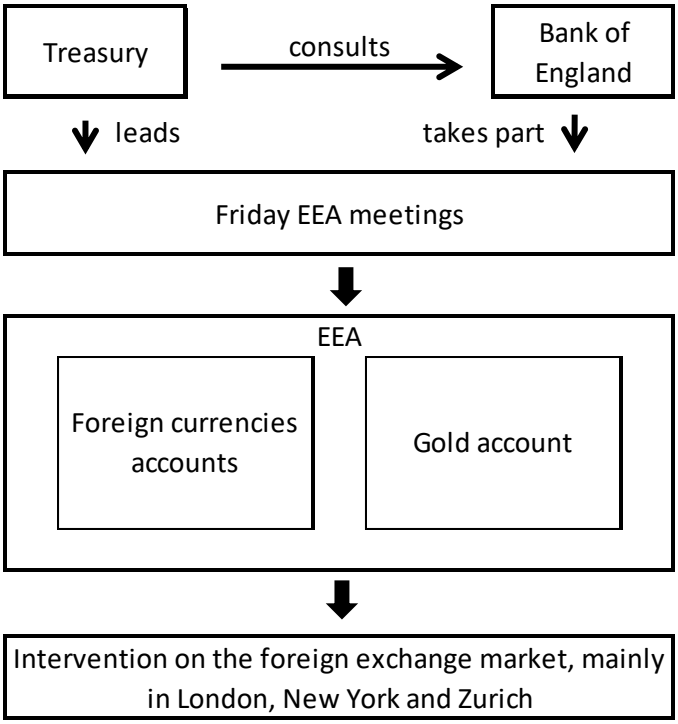

Figure 4 Schematic structure of the EEA

Source: Based on Howson, *Sterling's Managed Float* and the structure of the 'EEA ledgers', London, Bank of England archives 2A141/4 to 2A141/17.

The EEA was established in 1932 after Britain left the gold standard to manage the exchange rate. Its main purpose was to manage the floating pound from 1932 to 1939 after the sterling float of 1931.[68] The first operations of the EEA were meant to prevent rapid

[68] Susan Howson, *Sterling's Managed Float: The Operations of the Exchange Equalisation Account, 1932–39* (Princeton, NJ: International Finance Section, Department of Economics, Princeton University, 1980), 15.

appreciation of the pound after the British economy recovered from the shock of leaving the gold standard.[69] The EEA was part of the Treasury, but the Bank of England was in charge of foreign market operations on its behalf. Figure 4 presents a schematic structure of the EEA. During the interwar years, the Treasury kept tight control over its operations. During the Bretton Woods period, the mandate of the Bank was simply to keep the exchange rate within the agreed IMF bands. This resulted in less involvement by the Treasury in its daily operations. As the Radcliffe Report put it, beyond its main mandate, the Bank had some room for manoeuvre when it came to daily exchange rate management; the Bank 'has discretion to operate' when the exchange rate is within the IMF limits and often intervenes 'in order to prevent violent fluctuations of the rate'.[70]

The main role of the EEA was to buy or sell currencies on the foreign exchange market in order to manage exchange rates. Most operations were done directly by the Bank in London; the New York Fed sometimes performed overnight operations in New York on behalf of the Bank. The EEA operated mainly in dollars and French francs until 1935, after which it introduced Dutch florins, Swiss francs, Belgian francs, Swedish kronors, Norwegian kroners, Canadian dollars, Argentine pesos and Indian rupees.[71] During the Bretton Woods period, most of the interventions were in dollars with some intervention in gold, French francs, Belgian francs, Deutschemarks and Canadian dollars.[72] The EEA kept important reserves in gold, which were converted into dollars when needed. The goal was to ensure 'that exchange transactions within its territories do not differ by more than 1 per cent on either side of the parities declared to the [International Monetary] Fund'.[73]

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[69] Leonard Waight, *The History and Mechanism of the Exchange Equalisation Account* (Cambridge: Cambridge University Press, 1939), 8.
[70] *Radcliffe Report*, para. 326.
[71] Howson, *Sterling's Managed Float*, 36.
[72] See the detailed breakdown in the introduction, Figure 5.
[73] *Radcliffe Report*, p. 111. This can also be found for example in Capie, *The Bank of England*, 59.

The creation of the EEA was a result of the Bank's limited room for manoeuvre in its foreign exchange operations. As the Bank had to make its accounts public, it was decided to create a separate account for intervention. The EEA was able to act without having to disclose any reserve figures which the public could have used to deduce intervention activity.[74] Therefore, the EEA was created as a loan from the Treasury to the Bank, and any unused funds from this loan would then be lent back to the Treasury in the form of Treasury bills.[75] This allowed for sterilisation. In the interwar years sterilisation was not total but 'substantial', as Howson argues.[76] There were two limitations to sterilisation, as we shall see:[77] first, lending back excessive reserves to the Treasury was not automatic: and second, it depended on how the banking system reacted.

If the Bank bought £10 million with the equivalent amount in dollars in order to defend the sterling exchange rate, these £10 million were withdrawn from the economy. This reduced the money in circulation and so could have an effect on interest rates. However, if the Bank then took these £10 million to buy Treasury bills, the money would have little effect on the amount of money in circulation or on interest rates. This was built into the mechanism of the EEA as it was a loan from the Treasury as we have seen. Without this purchase, the Bank would have simply written off the £10 million, thereby deflating the economy, not least because a significant amount of Treasury bills were issued 'on tap', or constantly, and not only periodically. Thanks to the initial loan, the EEA had an inherent sterilisation mechanism. According to the Radcliffe Report, the Bank only kept 'a working balance' in sterling and

[74] Howson, *Sterling's Managed Float*, 7. for the details of how intervention could be deduced by the public.
[75] Treasury bills are short-term bills issued by the Treasury. They were either issued 'tap' or 'tender'. Tap bills are tendered constantly by certain government departments. Tender bills are tendered weekly for the best price. Waight, *The History and Mechanism*, 40.
[75] Howson, *Sterling's Managed Float*, 7. for the details of how intervention could be deduced by the public.

[76] Howson, *Sterling's Managed Float*, 9–10.
[77] A detailed account of how an operation by the EEA would affect money supply can be found in Waight, *The History and Mechanism*, 40–43.and is summarised in Howson, *Sterling's Managed Float*, 9–10.

invested the rest 'entirely in "tap" Treasury Bills'.[78] Even if the purchase of Treasury bills was not simultaneous, it was close to perfect as tap Treasury bills were constantly available to the EEA.

The other channel for sterilisation has to do with the banking system and the provenance of the money inflow.[79] The Bank of England's *Quarterly Bulleti*n explains the mechanism: 'An inflow of gold or foreign exchange added both to the cash reserves of the banks and to their deposits – enabling them to increase their domestic lending – unless offset by open market operations carried out by the authorities.'[80] Therefore, a foreign gold or dollar inflow would potentially increase the money available. And when the EEA acted as a counterpart of a foreign gold or dollar inflow, its operation would increase the reserves and deposits in British banks. Keeping a constant deposit ratio (around 10 per cent at the time), banks would be able to lend more after capital inflows from abroad.[81]

Take the example of a French investor wanting to buy sterling in London in order to avoid a possible French franc devaluation. Depending on the market for French francs in London, the EEA might have ended up buying these French francs. If the French investor kept this money in an account with a London bank, the EEA transaction would have the effect of increasing the British money base. To offset this inflow of capital for which the EEA had paid, it needed to undertake open market operations, selling Treasury bills on the money market.

During the Second World War, the EEA was the principal market-maker and any legal foreign exchange transactions went through the EEA. Commercial banks were simply offering foreign exchange on behalf of the EEA within narrow official rates. At that point, foreign exchange-broking firms ceased activity and some of their employees were engaged by the Bank

[78] *Radcliffe Report*, para. 325.
[79] Howson, *Sterling's Managed Float*; Waight, *The History and Mechanism*.
[80] Bank of England, 'The Exchange Equalisation Account: Its Origins and Development', *Bank of England Quarterly Bulletin*, December 1968, 379.
[81] This is explained in greater detail in Waight, *The History and Mechanism*.

of England to work on exchange control management.[82] This means that until 1947 there was no free foreign exchange market. 1947 marked the first attempt to establish convertibility, which was a failure and reversed after only one month.[83] Thereafter, the market remained controlled until December 1951 when the foreign exchange market was reopened (see Chapter I). January 1952 marked the beginning of the EEA's foreign exchange intervention activity, when it started to buy and sell dollars to influence the price of sterling. Until then, the EEA was simply controlling the market by making prices through the commercial banks. 1952 was also the year when the Bank started recording daily internal reports with intervention amounts.

Apart from the seminal contribution by Howson detailing the early years of the EEA, there are few studies on this topic and most of these focus on the interwar years. In 1933, the economist Alzada Comstock described the EEA as 'Great Britain's little-known but successful experiment'.[84] Similar studies could be found at the time and highlighted the interest in this new tool which was unknown to most economists and surrounded by secrecy. Noel Hall and Leonard Waight provide two early attempts to understand the EEA, but their approach is not based on archival data. Howson presents the mechanisms behind the EEA and offers an interpretation of the EEA's actions based on the Treasury's archival records.[85] She examines how the exchange rate targets decided by the Treasury were implemented with EEA intervention. Between 1932 and 1939, the targets changed several times, from $3.40/£ in 1932 to $4.95/£ in 1936. This flexibility allowed the EEA and the Bank to amass substantial reserves. However, for the Bretton Woods period, the literature is limited to brief references to the EEA in histories of the Bank or of monetary policy.

[82] *Bank of England Quarterly Bulletin*, 'The UK Exchange Controls', 250.
[83] This is explored in detail in Chapter I. See also Schenk, *The Decline of Sterling*, 59–63.
[84] Alzada Comstock, 'The British Exchange Equalization Account', *The American Economic Review* 23, 4 (1933), 608–21.
[85] Howson, *Sterling's Managed Float*.

US and French equivalents of the EEA have received more attention, with Anna Schwartz presenting a review of the Exchange Stabilisation Fund and an extensive review of US intervention by Bordo and co-authors.[86] Olivier Accominotti relies on data from the *Fond de Stabilisation des Changes* to justify the Bank of France's behaviour during the interwar period.[87] The EEA has, however, not benefited from similar accounts, and one of the aims of this dissertation is to fill this gap.

1.2 Data contribution

This dissertation presents a substantial amount of new and previously unexploited data on daily intervention activity, central bank currency reserves and exchange rates. Table 1 summarises the major data contributions as well as their archival sources. For the most part, these data have not previously been published and are presented in this dissertation for the first time. They add to our understanding of the workings of the Bank of England during the Bretton Woods period. Overall, I present 90,000 daily observations which help a detailed analysis of the Bank's operations.

1.2.1 Dealers' reports

The dealers' reports offer daily records of the cashier's department activities in the gold and foreign exchange markets.[88] The reports start in 1952 and end in 1999. They register all the Bank's foreign exchange operations, divided into market operations and customer operations. Market operations are the Bank of England's foreign exchange intervention figures and customer operations are undertaken on behalf of third parties (for example, if the Ministry of Defence wanted to buy arms in a foreign currency).

[86] Bordo, Humpage and Schwartz, *Strained Relations*.
[87] Olivier Accominotti, 'The Sterling Trap: Foreign Reserves Management at the Bank of France, 1928–1936', *European Review of Economic History* 13, 3 (2009), 349–376.
[88] 'Dealers' Reports', London, Archives of the Bank of England, C8.

	Data	Timeframe	Source	Frequency	Number of observations
Intervention	Bank of England dollar market interventions (including forward, overnight and transferable)	1952-70	BoE dealer's reports (C8)	Daily	7500
	Bank of England and Gold Pool gold intervention	1954-68	BoE dealer's reports (C8)	Daily	2984
Gold prices	London gold prices	1960-68	BoE dealer's reports (C8)	Daily	2028
	Zurich gold prices	1960-70	Swiss National Bank, 'Goldkurse' (9.6/9121)	Daily	2903
	Paris gold prices	1960-70	Bank of France, 'Cours pratiqués sur le marché libre de l'or' (1377200101/21-25)	Daily	2470
Sterling exchange rates	Transferable sterling exchange rate	1953-58	BoE dealer's reports (C8)	Daily	1241
	Swiss offshore bank note rate	1946-71	Swiss National Bank, 'Devisenheft' (9.6/9125)	Daily	14660
	Swiss offshore exchange rate	1949-71	Swiss National Bank, 'Devisenheft' (9.6/9125)	Daily	12708
	Sterling spot, one-month and three-month exchange rates	1945-71	Accominotti et al., 2017	Daily	24344
British reserves	EEA gold, dollar, French francs and Canadian dollars	1945-71	BoE EEA ledgers (2A141/1-17)	Monthly	1250
	EEA gold and dollar holdings	1947-71	BoE EEA ledgers (2A141/1-17)	Daily	17438
	Quarterly Bulletin reported reserve figures	1962-71	BoE, *Quarterly Bulletins*	Quarterly	240
US gold window	US gold window customer data	1965-68	BIS, Gold consumption and production (BISA_7.18 (12) DEA 20) and Bank of France, minutes of the Gold experts meeting (467200501-74)	Quarterly	392

Table 1 – data contribution and sources

Not only do the dealers' reports provide a summary of the Bank's daily operations, they also offer the dealers' perspective on crises. These were summarised in a daily market comment which was used internally to inform the management of the Bank. These reports have been used by Michael Bordo and co-authors to assess Bank of England intervention from 1964 to 1967. Similarly, Adam Klug and Gregor Smith rely on the dealers' reports to interpret the Suez crisis.[89] However, these two studies reconstruct the Bank of England reserve levels only as they did not have access to the EEA ledgers. In contrast to previous studies, this dissertation exploits reserve data from the ledgers as well as the intervention data from the reports. This paints a more nuanced picture of the capacity of the Bank of England to respond to a speculative attack, showing not only its operations but also its remaining reserves. I also provide the full dataset from 1952 to 1972 and offer an overview of the whole Bretton Woods period, whereas the other two studies offer data for 1956 and 1964–67 only.

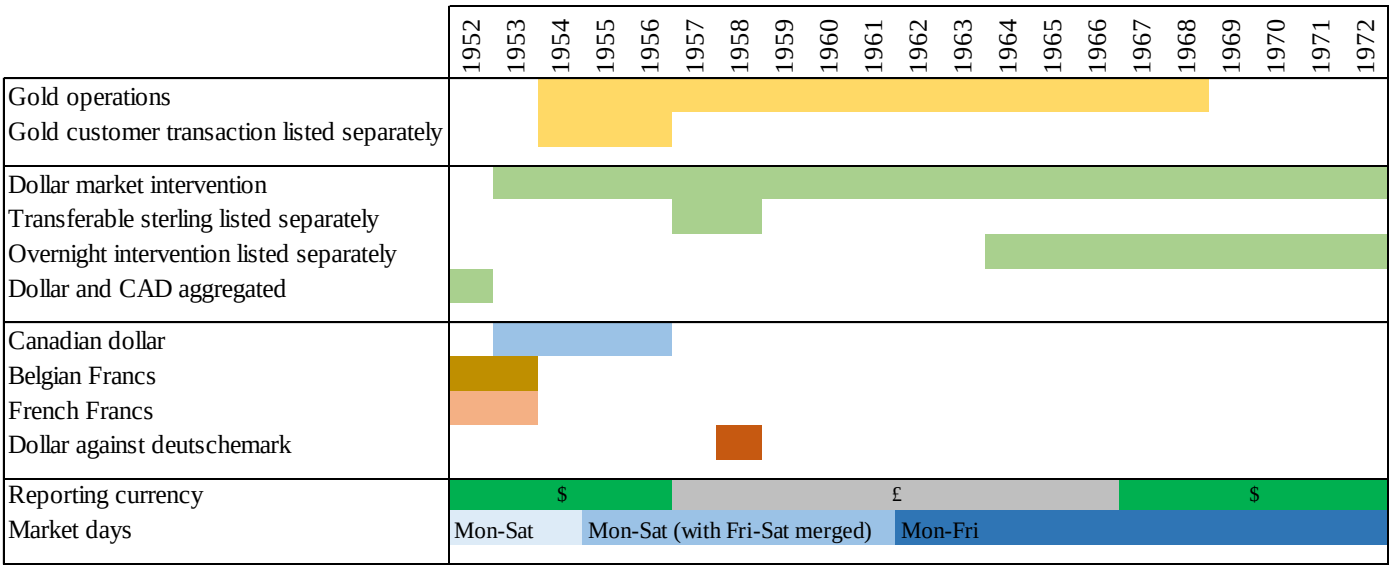

Figure 5 Summary of data reported in the dealers' reports

Source: Bank of England's dealers' reports, 1952–72.

[89] Adam Klug and Gregor W. Smith, 'Suez and Sterling, 1956', *Explorations in Economic History* 36, 3 (July 1999), 181–203.

Figure 5 provides greater detail on how the dealers' reports were structured. Most of the intervention activity concentrates on the US dollar and mainly gives an aggregate. Sometimes though overnight intervention by the Federal Reserve in New York or New York banks on behalf of the Bank of England is reported separately. In the early years of the Bretton Woods period, the Bank intervened in French francs and Canadian dollars. But, as Figure 6 displays, most of the Bank's foreign reserves were held in US dollars, the currency in which operations were reported from 1952 to 1956 and 1967 to 1972. From 1956 to 1967, the dealers reported all operations in sterling. For presentational purposes, throughout this dissertation I convert all operations from the reports into US dollars at the official parity ($4.03, $2.80 or $2.40 per sterling).

1.2.2 Bank of England reserve data

The EEA ledgers at the Bank of England record reserve data.[90] For the Bretton Woods period, these daily ledgers have not been used in the prior literature in any detail. They contain important information on the state of Britain's foreign exchange reserves at daily frequencies which were unknown to contemporaries.[91] It reveals manipulation of the reserves position; this is known as window dressing. Daily data make it possible to track the extent of daily window dressing operations, as explained in Chapter III.

As the Bank was executing orders on behalf of the Treasury, it kept ledgers on all EEA activity. The daily data span October 1939 to March 1971. Previous studies calculate reserve levels from proximate sources or use monthly or quarterly data;[92] they have not used EEA ledgers, which offer more accurate daily figures. Figure 6 offers a monthly overview of the

[90] 'Ledgers of the Exchange Equalisation Account', 1947–70, London, Archive of the Bank of England, 2A141/1-17.
[91] Capie presents some monthly and quarterly data on actual reserves, see Capie, *The Bank of England*, 389–93.
[92] For example Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967'; Alec Cairncross and Barry Eichengreen, *Sterling in Decline* (Oxford: Wiley-Blackwell, 1983).

EEA's largest holdings, namely gold, US dollars, Canadian dollars and French francs. It quickly becomes apparent that, throughout the period, gold and US dollars were the account's main reserves.

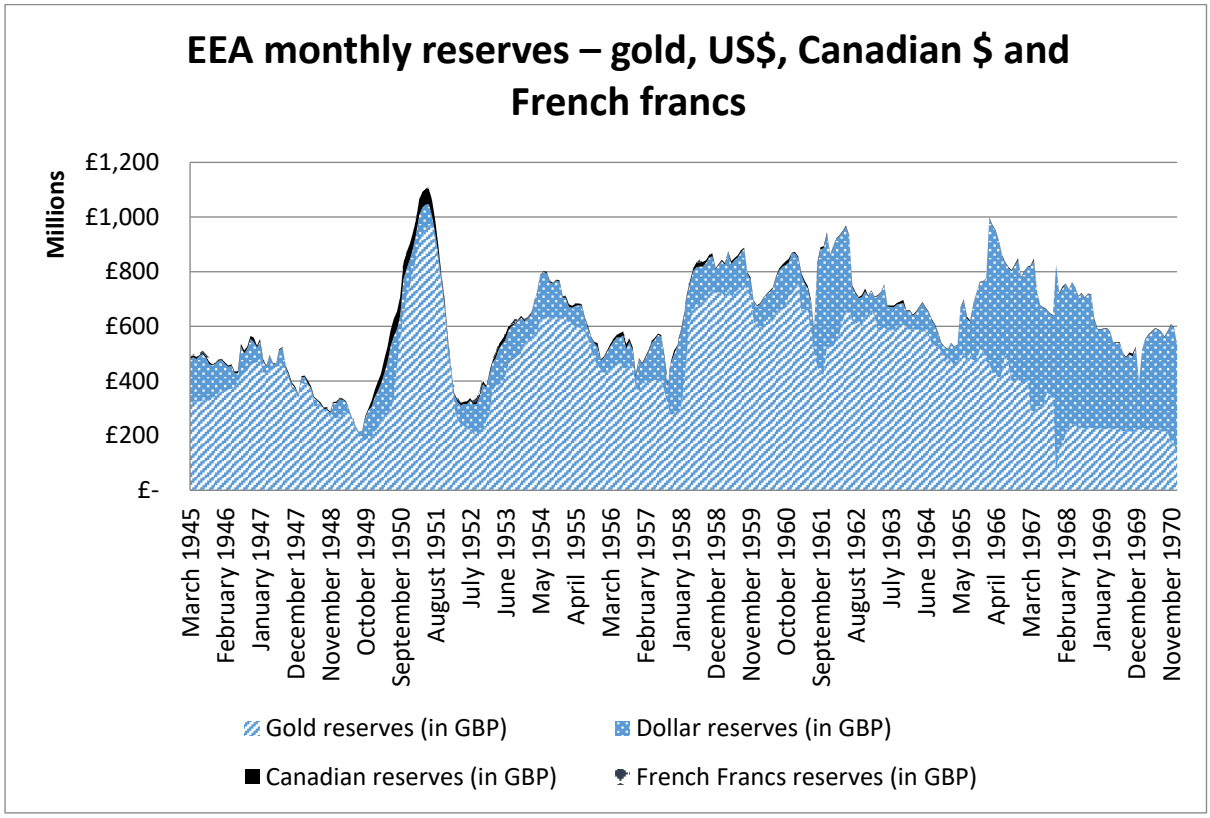

Figure 6 EEA gold, US dollars, Canadian dollars and French francs reserves

Source: 'General Ledger of the EEA', 1945–49 and 1949–52, London, Archives of the Bank of England, 2a141/6–2a141/17.

In the macroeconomic literature, central bank reserves changes are a far from a perfect proxy for market intervention. Lucio Sarno and Mark Taylor stress that movement in reserve data 'represent a very inaccurate proxy for intervention activity since monetary authorities' international reserves may change for a number of reasons different from and often not related to official intervention'.[93] In the case of the Bank of England, these reasons include the fact

[93] Lucio Sarno and Mark P. Taylor, 'Official Intervention in the Foreign Exchange Market: Is it Effective and, if so, How Does it Work?', *Journal of Economic Literature* 39, 3 (2001), 851.

that the EEA was not only used for intervention but was also an account for many customer transactions. For example, say the Bank of Italy asked the Bank of England to act as its agent and buy $100 million on its behalf to be stored at the Bank. Before or after the transaction, the Bank of Italy would transfer dollars or sterling to the EEA. Within the course of a few days, the EEA would proceed to execute the $100 million gold purchase. It would spread the purchase to avoid moving the market. This means that such daily movements in the EEA accounts of both the US dollar and gold will only reflect customer business but not the intervention. John Fforde stresses that estimating changes in EEA reserves was not a good proxy for market intervention. He argues that 'foreign exchange ordered by Bank customers, mainly central banks and HMG, was usually supplied directly by the EEA and not put through the market.'[94] This dissertation resolves this problem by collecting and separately analysing the *customer operations* and the *market operations* data.

1.2.3 Exchange rate data

I use six exchange rates at daily frequencies: transferable sterling, Swiss offshore bank note rates, Swiss offshore exchange rates, London spot rates and London one- and three-month forward rates. As the spot rate was managed by Bank of England intervention, these alternative exchange rates offer more information on the valuation of sterling.

The transferable sterling rate existed from 1953 to 1958 and was recorded by the Bank's dealers. The dealers were monitoring these exchanges in both New York and Zurich. In addition to transferable sterling rates, I collected Swiss exchange rates from Zurich. In 1954, Zurich was the biggest offshore market for sterling before convertibility, placing it ahead of New York in terms of volume, according to the Bank's estimates.[95] However, data available at

[94] John Fforde, *The Bank of England and Public Policy, 1941–1958* (Cambridge: Cambridge University Press, 1992), 416.
[95] 'Exchange control transferable sterling', memorandum, London, Archives of the Bank of England, C43/132.

the Swiss National Bank do not present the direct sterling/dollar exchange rate, but only Swiss franc/sterling and Swiss franc/dollar rates. All sterling/dollar exchange rates from Switzerland used here are therefore cross-rates. Two rates have been collected at the Swiss National Bank: an official exchange rate and an exchange rate offered for bank notes at the counter of Swiss commercial banks in Zurich. These rates have been recorded at a daily frequency by the Swiss National Bank, which collected the rates from commercial banks such as Credit Suisse.[96] These data have not been published before and are used for the first time in this dissertation.

Official London exchange rates come from *The Financial Times* (see Accominotti et al.) and from the *Manchester Guardian* (collected by Global Financial Data).[97] Accominotti et al. offer the advantage of giving both bid and ask quotes. This dataset also presents one- and three-month forward exchange rate data. The *Manchester Guardian* on the other hand does not offer bid–ask prices but only a mid-quote.

1.3 Timeframe of this dissertation

Scholars define the Bretton Woods system differently according to how they define the system: either the monetary system in place from the 1944 Bretton Woods conference to the Nixon shock in 1971 or 1973, when G-10 countries decided to float their currencies against the dollar. Bordo and Eichengreen have argued that the introduction of convertibility in December 1958 marked the beginning of the 'real' Bretton Woods period, because it finally worked with relatively free capital flows as intended by its creators.[98] In that sense, the system can be narrowly defined from the introduction of convertibility in Europe in 1958 to 1968, when the gold market was split into a two-tier market.[99] McKinnon, however, argues that 'economists

[96] 'Devisenheft' (Currency books), 1949–1975, Zurich, Archives of the Swiss National Bank, 9.6/9125.
[97] Olivier Accominotti et al., 'Currency Regimes and the Carry Trade', *Working Paper*, 2017.
[98] The term 'real Bretton Woods system' is chosen for example by Bordo and Eichengreen, *A Retrospective*, 37.
[99] This is the view expressed in ibid.

refer to the postwar monetary order based on pegged par values for exchange rates as the "Bretton Woods system"' [100] and the 'collapse of the commitment to fixed par values in 1971–73' is usually referred to as 'the collapse of Bretton Woods'. [101]

The timeframe for this dissertation starts with the 1944 Bretton Woods conference and ends with the *de facto* end of the system in 1971 with the Nixon shock, which ended the convertibility of dollars into gold. This is in line with Daunton who argues that the Bretton Woods conference set 'the parameters for British economic policy for the next quarter of a century, until the collapse of the monetary regime in the aftermath of Richard Nixon's decision of 15 August 1971 to suspend the convertibility of the dollar into gold'.[102] I chose 1971 as my end date because it marked the end of the broadly defined Gold Standard era. At this point, for the first time since the classical gold standard, gold was no longer at the centre of the international monetary system.[103]

1.4 Summary

The contribution of this dissertation is to reassess the role of sterling in the life and death of the Bretton Woods system. The currency played a more important role than previously asserted. This is revisited here with new data and archives to show how from the onset of the Bretton Woods system to 1971 sterling played a part in the stability of the international monetary system. Sterling and not the French government, as previously argued, was at the heart of the run on gold, which led to the collapse of the Gold Pool and eventually the Bretton Woods system. Sterling also played a role in the stability of the global economy from 1964 when it

[100] Ronald I. McKinnon, 'Bretton Woods, the Marshall Plan, and the Postwar Dollar Standard', in *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, ed. Michael Bordo and Barry Eichengreen (Chicago: University of Chicago Press, 1993), 600.
[101] Ibid.
[102] Daunton, 'Presidential Address', 2.
[103] Even if there were episodes, such as the wars, 1919–25 or post-1931 when Britain was not on the gold standard. The frame of reference during these episodes, however, was still to aim for a fixed exchange rate. After 1971, floating became a viable option in the mind of policy-makers.

became apparent to investors that a run on sterling would trigger a run on the dollar. This has not been argued in previous literature. Another contribution is to demonstrate cooperation between the Fed and the Bank of England, starting in the late 1950s. Thanks to access to previously unavailable telephone records from the Fed archive I reveal how this process took time to unfold and how initially the Bank was reluctant to cooperate with the US. This changed in the early 1960s when swap networks become a key tool in the management of sterling.

Chapter I

TYING THE KNOT OF THE INTERNATIONAL MONETARY SYSTEM (1947-1958)

‘We still have $23 billion in gold bars and even if present selling continues I see no danger of our [reserves] falling to a level where we might be scared.’

L.W. Knoke, New York Federal Reserve, phone conversation with George Bolton, Bank of England, 8 December 1950

‘In a long-run view, most economists think it wasteful to produce gold destined only to be buried in our monetary hoards.’

Emile Despres, Albert G. Hart, Milton Friedman, Paul A. Samuelson and Donald H. Wallace, ‘The Problem of Economic Instability’, *The American Economic Review*, 40 (1950), 530

‘The London gold market still represented a time bomb resting at the very foundation of the Bretton Woods system.’

Charles Coombs, Vice President of the Federal Reserve Bank of New York, in Charles A. Coombs, T*he Arena of International Finance* (New York: Wiley, 1976), 68

This first chapter demonstrates how the links between the pound sterling and the international monetary system were forged. Sterling’s stability had been tested during the 1947 convertibility crisis when it became apparent that sterling was no longer the leading global currency.[104] Two years later, in 1949, the currency was devalued, along with 19 other currencies. The resulting *de facto* dollar revaluation led to an appreciation of the dollar against gold, yet the official price of gold remained fixed so that the revalued dollar led to the progressive depletion of US gold

[104] Current literature has established that this was already the case in the interwar years as the dollar had overtaken sterling as the leading international currency in 1929, but testimonies from contemporaries show that sterling was still regarded as an important currency before the war. On sterling leadership, see Livia Chiţu, Barry Eichengreen and Arnaud Mehl, ‘When Did the Dollar Overtake Sterling as the Leading International Currency? Evidence from the Bond Markets’, *Journal of Development Economics*, Special Issue: Imbalances in Economic Development, 111 (November 2014), 225–45.

reserves. Observers like Robert Triffin thought it would lead to the collapse of the Bretton Woods system;[105] others believed it could survive without strong gold backing.[106]

After the Second World War, Britain was still a heavily regulated economy. In 1939, the country introduced exchange controls which were not lifted in 1945. In 1947, the Exchange Control Act formalised capital controls and divided the world into four sterling regions, which are discussed in this chapter. The state took a major role in everything, from imports to production. This applied to finance, where capital flows were controlled by the state. The Bank of England oversaw the exchange rate and only authorised banks were allowed to deal in foreign currencies, within narrow official bands. The US hoped that removing these controls would be a swift process as officials there were keen to see markets in Europe develop. However, the process took much longer than policy-makers anticipated.

The British government reopened the currency market in December 1951 and the gold market in March 1954. In this way sterling, now the second most important international currency, re-engaged with the global financial markets. However, with extensive restrictions on capital flows still in place, British gold and currency markets did not have the sort of influence that could trigger a global financial crisis. The Bank of England now started intervening with small amounts in the gold market. This was still a national responsibility. Soon, however, this became an international question as the price of gold was of fundamental importance to the Bretton Woods system. And the US progressively became keener to maintain sterling-dollar parity as this would avoid a run on sterling, which in turn would trigger a run on the other international currency, the dollar.

This chapter is divided into five sections covering sterling's slow integration into the world economy through the liberalisation of the currency and capital markets. The progressive

[105] Robert Triffin, *The Evolution of the International Monetary System: Historical Reappraisal and Future Perspectives* (Princeton, NJ: International Finance Section, Department of Economics, Princeton University, 1964).
[106] Emile Despres, Charles Poor Kindleberger and Walter S. Salant, *The Dollar and World Liquidity: A Minority View* (Washington, DC: Brookings Institution, 1966).

linking of Britain to global finance is analysed, starting with the 1947 convertibility crisis, the 1949 devaluation, the reopening of the foreign exchange market in 1951 and the intervention policies of the Bank of England, which Charles Coombs, vice president of the New York Federal Reserve, called 'a time bomb resting at the very foundation of the Bretton Woods system'.[107]

2.1 Sterling's postwar role and lessons from the 1947 convertibility crisis

Between 1948 and 1952, Europe was flooded with $13 billion in grants and loans from the United States.[108] Britain was the biggest recipient under the Marshall Plan (or European Reconstruction Plan, ERP). A key objective was to encourage convertibility to facilitate trade within Europe and with the United States. Trade was complicated after the war as most countries had capital controls in place and non-convertible currencies.[109] The restoration of convertibility in 1947 led to a crisis because the US had forced the UK to rush to open to global markets and because the British government was unprepared for this. It lasted as long as the government was able to use the Anglo-American loan to defend the pound. However, convertibility ended as soon as it became clear that the loan proceeds would be exhausted much faster than expected. I show that, in consequence, the Bank started to use its own gold reserves and the UK chose to cease convertibility.

Convertibility during the Bretton Woods period is defined as 'the freedom for individuals to engage in current account transactions without being subject to exchange controls'.[110] Convertibility concerned only current account transactions and not capital account

[107] Coombs, *The Arena*, 68.
[108] Bordo, 'A Historical Overview', 42.
[109] Ibid., 38.
[110] Other periods had different definitions of convertibility: 'Under the classical gold standard, *convertibility* referred to the ability of a private individual freely to convert a unit of any national currency into gold at the

transactions. Convertibility meant that people could trade freely, transfer remittances and repatriate returns from existing investments. It did not extend to capital account convertibility, which would allow foreign investment in securities or property, for example. Immediately after the war, the economy was regulated and imports were limited by quotas and licences. The amount individuals could take was limited to £100 when travelling abroad.[111]

Britain attempted to restore current account convertibility at the insistence of the US. However, this had to be abandoned in a very public way after a mere 37 days. Policy-makers, markets and the press drew two conclusions from this: first, sterling was no longer the pre-eminent currency it had been before the war; second, re-establishing an international monetary system with free capital flows would take longer than anticipated a few years earlier at the Bretton Woods conference.

This chapter traces the slow unfolding of a new international monetary system up to the introduction of convertibility in 1958 (current *and* capital account convertibility this time). The international monetary system was characterised by fixed exchange rates, limited capital mobility and relatively uncoordinated domestic monetary policies. The next section looks at the major problem confronting any move to convertibility, namely sterling balances.

2.1.1 The sterling overhang problem

Contemporary debates on the question of sterling focused on the issue of the 'sterling overhang', 'sterling liabilities' or 'sterling balances'. These balances were in Britain but held by foreigners living in former colonies and overseas territories, and they could not be converted

official fixed price. A suspension of convertibility meant that the exchange rate between gold and a national currency became flexible, but the individual could still freely transact in either asset' (Triffin, 1960, 22). 'On the eve of the Second World, *convertibility* referred to the ability of a private individual freely to make and receive payments in international transaction in terms of the currency of another country' (ibid., 38–9).

[111] Bank of England, 'The U.K. Exchange Control: A Short History', *Bank of England Quarterly Bulletin*, September 1967, 252.

into dollars because of regulations.[112] And if all the sterling holders abroad were to try to convert these balances into dollars, there was a risk of a run on sterling. In 1947, the Bank for International Settlements (BIS) warned: 'The balances and other short-term sterling assets which accumulated in London on overseas account during the war constitute a major factor in the United Kingdom's external payments problem.'[113] Catherine Schenk argues that 'Britain's accumulation of enormous sterling liabilities to the Commonwealth and colonies profoundly affected the post-war configuration of the sterling area system.'[114] Sterling balances were a major issue. If sterling capital flows were to be liberalised, Britain's creditor central banks could request their sterling balance to be converted into dollars at the Bank of England. This would quickly deplete the Bank's reserves and force the country into devaluation, without US loans. Therefore, the history of sterling during the Bretton Woods period is a story of slowly and progressively phasing out sterling balances.

The amount of sterling in circulation tripled between 1938 and 1947 whereas GNP only doubled.[115] At the same time, private and public holdings of gold and dollars in the UK halved. Eichengreen argues that in these circumstances 'the decision to restore convertibility in 1947 was the height of recklessness'.[116] Paul Einzig, a currency expert and prolific author at the time, also claims that forcing Britain to 'to restore the convertibility of sterling involved grave risks' as it would trigger a run on the pound as long as Britain maintained a large trade deficit.[117] Freeing capital flows would lead to an outflow of capital from Britain that would force it to use

[112] Catherine Schenk, *Britain and the Sterling Area: From Devaluation to Convertibility in the 1950s* (London and New York: Routledge, 1994), 20–7.
[113] BIS, Annual Report, 1947 (1 April 1946-31 March 1947), 16 June 1947, (Basle: BIS).
[114] Schenk, *Britain and the Sterling Area: From Devaluation to Convertibility in the 1950s*, 17.
[115] Barry Eichengreen, *Globalizing Capital: A History of the International Monetary System*, second edition (Princeton, NJ: Princeton University Press, 2008), 100.
[116] Ibid., 100–1.
[117] Paul Einzig, 'The Case against Convertibility', *The Commercial & Financial Chronicle*, 2 October 1947, 158.

all its reserves in defence of sterling parity, especially if sterling creditors were to convert their reserves into dollars.

Echoing Eichengreen, Schenk wrote, '[T]he amount of national currency in overseas foreign exchange reserves led to doubts about the ability of the issuing country to sustain their external position and seemed to threaten the stability of the international monetary system.'[118] The sterling balances were posing a systemic risk to the Bretton Woods system and participants in this new regime needed to unite if the international monetary system was to survive. The risk Britain posed explains, in part at least, the lenient attitude towards Britain and the numerous lines of credit opened to the Bank of England.

2.1.2 The Exchange Control Act 1947 and the different sterling areas

The Emergency Powers (Defence) Act 1939 introduced the legal basis for exchange control during the war. At the end of the war, the 1947 Exchange Control Act continued this policy of controls as sterling was too weak to be exposed to international capital markets and the UK had amassed an onerous war debt. The responsibility for exchange control was held by the Treasury, which delegated its management to the Bank of England. In turn, the Bank entrusted commercial banks with some of the day-to-day management of exchange controls. For UK residents, the Exchange Control Act stipulated that 'no person, other than an authorised dealer' was allowed to 'buy or borrow' or 'sell or lend any gold or foreign currency'.[119] Authorised dealers were UK banks, which were allowed to deal only with customers holding a licence to

[118] Barry Eichengreen, 'Sterling's Past, Dollar's Future: Historical Perspectives on Reserve Currency Competition', working paper (National Bureau of Economic Research, May 2005); Catherine Schenk, *The Decline of Sterling: Managing the Retreat of an International Currency, 1945–1992* (Cambridge: Cambridge University Press, 2010), 12.
[119] Exchange Control Act 1947 (London: HMSO, 1947), 1.

import or export. British banks could also give limited amounts of foreign currency to people travelling abroad.[120]

The controls classified sterling into four main categories reflecting four geographic areas: the sterling area, the dollar area, the transferable-account countries and the bilateral countries. All other countries were referred to as unclassified account countries. Figure 7 is based on data from the 1948 BIS report on the different types of sterling. It gives an idea of the use of different types of sterling just after the war. More would emerge over time, but these four categories would remain in place until the introduction of convertibility in December 1958. The rationale behind the classification and the associated capital controls was 'to restrict convertibility of sterling into dollars in the context of the post-war dollar shortage and generally to conserve foreign exchange'.[121] These different types were a means to manage capital controls. Figure 7 highlights the state of the British Empire in 1948, with some former colonies still within the sterling area. The dollar area was mainly focused on the US; the USSR and other countries benefited from transferable sterling status; and finally, most of Europe and the European colonies benefited from bilateral status.

[120] In November 1945, an allowance for travel of £100 a year was introduced. It was withdrawn from October 1947 to May 1948, then reintroduced in 1952, when the limit was set at £25.
[121] Schenk, *Britain and the Sterling Area*, 8.

Figure 7 Different types of sterling in 1948

Source: Based on the BIS (using current borders); Schenk, *Britain and the Sterling Area*, 9.

Sterling area members all pegged their exchange rates to sterling, 'maintained a common exchange control against the rest of the world while enjoying free current and capital transactions with the UK', and kept their central bank reserves in sterling.[122] Dollar area sterling was held by 'residents of the United States, Canada, the Philippines, Liberia, and thirteen Latin American countries'.[123] These sterling reserves had the advantage of being 'convertible into dollars, with no strings attached'.[124]

The transferable-account sterling countries observed the following rules: 'Payments of sterling from one transferable sterling account to another were allowed freely, as were payments between transferable accounts and sterling area accounts. Transfers were not permitted from transferable accounts to bilateral or American accounts.'[125] The Radcliffe Report noted that transferable sterling 'transactions took place in unofficial markets at a discount on the official rate; the size of the discount at which such transactions could be effected both indicated and affected the state of overseas confidence in sterling'.[126] It played the part of a confidence barometer.

Bilateral countries, the most restricted group of countries with regard to capital controls, could transfer sterling to the sterling area only. These countries had to ask the Bank of England for 'administrative transferability' to move capital from one bilateral country to another. However, with the introduction of the European Payment Union (EPU) in 1950, 'administrative transferability for bilateral OEEC countries became virtually automatic'.[127]

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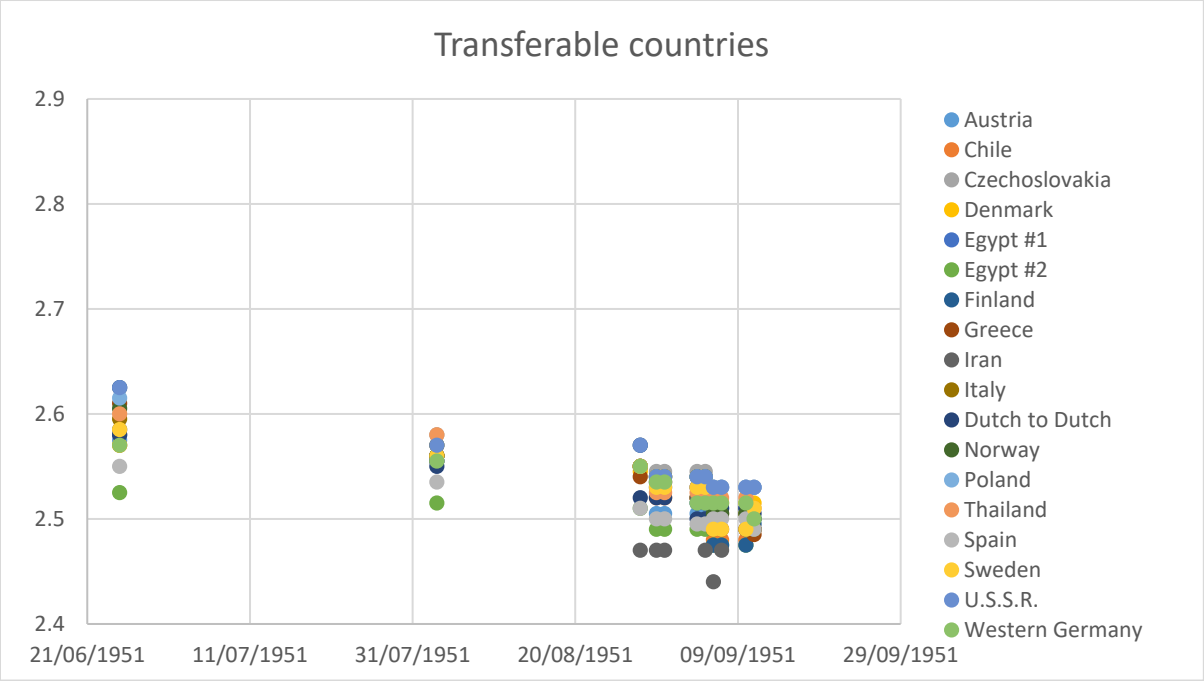
[122] Ibid.
[123] 'Consolidation of Nonresident Sterling', internal memorandum, Charles Coombs, 18 November 1953, New York, Archives of the Federal Reserve, box 110278.
[124] Ibid.
[125] Schenk, *Britain and the Sterling Area*, 9.
[126] *Radcliffe Report*, Cmnd 827 (London: HMSO, 1959), para. 327.
[127] Schenk, *Britain and the Sterling Area*, 9.

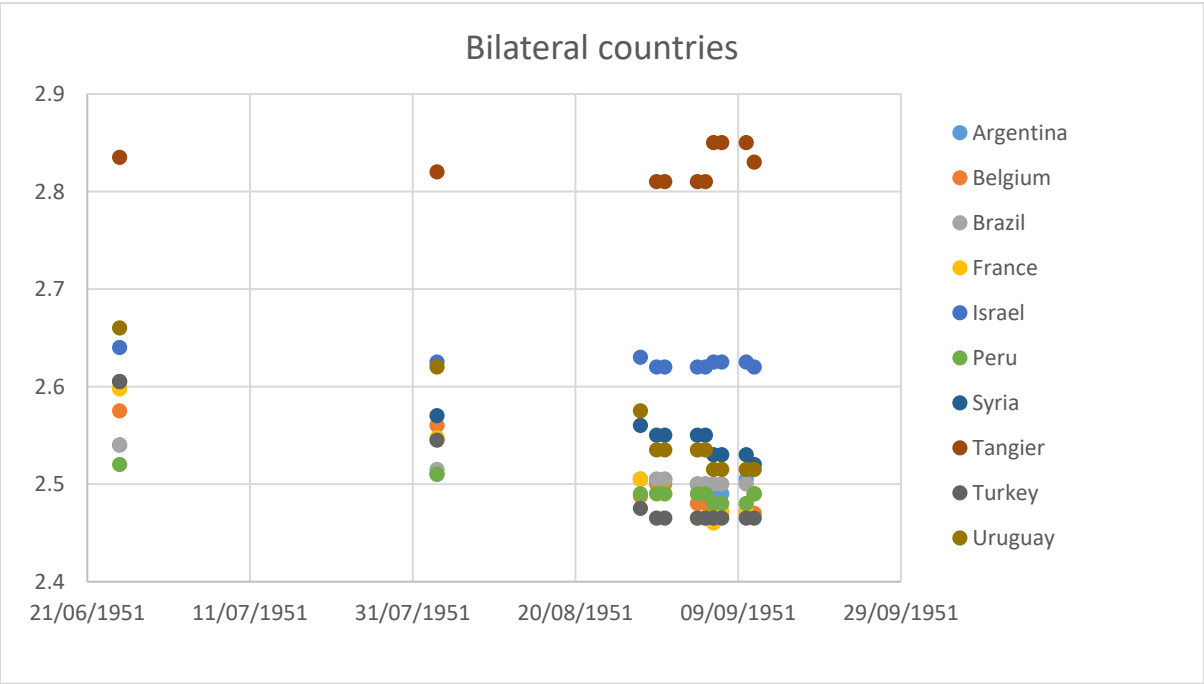
Unclassified account countries were mainly 'small and relatively unimportant countries', according to Coombs.[128] Sterling balances in these countries were generally not transferable to zones or countries.

Beyond these five main classifications, other types of sterling existed, among them security sterling and 'cheap' or 'free' sterling. Security sterling was created in 1940 when the British monetary authorities witnessed capital outflows from foreign-owned funds mainly to New York. Security sterling holders had the right to transfer these between residents of the same monetary area and this type of sterling was mainly traded at a discount.[129]

Figures 8 and 9 present the variety of exchange rates for different types of sterling. The data come from an internal memorandum at the Federal Reserve Bank of New York and show the complexity of the system over a few days. Figures 8 and 9 present 18 transferable sterling rates and 10 bilateral rates for different locations. Both Figures 8 and 9 have the same scale on the left-hand side (from $2.4 to $2.9 per sterling). Bilateral rates occupy most of the space on the panel but the difference between the 18 transferable rates is limited. The standard deviation for the bilateral countries sample is almost five times greater than for the transferable sample (0.10 for the bilateral countries; 0.02 for the transferable countries). According to these data, the ability to transfer sterling from one country to another enabled greater market integration, as can be seen by looking at the exchange rates in these two groups.

[128] Charles Coombs, Consolidation of Nonresident Sterling, internal memorandum, 18 November 1953, New York, Archives of the Federal Reserve, box 110278.
[129] John Atkin, *The Foreign Exchange Market of London: Development Since 1900* (London: Routledge, 2004), 108.





Figures 8 and 9 Sterling–dollar exchange rate at different financial centres, transferable and bilateral countries with identical scale

Source: Cheap Sterling Quotations, internal memoranda, June–September 1951, New York, Archives of the Federal Reserve, box 110278.

2.1.3 The convertibility crisis of 1947

Sterling convertibility was a condition of the Anglo-American Financial Agreement of December 1945 (Anglo-American loan in short) and this explains why the UK had to implement it despite the risks posed by the sterling balances. As the provider of the Anglo-American loan, the US wanted to rebuild Europe as a trading partner as quickly as possible. In this respect, convertibility was a key step for US policy-makers. Not only was it on the agenda of the Bretton Woods agreement, but it later became a condition of the Marshall Plan. Bradford De Long and Barry Eichengreen attribute the success of European postwar economic growth to the conditionality of the Marshall Plan as it 'pushed European political economy in a direction that left its post-World War II "mixed economies" with more "market" and less "controls" in the mix.'[130] Marshall Aid also forced European nations to liberalise their economies and work closer. Capie also noted that convertibility took place 'at a time when only the United States had the productive capacity to supply the goods that were needed to rebuild the war-ravaged economies of Western Europe'.[131] For the US, therefore, convertibility was self-serving.

The Anglo-American Financial Agreement, under which the issue of when convertibility of sterling would occur, was settled in December 1945. The agreement stipulated that current account convertibility had to be introduced one year after the effective date of the agreement, on 15 July 1946. One year later, convertibility of the pound was put in place, and, within a month, the Bank of England had lost $1 billion.[132] Schenk found that between 10 and 15 August, $175 million in reserves were lost. This led the Cabinet to consider withdrawing from convertibility while still keeping the US on their side, as not all the money promised in

[130] Barry Eichengreen and Bradford De Long, 'The Marshall Plan: History's Most Successful Structural Adjustment Program', in *Postwar Economic Reconstruction and Lessons for the East Today*, ed. Rudiger Dornbusch, Wilhelm Nolling and Richard Layard (Cambridge, MA: MIT,1993), 189–231, cover page.
[131] Capie, *The Bank of England*, 143.
[132] Bordo, 'A Historical Overview', 44.

the Anglo-American loan had been disbursed.[133] On Sunday, 17 August the Cabinet met to debate convertibility, 'a debate that moved quickly on to when and how to inform the Americans' about the intention to halt convertibility.[134] On 19 August 1947 convertibility was suspended as it was not sustainable. The 1947 experience was well anchored in the minds of British and US policy-makers. This event, along with the sterling devaluation in 1949, weakened sterling's credibility as an international currency.[135] It remained, however, the second most important reserve currency.

New data presented in Table 2 highlight daily movements on the EEA's gold and dollar accounts. During the crisis there were three significant dollar inflows: on 15 July for $150 million; on 26 July for $300 million; and on 12 August for $150 million. This $600 million represented drawings on the Anglo-American loan, which were all lost during the 37 days of the crisis. Gold reserves remained relatively unaffected until 18 August, dropping by only $18 million. On both 19 and 20 August, however, the Bank sold $50 million in gold for dollars to deal with losses arising from the crisis. Convertibility was stopped just when the Bank started losing its own gold reserves and was no longer able to fund dollar losses from the Anglo-American loan.

Table 2 on the next page shows that the EEA dollar account was technically overdrawn on 18 and 21 August 1947. The Bank could, in theory, have a negative position in sterling as it could always issue this currency, but a negative position in dollars was problematic as the Bank could not issue dollars. The ledgers were reconciled only at the end of each month, which explains why this negative position is not visible in the ledgers.

[133] Schenk, *The Decline of Sterling*, 63.
[134] Ibid.
[135] Michael D. Bordo, 'The Operation and Demise of the Bretton Woods System: 1958 to 1971', working paper (National Bureau of Economic Research, February 2017), 10.

in '000 USD	Dollars			Gold		
	Purchases	Sales	Account total	Purchases	Sales	Account total
15 July	155,557	31,271	219,352	14		1,845,031
16 July	2,658	19,296	202,713	0	11,575	1,833,457
17 July	2,445	24,610	180,548	608		1,834,065
18 July	946	73,042	108,451	11	524	1,833,551
19 July	7	3	108,456	168	18	1,833,702
20 July			108,456			1,833,702
21 July	1,078	27,376	82,158	8		1,833,710
22 July	338	12,894	69,602	22		1,833,732
23 July	2,887	15,142	57,348	9	1,077	1,832,664
24 July	97	23,510	33,935	458		1,833,122
25 July	1,302	17,661	17,576	37		1,833,160
26 July	300,001	1,010	316,566	365		1,833,525
27 July			316,566			1,833,525
28 July	2,265	49,989	268,842	3		1,833,528
29 July	1,328	6,483	263,687	187		1,833,715
30 July	3,261	17,985	248,963	55	815	1,832,955
31 July	1,539	18,300	232,202	1		1,832,956
01 August	2,087	29,096	205,193	10,544	7,194	1,836,307
02 August	0	3,092	202,101			1,836,307
03 August			202,101			1,836,307
04 August			202,101			1,836,307
05 August	1,203	59,182	144,121	1		1,836,307
06 August	432	21,032	123,522			1,836,307
07 August	1,632	22,479	102,675	503	1,439	1,835,372
08 August	800	24,832	78,642	714		1,836,085
09 August	2	1,000	77,644			1,836,085
10 August			77,644			1,836,085
11 August	3,079	69,620	11,103			1,836,085
12 August	151,144	14,979	147,268	4		1,836,089
13 August	1,104	59,919	88,453		632	1,835,457
14 August	6,238	23,725	70,966	5		1,835,462
15 August	1,423	23,338	49,052	793		1,836,255
16 August	10	1,002	48,060		9,608	1,826,647
17 August			48,060			1,826,647
18 August	669	56,866	- 8,137			1,826,647
19 August	50,817	9,045	33,634	1	50,000	1,776,648
20 August	50,576	16,396	67,814	3	51,096	1,725,556
21 August	2,071	120,290	- 50,405	100,533		1,826,090

Table 2 Exchange Equalisation Account gold and dollar accounts, July-August 1947

Source: 'Ledgers of the Exchange Equalisation Account', 1947–70, London, Archive of the Bank of England, 2A141/1-17.

Figure 10 highlights how the 1947 crisis did not trigger large gold losses for the Exchange Equalisation Account. Apart from a $100 million gold loss during the final days of convertibility, the crisis left gold reserves untouched. Unlike the 1949 devaluation, which drained gold reserves, the 1947 crisis did not affect British reserves directly and was paid for by the Anglo-American loan which was no immediate concern for British policymakers. Dollar holdings in Figure 10 persistently fluctuate, showing the market losses followed by inflows from US loans or grants.

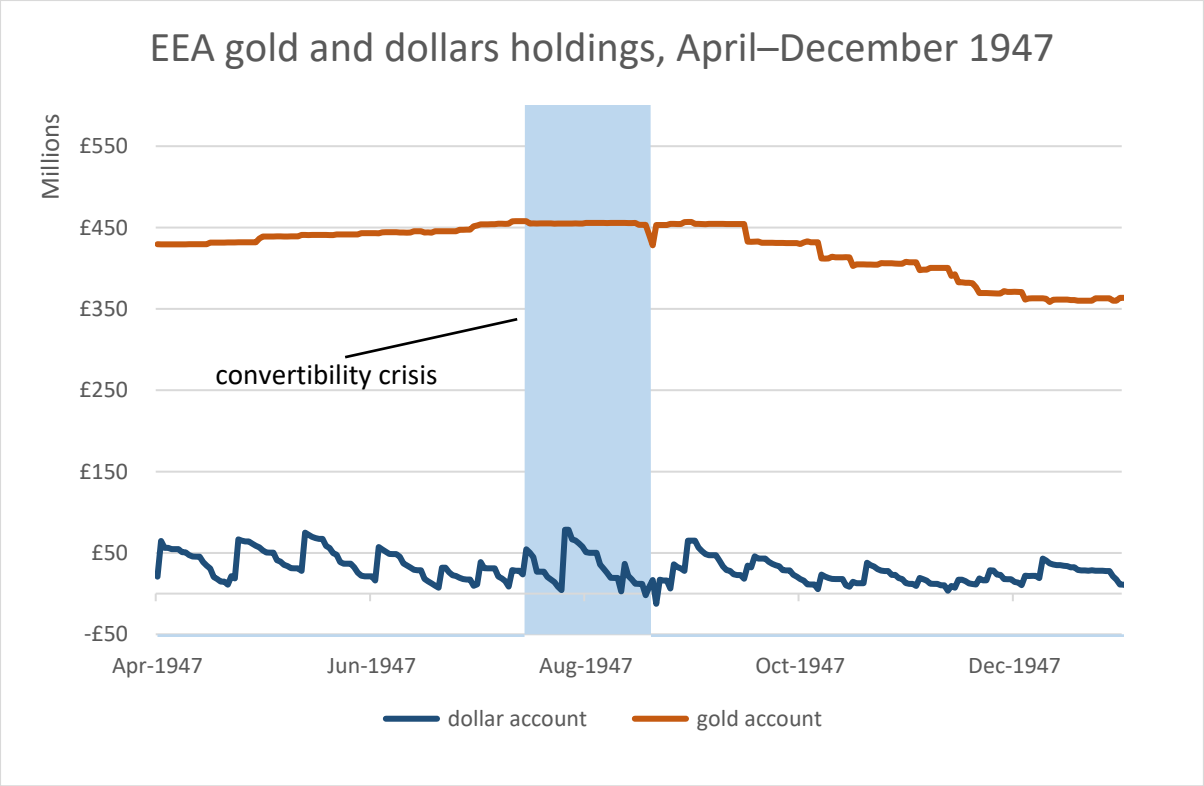


Figure 10 EEA gold and dollars holding, April-December 1947

Source: EEA ledgers.

Note: The data are the same as in Table 2 over a longer time-frame. The dollar holdings have been converted to sterling at the $4.03 per sterling parity

When looking at the *Manchester Guardian* exchange rate reported in Figure 11, there is little sign of a lasting negative impact on sterling. It looks as if the crisis only briefly

increased volatility and that the exchange rate then settled at a higher dollar rate, around the official parity of $4.03/£. The Bank of England controlled the official London spot rate and it shows no variation. The picture is different when we look at the sterling-dollar cross-rate based on the Swiss franc-dollar and Swiss franc-sterling rates (scale on the right-hand side). Here I present new data on offshore rates from Switzerland collected from the archives of the Swiss National Bank. Using the free Swiss bank note cross-rate gives a more accurate picture of the crisis. The offshore rate dropped by 1.5% from $2.9079 to $2.8629/£ and this lower rate was maintained after the actual crisis.

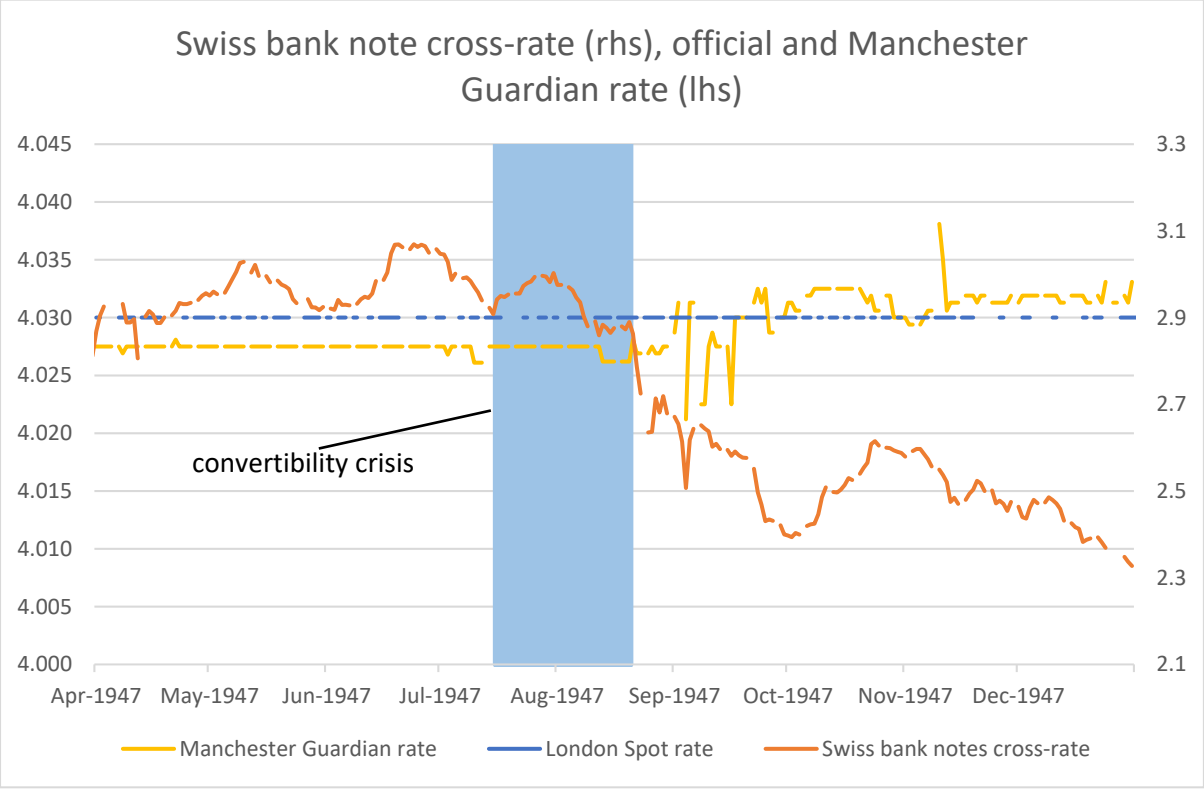


Figure 11 Offshore, *Manchester Guardian* and official daily dollar/sterling exchange rates

Source: Global financial data for the *Manchester Guardian* rate, Accominotti et al. (*The Financial Times*) for the official London spot rate and Swiss National Bank for the bank note cross-rate.

At the end of 1947 the offshore rate reached a low point of $2.3017/£, representing a drop of almost 21% in less than six months. The next section analyses the consequences of

convertibility. Judging by the drop in the offshore sterling rate, convertibility put additional pressure on the pound, even if this was not directly reflected in the controlled official rates. Investors, frustrated by the suspension of convertibility, could have turned to the offshore market to buy dollars and offload sterling.

2.1.4 The consequences of the crisis

What were the longer-term consequences of the convertibility crisis? Exchange rates were tightly controlled until the opening of the foreign exchange market and so offer no information on the pressure on the exchange rate. Macroeconomic literature has used Exchange Market Pressure (EMP) indices to determine stress on a currency with fixed exchange rates.[136] The belief is that if the price of the currency does not reflect market pressure, other indicators do. Traditionally, the indices use the exchange rate, the central bank interest rate and central bank reserves. The Bank of England, however, did not change the Bank Rate from 1939 until 8 November 1951. Therefore, this variable offers little information on exchange rate pressure. Equally, using the official spot rate alone is misleading as it was highly controlled and displayed little volatility, as Figure 11 illustrates.

I have computed a daily index using offshore Swiss bank note cross-rates, EEA gold and dollar reserves and the official exchange rate. This latter rate is stable, but tends to move during crises. All three indicators are divided by their standard deviation to weight them equally. The crisis shook the foundations of sterling. The British currency had lost its status and this was now public knowledge. The consequences were long-lived as shown below using an Exchange Market Pressure index computed.

[136] Barry Eichengreen, Andrew K. Rose and Charles Wyplosz, 'Speculative Attacks on Pegged Exchange Rates: An Empirical Exploration with Special Reference to the European Monetary System', in *The New Transatlantic Economy*, ed. Matthew Canzoneri, Paul Mason and Vittorio Grilli (Cambridge: Cambridge University Press, 1995); Barry Eichengreen and Poonam Gupta, 'Tapering Talk: The Impact of Expectations of Reduced Federal Reserve Security Purchases on Emerging Markets', *Emerging Markets Review* 25 (December 2015), 1–15.

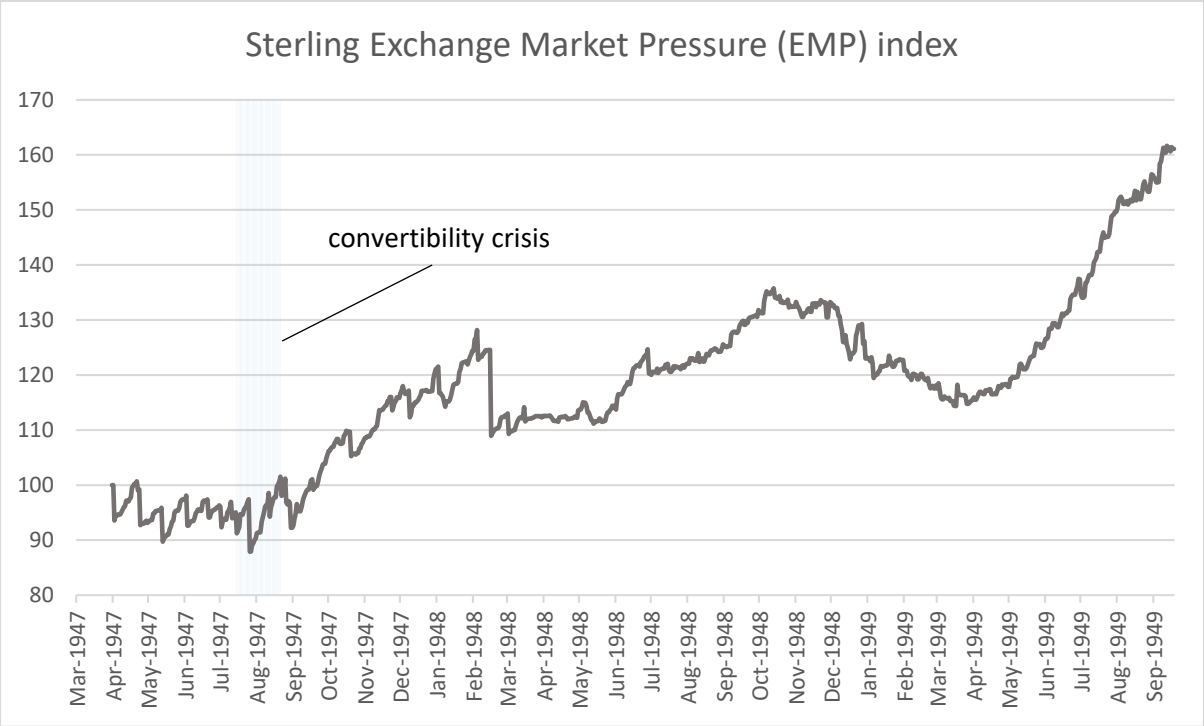


Figure 12 Sterling EMP index, 1947-49

Source: Computed using the official exchange rate (Global Financial Data), Offshore exchange rates (archives of the Swiss National Bank) and EEA gold and dollar reserves (archives of the Bank of England).

Note: Data are indexed at March 1947 = 100. The shaded area highlights the convertibility crisis.

Figure 12 highlights the increasing pressure on sterling following the 1947 convertibility crisis (the higher the index, the higher the pressure). The drop in January 1948 was due to a Marshall Aid inflow of $100 million which affected the reserve position and hence the EMP index. After the 1947 crisis, the index follows an upward trend until the 1949 devaluation, when the chart stops. The aftermath of convertibility marked a continuous period of decline in reserves and lower exchange rates. Before this, currency market participants were uncertain whether sterling played an international role as the dollar did. This event, I argue, made the decline of sterling apparent to all.

The world financial community knew that the Bank of England did not have the firepower to defend a convertible sterling. Sterling declined from being an international

currency with positive externalities for the UK to a problem for the international community to manage. Now there was no longer a bipolar sterling–dollar paradigm; instead, sterling was a problematic international currency. The 1947 episode brought the US and the UK together to manage an orderly retreat for sterling. In the following pages I explore how the British currency was managed by the US, the UK and the international community. All stakeholders hoped to avoid contagion from sterling to the dollar. If it was clear that sterling was only a shadow of its former self, contemporaries still *believed* that sterling was an important currency. And this mattered.

2.2 The 1949 devaluation: Readjusting the postwar parities

After the failed convertibility attempt of 1947, the 1949 devaluation demonstrated that sterling still played an important role when it came to Europe. Governments across the continent, aware that their currencies were overvalued against the dollar, waited for sterling to devalue before they followed. More than 19 countries did so, reshuffling the whole currency equilibrium not only in Europe, but across the world. The devaluation also laid the ground for negotiations that would lead to the European Payments Union (EPU).

What is not clear, however, is whether the devaluation was triggered by external international pressures or if the decision was based on domestic policy. This section argues that the timing of the devaluation suggests that British policy-makers took the decision to devalue only once reserves were exhausted. Using new archival materials and historical data, I demonstrate that the key issue was a worsening of the balance of payments; from May to August 1949 imports from the US saw an increase of up to six-fold. These spikes were mainly due to two factors: worsening economic conditions in the US; and speculation through leads

and lags.[137] I establish a precise timeline for the run on the pound by using daily data, which was unavailable in previous research.

Claudio Borio and Gianni Toniolo argue that the 1949 devaluation and the realignment of currencies were planned in a 'coordinated fashion, reflecting the new postwar cooperative mood, and moved exchange rates closer to the purchasing power parity of European currencies'.[138] Despite more coordination among central banks, the timing of the devaluation was very much an internal decision made by the British government. While Borio and Toniolo are right to emphasise that there was more cooperation during that period, Britain's decision to devalue was made without regard to the international situation.[139] US policy-makers did use the threat of withdrawal of funding through the Marshall Plan or other means as a way to force Britain to comply. However, at the end of the war, Britain still believed it played a major role in the world and was not keen to compromise.

This section also explores the impact of the 1949 sterling devaluation on US policies and monetary gold reserves. The 1949 devaluation marked a shift in US gold accumulation. Monetary gold reserves had been increasing since the war but the 1949 devaluation would reverse this trend.

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[137] Leads and lags occur when importers and exporters adjust terms of payments when foreseeing a devaluation. This is explained in more detail below.

[138] Claudio Borio and Gianni Toniolo, 'One Hundred and Thirty Years of Central Bank Cooperation: A BIS Perspective', in *One Hundred and Thirty Years of Central Bank Cooperation*, ed. Claudio Borio, Gianni Toniolo and Piet Clement (Cambridge: Cambridge University Press, 2008), 41.

[139] Similar debates can be found today with regard to the impact of US monetary policy on international currency flows and exchange rate crises. See the debates on taper tantrum or, for example, Olivier Blanchard, Gustavo Adler and Irineu de Carvalho Filho, 'Can Foreign Exchange Intervention Stem Exchange Rate Pressures from Global Capital Flow Shocks?', working paper (National Bureau of Economic Research, July 2015).

2.2.1 The politics of the devaluation

The British government and Bank of England were for the most part against devaluation, while the IMF and US government were in favour of it. In late 1948, the British Board of Trade suggested devaluing sterling, but its president at the time, Harold Wilson, was opposed to the idea.[140] In March 1949, a recession in the US began to have an impact on Britain. At this point, Sir Robert Hall, director of the Economic Section of the Cabinet Office, 'initiated a campaign to change minds in the Treasury and Foreign Office in favour of devaluation'.[141] Within the government, the Chancellor of the Exchequer, Sir Stafford Cripps, was the principal opponent.[142] In July, however, Cripps went to Switzerland for medical treatment as he was suffering from abdominal cancer and his absence resulted in mounting pressure on the Cabinet to devalue.[143] Hugh Gaitskell, Minister of Fuel and Power and a figure of increasing importance in the Cabinet, believed that 'devaluation might buy the government a brief "lull" in economic conditions'.[144] This would allow the Labour Party to call a general election 'before it had to put further controls on consumption and imports', a decision that would prove electorally unpopular.[145] Morgan Phillips, general secretary of the Labour Party who wanted to call an election well after the devaluation, opposed Gaitskell's strategy. Philips did not prevail and the election was held in February 1950, just a few months after the devaluation.

According to Cairncross and Eichengreen, most of the officials at the Bank of England were against devaluation.[146] Nevertheless, the Bank was preparing for it and, as early as February 1948, was working on a devaluation communication plan. The goal was to assess how much notice would have to be given to other sterling area countries, the US and

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[140] Alec Cairncross and Barry Eichengreen, *Sterling in Decline* (Oxford: Wiley-Blackwell, 1983), 116.
[141] Schenk, *The Decline of Sterling*, 72.
[142] John Bew, *Clement Attlee: The Man Who Made Modern Britain* (New York: Oxford University Press, 2017), 474; Cairncross and Eichengreen, *Sterling in Decline*, 116; Schenk, *The Decline of Sterling*, 72.
[143] Bew, *Clement Attlee*, 474.
[144] Ibid., 475.
[145] Ibid.
[146] Cairncross and Eichengreen, *Sterling in Decline*, 116.

international institutions.[147] The main questions were who to communicate with and when. The Bank of England revised this document frequently and several drafts have been kept in its archive. The first drafts mention partner countries and institutions to contact, but next to 'U.S.A.' there are two question marks. When to involve the US was important. In later drafts, the US is listed as a country that would have to be consulted between two and six days before the devaluation. It is understandable that the Bank was worried about communicating a devaluation plan too early as this would trigger speculation.

As the US government was pushing the UK to devalue it expected more transparency. During a meeting in June, William McChesney Martin, who at the time worked for the US Treasury Department, stressed 'the importance of consultation prior to action' and that the IMF would have a role to play.[148] Willard Thorp, of the US State Department, also stressed 'the need for close cooperation', noting that 'we had passed out of the honeymoon phase of the ERP program'.[149] The US government was informed in June 1949 of 'the possibility that the UK may be confronted this summer with a major financial crisis not unlike that which developed in 1947'.[150] In early September, the US position was clear; it had to be informed, not of 'the precise rate to which they propose to devalue or the precise day on which they would expect to make their approach to the International Monetary Fund', but they should 'have a rough idea'.[151] The constant demands for information-sharing show that in this period British policy-makers did not see the US as a partner in its domestic decision-making. US policy-makers in

[147] The various drafts of the communication plan can be found in the 'Gold and Foreign Exchange Office File Relating to Exchange Control: Devaluation of Sterling, 1949', 2 February 1948 to 31 August 1949, London, Archive of the Bank of England, C43/18.
[148] Draft Memorandum of Conversation 9 June 1949, in Ralph Goodwin et al., eds., *Foreign Relations of the United States 1949*, vol. IV, Western Europe (Washington, DC: United States Government Printing Office, 1975).
[149] Ibid.
[150] Telegram from the Ambassador in the United Kingdom (Douglas) to the Acting Secretary of State, London, 16 June 1949, Goodwin et al., *Foreign Relations of the United States 1949*.
[151] Position paper for the discussions with the British and Canadians on pound–dollar problems, Prepared by the Policy Planning Staff, 3 September 1949, ibid.

turn thought that devaluation was a decision the UK should make 'in its own interest, if it has a realistic view of its own situation'.[152]

The IMF was in favour of devaluation and made this public.[153] Harold James argues that the IMF thought a devaluation was necessary to 'clear the way for general European adjustment'.[154] An IMF report of May 1949 notes that 'U.K. export prospects in the U.S. and Canada would be improved by a parallel devaluation of currencies other than the U.S. and Canadian dollars'.[155] Schenk describes how the IMF consulted European nations in May and June 1949 and concluded that 'any general change of rates would have to be led by a devaluation of sterling'.[156] The fact that the IMF was consulted, Schenk argues, is proof that the devaluation was implemented with the Fund's blessing.

The 1949 devaluation took place with pressure from the US to stabilise the European situation. The US was emerging as a world leader and in response began imposing its views on Europe. However, the ultimate decision to devalue, and the process that led to it, remained very much within Britain's domain.

2.2.2 Causes of the devaluation

Explanations for the 1949 sterling devaluation have emphasised the role of a structural trade deficit with the dollar area, a minor recession in the US in the second quarter of 1949, followed by speculation and pressure from the US. The literature is unanimous in the belief that the devaluation was predictable. Cairncross and Eichengreen highlight the 'growing conviction in financial circles that the current exchange rate would eventually have to be devalued'. Howson

[152] Ibid.
[153] Cairncross and Eichengreen, *Sterling in Decline*, 117.
[154] Harold James, *International Monetary Cooperation Since Bretton Woods* (Washington, DC and New York: Oxford University Press, 1996), 92.
[155] Sterling since the Convertibility Crisis, Report prepared by Brian Rose and approved by Roger v. Anderson, 12 May 1949, Washington, Archive of the IMF, 5.
[156] Schenk, *The Decline of Sterling*, 72.

writes that it 'was always likely that Britain would have to devalue the pound'. Schenk argues that a 'gradual build-up of evidence and opinion' led to devaluation. Capie and Wood refer to 'outside opinion' waiting for devaluation.[157] Contemporary observers were aware that devaluation was imminent and the *Economist* in April reads: 'There is a steadily mounting volume of discussion throughout the world of what is somewhat euphemistically referred to as an adjustment of currencies but what it would be more honest to call the devaluation of all the world's soft currencies. All over Europe it is a general topic of speculation in one, if not the other, meaning of the word.'[158] Even Cripps later admitted that it was expected: 'Our action had been discussed, debated, and indeed almost expected, throughout the world.'[159]

The decline in reserves leading to devaluation was largely due to three factors: a recession in the US; stockpiling; and speculation through leads and lags, which worsened the dollar balance of payments. Leads and lags occur when importers and exporters speculate by adjusting terms of payments.[160] A British importer could stockpile goods bought in dollars and accumulate a large stock to make a profit when the price of the goods from the dollar area increased as a result of the devaluation. British exporters could ease the terms of payment of their US counterpart, from, say, 30 to 90 days, to be paid after the devaluation.[161] In Paul Einzig's essay entitled 'Leads and Lags, The Main Cause of Devaluation' his core thesis is that the 'main reason why the Government felt impelled to dishonour its pledges and devalue sterling was because of persistent selling pressure caused by leads and lags'. Contemporaries were aware of this and, on 9 July 1949, *The Financial Times* observed: 'in recent months the

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[157] Ibid., 5; Susan Howson, *British Monetary Policy, 1945–51* (Oxford and New York: Clarendon Press, 1993), 238; Schenk, *The Decline of Sterling*, 71; Geoffrey E. Wood and Forrest Capie, 'Policy-Makers in Crisis: A Study of Two Devaluations', *Monetary and Exchange Rate Policy*, ed. Donald R. Hodgman and Geoffrey E. Wood (Basingstoke: Palgrave Macmillan, 1987), 184.
[158] 'Currency Adjustment', *Economist*, 30 April 1949; issue 5514, 778.
[159] Mansion House speech, 4 October 1949, quoted in Cairncross and Eichengreen, *Sterling in Decline*, 141.
[160] Paul Einzig, *Leads and Lags, The Main Cause of Devaluation* (London: Macmillan, 1968).
[161] In this example, the US importer would benefit from the better terms of payments but would still have to pay the same amount in dollars, so it can be presented as a win–win situation.

growing fear of sterling devaluation has sped up sales to Britain and has slowed purchases and the payment for them.'[162] The British Ambassador to the US, Douglas, mentioned leads and lags in his communication with the US as 'withholding of payments by US importers, slower repatriation of dollar receipts by UK and Empire exporters and some postponement of purchasing commitments by US and other countries, all of these traceable to widespread talk about possible sterling devaluation'.[163] The BIS reported that 'foreign importers of sterling goods delayed their orders and payments, while sterling-area importers tried to speed up purchases and payments as much as they could'.[164] Clearly, leads and lags were putting a strain on British gold and dollar reserves, as Figure 13 illustrates.

In 1949, EEA dollar and gold reserves dropped by over 40% from £318.2 million in January to £190.2 million in early September, before the devaluation.[165] The loss represents $517.1 million at the official $4.03/£ parity. The most striking result can be seen in the EEA dollar account, which was almost emptied, left with only $3.2 million at its lowest point on 7 September 1949, from just under $300 million in April. Figure 13 highlights the reserve losses incurred by the EEA from the beginning of the year until the devaluation and allows a better understanding of the timing of the devaluation. At the beginning of the run on sterling, the losses can be seen only in the dollar account.

[162] Reported in *The Financial Times*, 9 July 1949.
[163] Telegram from the Ambassador in the United Kingdom (Douglas) to the Acting Secretary of State, London, 16 June 1949, in Goodwin et al., *Foreign Relations of the United States 1949*.
[164] BIS, Annual Report, 1950 (1 April 1949–31 March 1950), 12 June 1950, (Basle, BIS), 150.
[165] Ledgers of the Exchange Equalisation Account, London, Archive of the Bank of England, 2a1417 EEA.

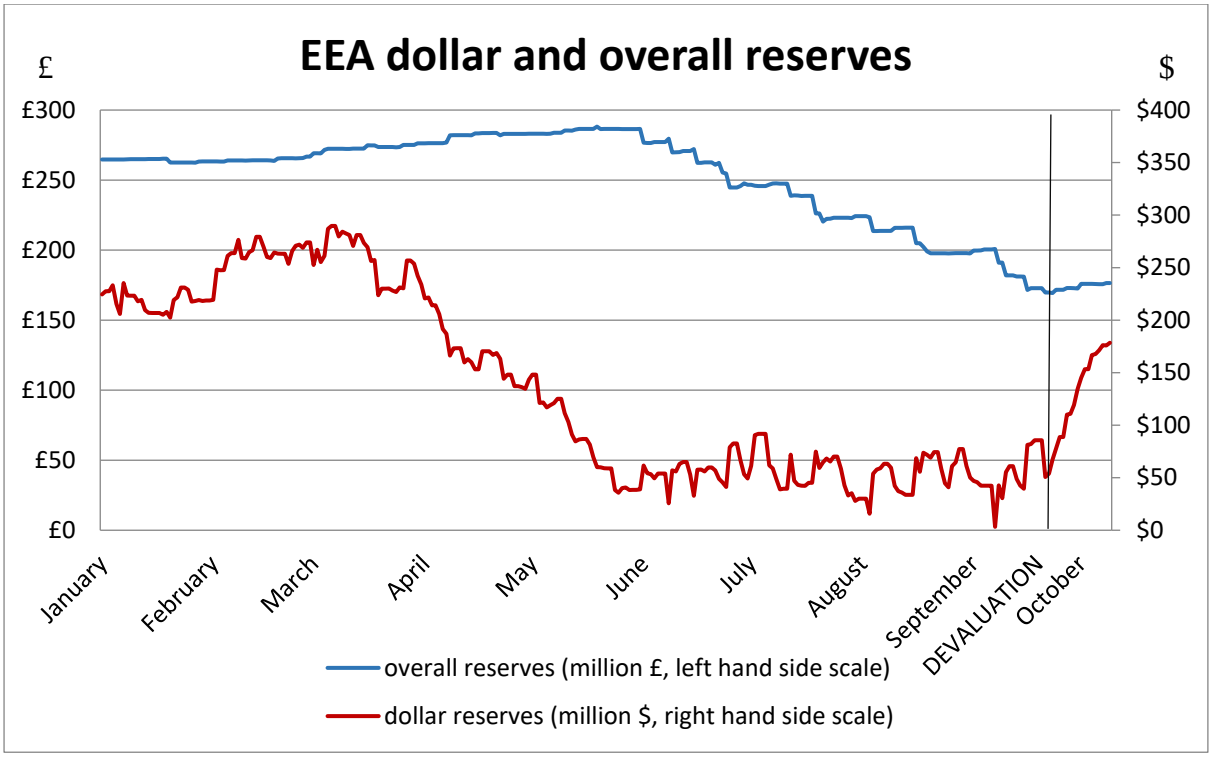

Figure 13 EEA dollar and overall reserves

Source: 'General Ledger of the EEA', 1947–9 and 1949–52, London, Archives of the Bank of England, 2a141/6 and 7.

Note: Overall reserves are on the left scale, EEA dollar reserves (in $ million) are on the right scale. The overall reserves are the sum of the gold and dollar reserves (other currencies were negligible).

Overall reserves dropped later when the EEA started selling gold in order to buy dollars. Between June and September, the EEA sold over £86 million of gold to buy dollars. Until June, the EEA bought gold from South Africa against sterling, which explains the delay in the drop of overall reserves. The worsening of the holdings of the dollar account, however, marks the beginning of the crisis even though gold reserves were still improving. The EEA dollar account was used to buy sterling from authorised private investors through private banks and foreign central banks. The dollar account suffered dramatic losses starting in March 1949.

2.2.3 The balance of payments problem

At the heart of the 1949 crisis a balance of payments problem can be found. This was not the overall balance of payments, which had been improving since 1947, but the trade deficit with the dollar area.[166] In previous research, data on the trade deficit have been collected by the quarter and usually from statistical yearbooks.[167] This dissertation is the first to use the monthly reports on external finance; these were confidential reports, which circulated in numbered copies between the Bank of England, the Treasury and the Cabinet. These are the data policy-makers used to decide on the future of sterling. In this subsection I use these data to show evidence of the channels through which leads and lags went. Previous literature mentions leads and lags but does not provide data to substantiate their existence.[168]

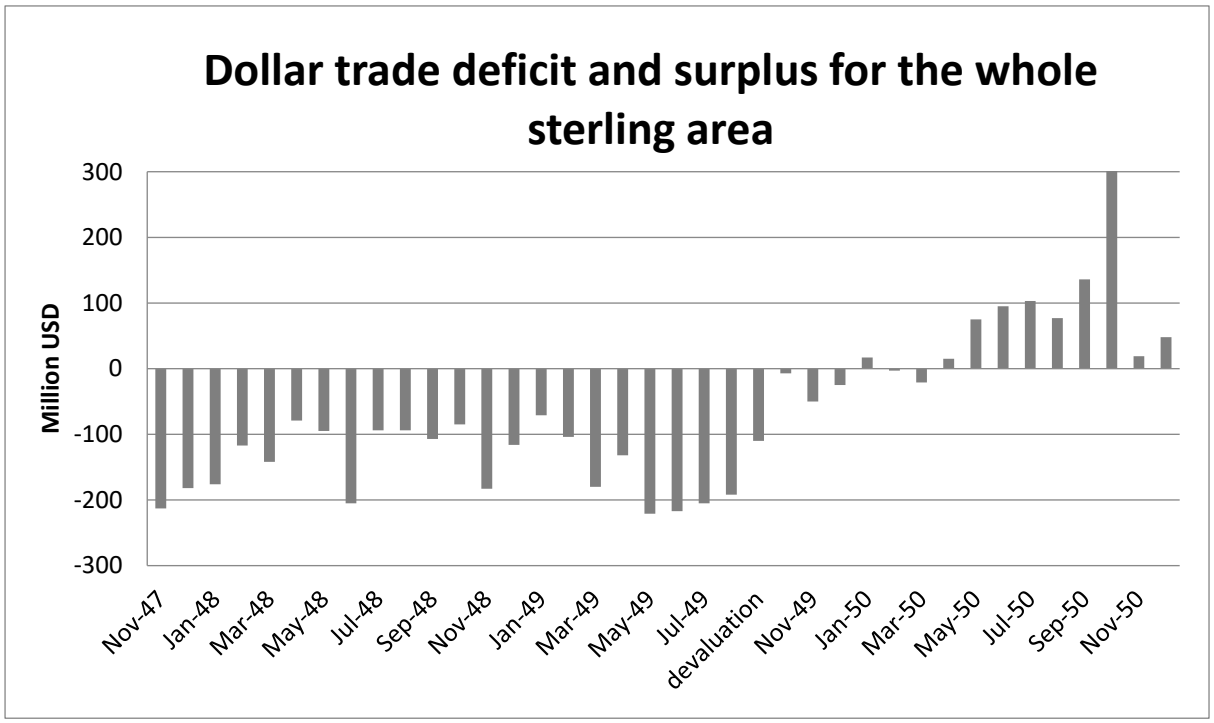

Figure 14 Variation of the overall sterling area balance of payments in millions as the sum of all the sterling area deficits with the non-sterling area

Source: Monthly Reports on External Finance, London, Archive of the Bank of England, EC5/1.

[166] Cairncross and Eichengreen, *Sterling in Decline*.
[167] For example, Schenk, *The Decline of Sterling*; Alec Cairncross, *Years of Recovery: British Economic Policy 1945-51* (London: Methuen, 1985).
[168] For example, Einzig, *Leads and Lags*.

Figure 14 presents the overall dollar deficit. The worst trade deficits for the sterling area since 1947 (the year of the convertibility crisis) occurred during May to August 1949. Deficits for these four months are 57–81% higher than the average of the preceding 12 months and provide a clear explanatory factor for the high reserve losses suffered by the EEA. During these months, Marshall Plan aid was insufficient to mitigate the losses suffered. Despite these losses, officials were wary of publicly increasing drawings from the Marshall Plan as this would cause the market to react negatively. During this same period, the EEA's combined gold and dollar reserves fell below £300 million for the first time. Therefore, these months are instrumental in understanding why devaluation was necessary.

In the monthly reports British imports are divided into six categories: food and drink, tobacco, raw materials, oil, machinery and other manufactures, and others.[169] Exports are shown in three main categories: exports and re-exports, diamonds and others. Do these import and export figures for May to August 1949 stand out when compared with the averages for these months in other years? This would indicate speculation against the pound, as it is unlikely that anything else would suddenly increase the country's need for, say, food and drink, assuming that the population size remains constant. The comparison is difficult, as the data series start in November 1947 and the devaluation affects the export competitiveness positively, therefore informing the figures. Equally, seasonality concerns require a comparison with similar months. To mitigate this, the trade figures for May–August 1949 are compared with the average for May–August 1948 and 1950 together. The average for these months is then compared to the four months before the devaluation. The results are presented in Table 3. These are similar (though slightly smaller) than those obtained when comparing May–August 1949 to the 12 months before the devaluation (these figures are not reported here).

[169] The categories change slightly. For certain years there is a category called films, which is merged with the 'others' category. The name for the oil category changes slightly over the years as well, but otherwise the content of each category is constant.

Change versus average May-August 1948 and 1950

UK imports	May-49	Jun-49	Jul-49	Aug-49
Food and drink	700%	918%	736%	155%
Raw materials	180%	180%	57%	57%
Oil	13%	-29%	-8%	27%
Machinery and other manufactures	51%	87%	44%	8%
Total UK imports	77%	86%	45%	53%
UK exports and re-exports	-35%	-39%	-15%	-31%

Table 3 Percentage increase/decrease of British exports, imports and trade deficit with the US

Source: Monthly reports on external finance, London, Archive of the Bank of England, EC5/1 (author's calculations).

In absolute terms, the UK trade deficit with the US for May–August was $307 million, 1.36 times the EEA dollar reserve at the beginning of 1949. Without Marshall Aid the government would have been forced to devalue earlier. Table 3 highlights changes in UK imports and exports with the dollar area, where the UK was spending dollars needed by the Bank of England to defend the pound. In June 1949, food and drink imports were more than ten times higher than in the previous and following years. This stands out and shows that it is probably due to speculation. Equally, exports for these four months were down by approximately one third.

Why did imports rise tenfold and exports drop by a third for this period? Cairncross mentions stockpiling ahead of the anticipated devaluation as one of the reasons food and drink imports increased.[170] Cairncross and Eichengreen refer to a brief to the Chancellor before the meeting of the Economic Policy Committee on 17 June, which states: 'The Treasury had been expecting the deficit to increase since early April because of heavier expenditure on food and materials (for stockpiling).'[171] However, these figures are suspiciously high even when

[170] Cairncross, *Years of Recovery*, 205.
[171] Cairncross and Eichengreen, *Sterling in Decline*, 148.

stockpiling is taken into account. Nor does it explain the reasons for stockpiling. It is not clear why importers would stock up on perishable goods such as food and drinks.

Leads and lags offer a more convincing argument. As seen earlier, contemporary economists and analysts reported the practice. To find evidence in the data, a closer look is needed. When analysing import and export data just before and after the devaluation there seems to be evidence of the practice. The rise in imports and drop in exports presented in Table 3 is the first explanation. But leads and lags also played a role after September 1949. After a devaluation, at least in the short term, economists at the time agreed that exports were expected to rise and imports fall, as demand for domestic products increased substituting for more expensive products.[172] Therefore, the expected short-term effect would be to see imports decrease and exports rise.

When looking at exports to the US data in Figure 15 and Figure 16 the effect is different. First, before the devaluation exports dropped drastically. This is probably due to exporters waiting for a devaluation before requiring payment from their counter-parties. After the devaluation there is indeed a sharp increase in exports, but this lasted only two months. The peak in exports shows exporters being paid after the devaluation. On the import side, a similar occurrence can be seen, with importers heavily stockpiling before the devaluation and then using their stocks for the months following the devaluation when imports paid for in sterling were more expensive. These figures, presented here for the first time, offer further evidence of leads and lags.

[172] For example, in 1952 Alexander argued that with ‘reduced prices, foreign demand for the country's exports will be increased’ and that ‘the initial effect of the devaluation is to raise the domestic price of imports, presumably leading to some reduction in the country's demand for imports’. Sidney S. Alexander, ‘Effects of a Devaluation on a Trade Balance’, Staff Papers (International Monetary Fund), 2, 2 (1952), 263–78.

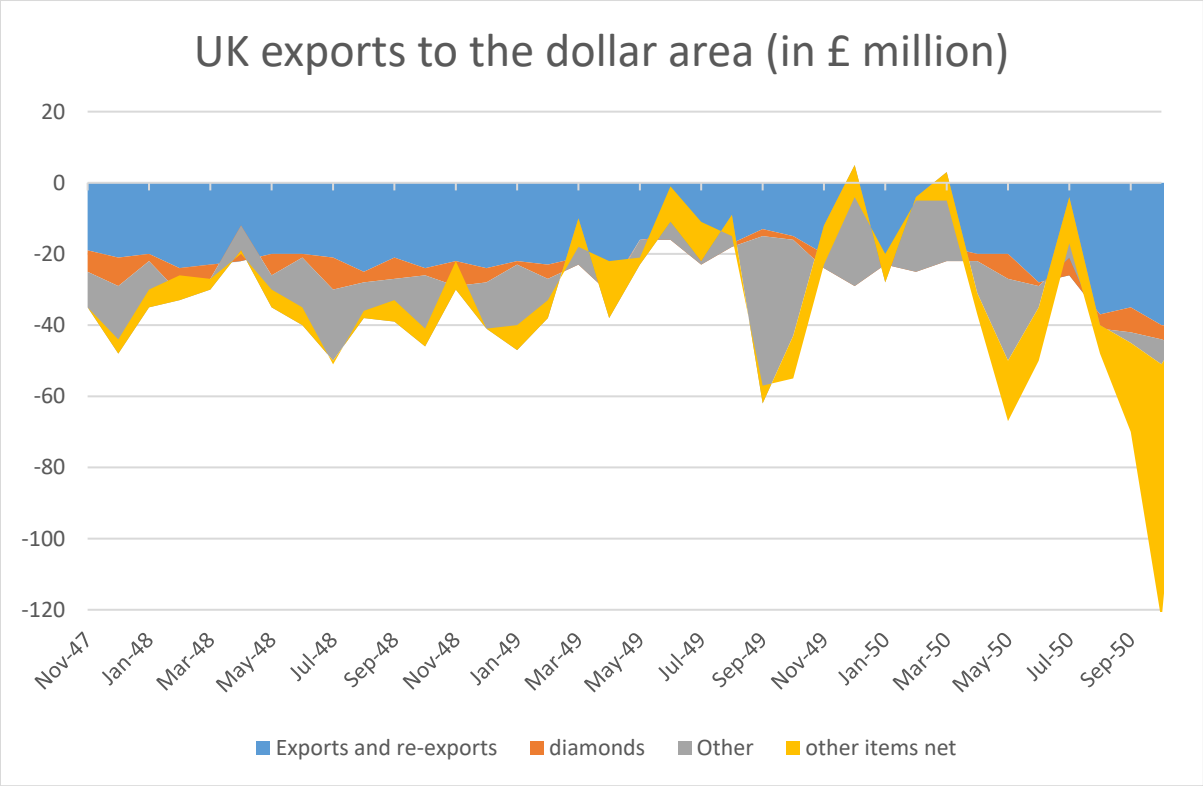

Figure 15 UK exports with the dollar area

Source: Monthly reports on external finance, London, Archive of the Bank of England, EC5/1.

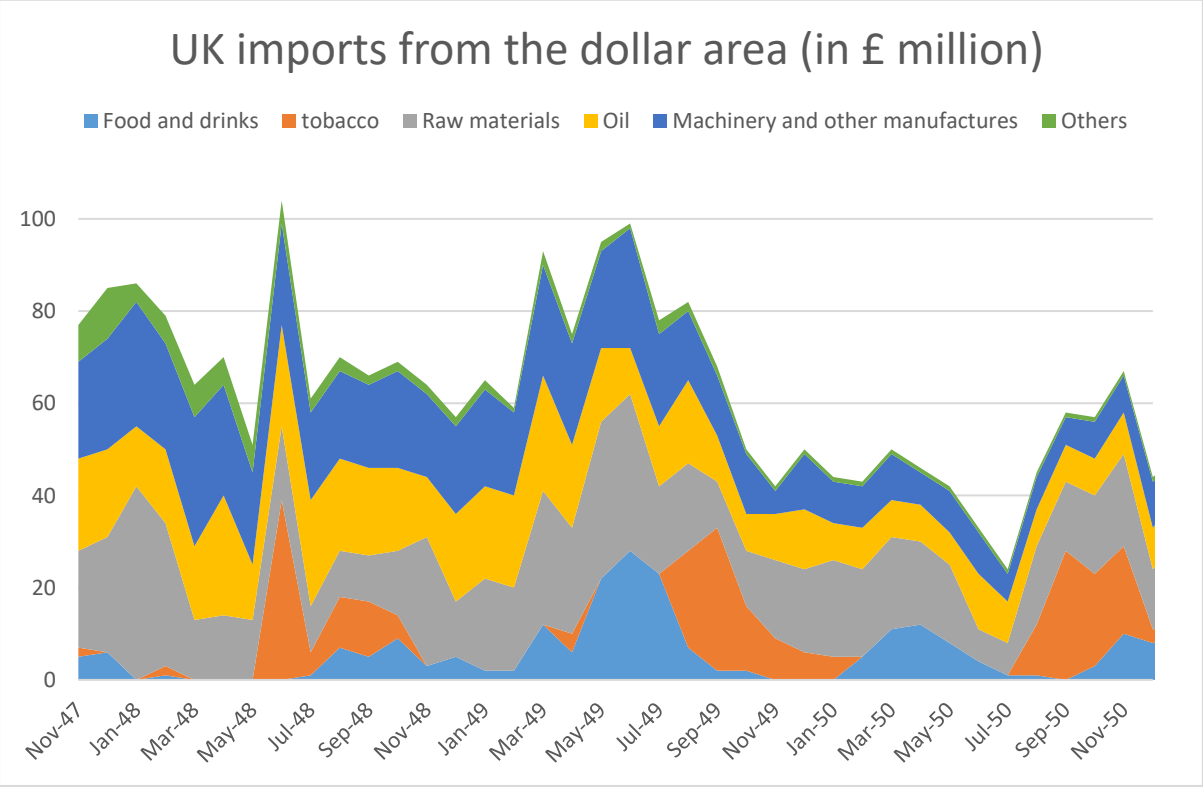

Figure 16 UK imports from the dollar area

Source: Monthly Reports on External Finance, London, Archive of the Bank of England, EC5/1.

A few years after these events, the Radcliffe Report summarised the devaluation: 'Devaluation may take place as the only way out of an exchange crisis rather than a deliberate decision of policy; but in that event, it is likely to be due to earlier policy decisions or failure to take them in time.' 1949 was a failure on the part of the government to devalue before the debates became public knowledge.[173] To summarise, the devaluation was due to a drop in reserves that could no longer be financed by Marshall Aid. The government decided to devalue not because of political pressure from abroad, but because of a run on sterling. Despite capital controls, the run operated through leads and lags, as evidenced by the deviation of imports and exports figures from previous trends and the drop in exports and increase in imports just before the devaluation, which was then reversed. What were the international repercussions?

2.2.4 International repercussions

The IMF and the US wanted Britain to lead the rest of the world in adjusting the value of the dollar.[174] Over 19 countries followed sterling in the currency adjustment. The BIS noted that since the gold standard was first established, 'there have been only two years in which adjustments of foreign exchange rates have been so sweeping that the expression "wave of devaluations" has been justified'.[175] Table 4 summarises this 'wave' using an article in the *Economist* published a few days after the devaluation. The table presents a list of all countries that followed the UK into devaluation. Sterling's importance meant that most countries did so, with the approval of the IMF and the US, even countries outside the sterling area, such as France, the Netherlands, Portugal and Sweden. Most countries devalued by 30.5% against the

[173] Committee on the Working of the Monetary System, Cmnd 827 (London, 1959).
[174] See section 2.2.1 The politics of the devaluation and Schenk, *The Decline of Sterling*, 72.
[175] BIS, Annual Report, 1950 (1 April 1949–31 March 1950), 12 June 1950, (Basle: BIS), 148.

dollar. The last group though did not change parity with the dollar and consequently also revalued their currency by 30.5% against sterling.

Country	Devaluation
Australia, Burma, Ceylon, Denmark, Egypt, Finland, Greece, India, Iraq, Ireland, Israel, Netherlands, New Zealand, South Africa, Sweden, UK	30.5%
France Portugal Belgium Canada	22.2% 13.3% 12.3% 9.1%
Czechoslovakia, Pakistan, Persia, Poland, Switzerland	No devaluation against the dollar

Table 4 Devaluation against the dollar by country

Source: 'The Exchange Adjustments', *Economist*, 24 September 1949, 681.

Note: The table is missing Germany which also devalued the Deutschmark by 20.7%.

Beyond political coordination, did the 1949 devaluation reduce global economic imbalances? Was this sterling-led move beneficial for the stability of the international monetary system? Parallel market data show how the devaluation reduced global imbalances. Carmen Reinhart and Kenneth Rogoff provide a data-set of parallel markets – either free markets or black markets – for 93 countries.[176] The premium is calculated as a percentage of the official rate. The formula is given as: premium = (parallel – official)/official. A premium of 100 means the parallel market rate is twice the official rate. A premium of 0 means that parallel rates are the same as the official rate, which is the case for most exchange rates in a mobile capital economy. Figure 17 presents the average of the premium index for 92 countries from the Reinhart and Rogoff sample.[177]

[176] Carmen M. Reinhart and Kenneth Rogoff, *This Time is Different: Eight Centuries of Financial Folly*, reprint edition (Princeton, NJ: Princeton University Press, 2011), available online.

[177] Bolivia is excluded as it distorts the average significantly and is not central to the argument.

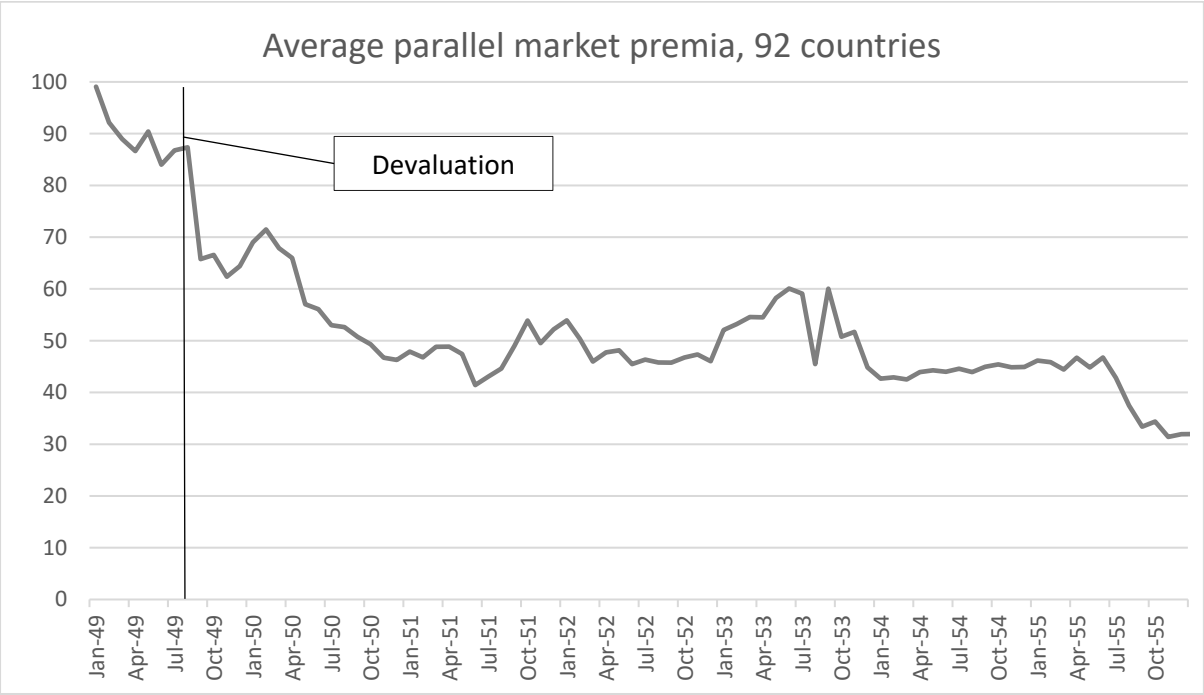

Figure 17 Average parallel (black or free) market premium, average of 92 countries

Source: Reinhart and Rogoff database.

Figure 17 shows the rapid decline in parallel market premia, based on the Reinhart and Rogoff indices from almost 100 before the devaluation to around 50 six months later. 100 means that the average currency was twice as expensive on the black or free markets. For example, sterling traded around $2.4 on free markets in Switzerland and $4.03 in the official market. As a result of the sterling devaluation, the Reinhart and Rogoff index for the pound declined from a 42.4% discount to a 9.8% discount. After the devaluation, the average black and free market premia for the 92 countries from the sample dropped drastically and did not return to pre-devaluation levels until the 1960s. Thus the devaluation played a positive role in the reduction of free markets premia.

The devaluation dealt with global imbalances as it drastically reduced black market premia worldwide. It prepared the ground for the EPU. But what was the effect of the devaluation on the world's leading currency, the dollar? And what effect did it have on the

Federal Reserve? The devaluation of 19 currencies against the dollar implies a revaluation of the dollar. With the dollar value increased but no change in the dollar/gold price, the devaluation led to an increase in demand for US gold in the long run. The effects were also felt in the short run and the mechanisms was as follows: currencies (mainly sterling) experienced large capital outflows during the run-up to the devaluation. Investors, importers and exporters all tried to move their assets out of sterling into the most liquid and safe currency, the dollar. After the devaluation they repatriated their capital to the UK or sterling area. This large inflow of dollars eventually ended up in the hands of the Bank of England, which did not want to hold such large dollar holdings and preferred gold. Therefore, the Bank, as well as many European central banks in possession of dollars, went to the Federal Reserve gold window to convert their dollars into gold. This led to a progressive depletion of US gold reserves.

The sudden run on US gold is confirmed by econometric analysis. A Bai-Perron structural break test shows a clear break in US monetary gold holdings in November 1949, the month after the devaluation.[178] Bai-Perron break tests are used to identify a sudden structural change in a data series, first, on a sample of monthly data from 1947 to 1959 and then on a broader sample from 1947 to 1970, for the whole Bretton Woods period. Table 5 summarises the results of various break tests: the model is specified to allow from 1 to 5 breaks for each of the two specifications; the figures in parenthesis explain when a given break date appears. In the first sample (1947–70), 1949 appears as the significant break when only allowing for one break. When allowing for two breaks, 1949 and 1967 stand out. Finally, when allowing for three breaks, all the dates in Table 5 emerge. Adding a fourth or fifth break does not yield significant break dates. This confirms the robustness of November 1949 as a break date, as it appears as the most significant and first break in both samples.

[178] Jushan Bai and Pierre Perron, 'Estimating and Testing Linear Models with Multiple Structural Changes', *Econometrica* 66, 1 (1998), 47–78; Jushan Bai and Pierre Perron, 'Critical Values for Multiple Structural Change Tests', *Econometrics Journal* 6, 1 (1 June 2003), 72–8.

Sample	Break dates (max. breaks allowed)	Specifications
1947-70	November 1949 (1) March 1958 (3) December 1967 (2)	Significance: 1% Trimming: 10% Max. breaks: 1 to 5
1947-59	November 1949 (1) September 1951 (3) February 1958 (2)	Significance: 1% Trimming: 10% Max. breaks: 1 to 5

Table 5 Bai-Perron structural break testing specifications and results

Note: The figures in parenthesis represent the maximum number of breaks.

Another notable factor after the devaluation is a drop in the Real Effective Exchange Rate (REER) for the dollar. The REER weighs the value of a currency against a basket of currencies. It is not only trade-weighted (the more a country trades with the US, the more important it is in the basket of currencies in the REER) but is also adjusted for inflation and approximates the real value of the dollar. When taking a 140-year sample of annual observations of the REER, 1949 stands out clearly as the year when the dollar lost most value. The dollar gained value in nominal terms as it was then worth more in terms of sterling, French francs and Dutch florins, but it lost real value as it marked a period of challenge for the dollar. Figure 18 plots the REER (in red) and fits it to a constant (in green) using a Bai-Perron structural break test. One of three breaks over the 140-year period is 1949 (the other two are 1927 and 1984).[179] This suggests that 1949 represented a fundamental change in the value of the dollar. The devaluation had a negative impact on the value of the dollar, as expressed by the REER. Inflation was also increasing from 1950, especially in 1951 in the wake of the Korean War, and negatively impacted the REER.

[179] This is done using standard parameters of trimming 0.15, max. breaks 5, sig. level 0.05.

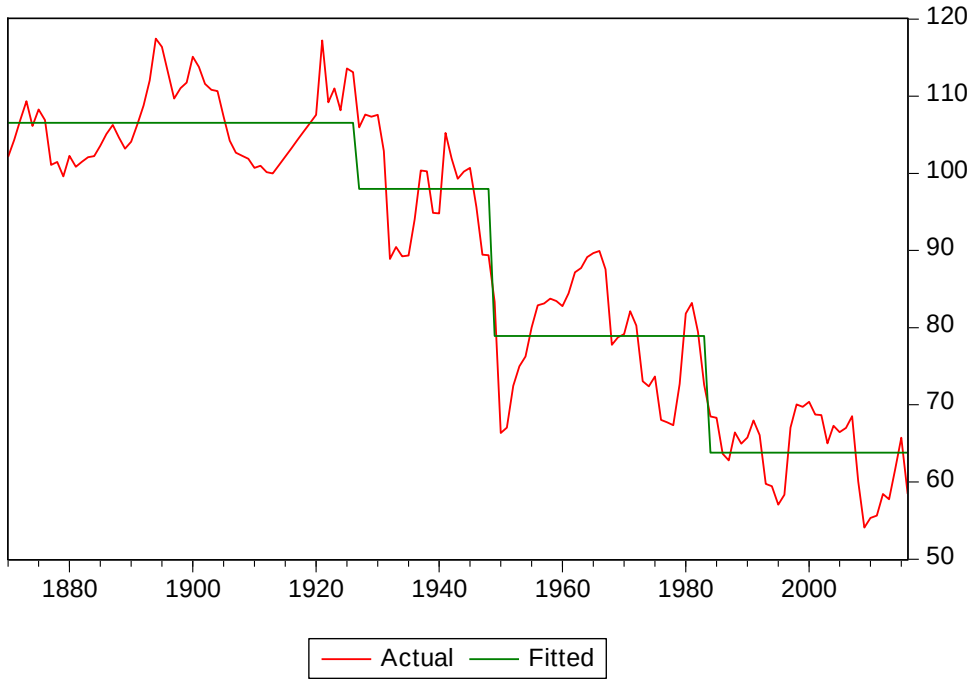

Figure 18 US Real Effective Exchange Rate (REER) 1870–-2010

Source: FRED, REFXRUKA, author's calculation.

Note: Bai-Perron break test result. The red line is the US REER and the green line is best-fitted average.

Another consequence of the devaluation is that it paved the way for more trade integration within Europe. The 1949 devaluation was a necessary condition to open European Payments Union (EPU) discussions. The *Economist* noted that 'every Western European currency, save the Swiss franc, has now made some response to the sterling devaluation'.[180] Selectively adjusting European currencies against the dollar, as shown in Table 4, meant trade deficits could be brought under control. A year after the devaluation, on 19 September 1950, the EPU was put in place. EPU started with an initial working capital of $350 million provided by the US as part of Marshall Aid. The mechanism allowed monthly clearance between European countries, including the sterling area and franc zone, with the BIS acting as agent.

[180] 'The Exchange Adjustments', *Economist*, 24 September 1949, 681.

The system was accounted in dollars and payments could be made in gold, dollars or EPU credit.[181]

2.3 December 1951, the opening of the London foreign exchange market: sterling's window on the world

On 17 December 1951, the London foreign exchange market, which had been closed since 1939, reopened. This allowed sterling to test international waters. After the failed convertibility attempt of 1947, this was a step towards the reintegration of sterling into global finance. However, capital controls remained and the Bank of England frequently intervened in the spot market. After the reopening of the market, the influence of the pound would grow, giving investors a daily barometer reading of the state of the UK currency. Daily sterling quotes became available to any investors in New York who were concerned about the state of the international monetary system. In this section I argue that the reopening of the market was smooth and did not trigger a crisis. The consequences were positive for market participants who could trade currencies at a lower cost in London, and reinforced the position of the City in international foreign exchange markets. However, sterling was still divided into different geographical convertibility areas and was far from a fully functioning international currency.

London emerged later than other financial centres as an international foreign exchange market, partly because international trade operated in sterling. Einzig shows that after the Napoleonic Wars, London and Paris were the two leading foreign exchange markets, with London lagging behind, in part because it did not offer a forward foreign exchange market.[182] In 1870, London briefly overtook Paris when the franc came under stress. However, at the

[181] Bordo, 'A Historical Overview', 43.
[182] Paul Einzig, *The History of Foreign Exchange*, 2nd edition (London and New York: Palgrave Macmillan, 1970), 182.

beginning of the twentieth century, London was again lagging behind Paris, as well as Berlin and New York.[183] Since 'the overwhelming majority of foreign trade transactions in Britain were conducted in terms of sterling', most foreign exchange transactions were conducted abroad.[184] After the First World War, the London market rose in prominence.[185] When Britain withdrew from the Gold Standard in 1931, the importance of the Bank on the foreign exchange market increased.[186]

Reopening the market in 1951 was a natural step for the authorities and restored sterling to the international scene. The *Manchester Guardian* called this 'the first essential step, although only a small step, towards the eventual goal of the restoration of full convertibility'.[187] The stability of sterling would become progressively more important within the Bretton Woods system, especially after convertibility in 1958. Thus the reopening of the market was successful in the early Bretton Woods system, following the failure of the 1947 convertibility and the 1949 devaluation, which did not solve Britain's long-run sterling problems, as we have seen.

2.3.1 Negotiations leading to the reopening

The negotiations leading to the reopening of the market were essentially a British matter between the Bank of England, the Treasury and the government. According to Fforde, the Labour government was reluctant to reopen the market.[188] The Conservative victory in the October 1951 general election, led by Winston Churchill, helped tip the balance.[189] The new government, however, wanted the reopening to be communicated as a technical measure and

[183] Atkin, *The Foreign Exchange Market of London*, 1.
[184] Einzig, *The History of Foreign Exchange*, 182–3.
[185] Olivier Accominotti and David Chambers, 'If You're So Smart: John Maynard Keynes and Currency Speculation in the Interwar Years', *The Journal of Economic History* 76, 2 (June 2016), 342–86.
[186] Atkin, *The Foreign Exchange Market of London*, 58.
[187] 'Seen from the City', *Manchester Guardian*, 16 December 1951, 2.
[188] This is described in Fforde, *The Bank of England and Public Policy, 1941–1958*, 412–17. and in a more succinct and intelligible way in Atkin, *The Foreign Exchange Market of London*, 102.
[189] Atkin, *The Foreign Exchange Market of London*, 102.

not a political move.[190] The literature does not mention outside pressure from the US or the IMF in 1951–2. It was a domestic policy decision for the UK, unlike the opening of the gold market, which prompted an international debate because of its obvious consequences for the stability of the Bretton Woods system.[191]

The US welcomed the reopening of the foreign exchange market; as a press correspondent noted, it was 'regarded here [in Washington] as the most important move yet made by Mr Churchill's Government', and was 'applauded as a step towards greater economic and financial flexibility'.[192]

Treasury officials 'were sympathetic, but Ministers proved reluctant'. [193] While Labour was still in power in 1951, Douglas Jay, Financial Secretary to the Treasury, was concerned that wide forward premia or discounts on the new market 'would simply encourage rumours and expectations that the sterling–dollar parity was going to be changed'.[194] Before the opening of the market, the Bank of England was offering 'forward cover for genuine commercial exchange operations at a cost of one per cent per annum on the official buying or selling rate for spot'.[195] But as Einzig argues, leads and lags were a way to speculate using 'genuine' commercial exchange operations, and importers and exporters used forward contracts for speculation.[196] The *Economist* explained the issue: 'When sterling has been under suspicion, the authorities have been called upon to cover foreign exchange requirements on an abnormally large scale; when, conversely, rumours of re-valuation have been in the air, the authorities have had to be one-way buyers of forward dollars and other foreign currencies.'[197] The Bank of

[190] Fforde, *The Bank of England and Public Policy, 1941–1958*, 415.
[191] See section 5.
[192] 'U.S. and Canadian Satisfaction', *Manchester Guardian*, 16 December 1951, 1.
[193] Fforde, *The Bank of England and Public Policy, 1941–1958*, 413.
[194] Ibid.
[195] 'The Foreign Exchange Market', *Economist*, 22 December 1951, 1538.
[196] Einzig, *Leads and Lags*.
[197] 'The Foreign Exchange Market', *Economist*, 22 December 1951, 1538.

England used this to justify its argument for allowing a free forward market, along with a spot market, within exchange rate bands.

The main argument was that, by offering forward contracts at an official rate, the Bank was inviting speculation against sterling through leads and lags. The outcome was that the Bank was increasingly exposed to foreign exchange risks with its high holding of forward contracts. Atkin notes that since the war, 'monetary policy had been put into deep freeze with the government relying on fiscal policy and direct controls to manage the economy', and that 'fixed forward exchange rates and flexible domestic interest rates are inappropriate bedfellows'.[198] The Bank used the potential losses from increased speculation against sterling to make a case for a completely free forward market and this was eventually successful.[199]

2.3.2 The reopening of the market in 1951

Before the reopening of the market in 1951 the Bank fixed the price of the currency and chose authorised dealers who dealt with the public. The dealers were 'clearing their balances daily' and did not hold any foreign exchange.[200] The *Economist* explained that the reopening meant that dealers no longer traded on behalf of the Bank of England, but had 'become genuine dealers again operating on their own account'.[201] The market moved from the Bank of England as a market-maker to 108 authorised banks and brokers setting their own prices.[202] In the view of the BIS, this was a bold move: 'it is interesting to find that while the strain on the reserves was still at its height the authorities decided that the London foreign exchange market … should be reopened'.[203] Figure 19 shows how the market reopening coincided with reserves in decline.

[198] Atkin, *The Foreign Exchange Market of London*, 102.
[199] Free here means without official imposed limited and not free from intervention.
[200] 'Control Eased – Slightly', *Manchester Guardian*, 17 December 1951, 5.
[201] 'The Foreign Exchange Market', *Economist*, 22 December 1951, 1538.
[202] BIS, Annual Report 1953, (1 April 1952-31 March 1953), 8 June 1953, (Basle: BIS), 132.
[203] Ibid., 138.

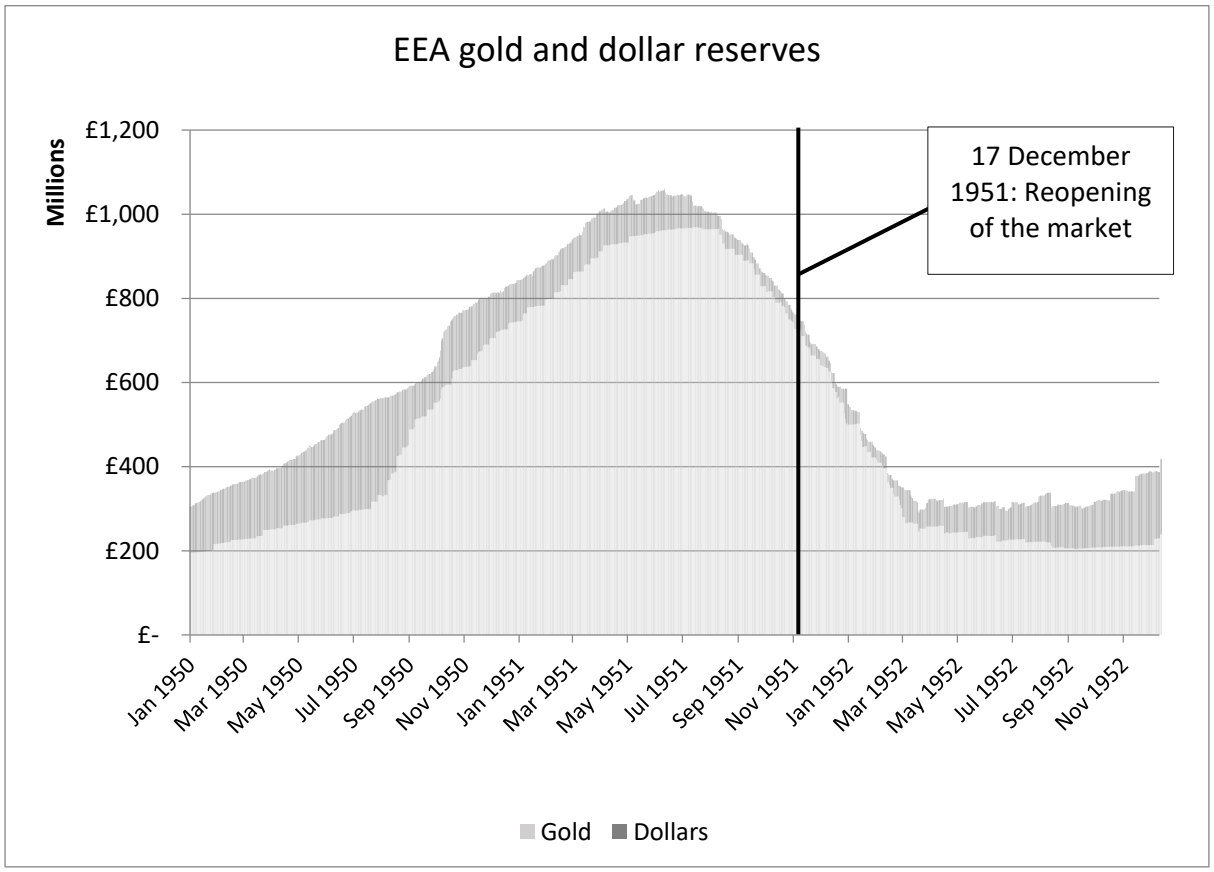

Figure 19 Exchange Equalisation Account gold and dollar reserves

Source: General Ledger of the EEA for 1949–52, London, Archives of the Bank of England, 2a141/7.

The increase in reserves in 1950 was a result of the 1949 devaluation, which strengthened the Bank's reserve position. Yeager argues that the 'Korean War boom in the raw-material exports of Sterling-Area countries benefited the post-devaluation position of sterling so much that rumours of its impending upward revaluation … circulated in the winter and spring of 1950–1951.'[204] Leads and lags speculation had reversed and 'merchants now tended speculatively to delay receipts and hasten payments due in sterling'. However, this honeymoon period of capital inflows came to an abrupt halt as the cost of more expensive imports started to have an impact. Sterling area countries therefore needed more dollars and

[204] Leland B. Yeager, *International Monetary Relations: Theory, History and Policy*, second edition (New York: Joanna Cotler, 1976), 385.

gold to pay for imports, which put drain on the EEA.[205] Over the following two years, notably due to inflation resulting from the Korean War, the reserve position of sterling worsened.[206] Britain's rearmament also had a negative impact on reserves.[207]

The reopening of the market, however, did not trigger a major foreign exchange crisis but had two major consequences: it allowed the rate to float within a larger band; and it lowered bid–ask spreads. Overall, market participants benefited from lower transaction costs and the City saw an opportunity to develop international leadership in the foreign exchange market, which it still retains.[208]

Figure 20 illustrates the broadening of the band on the sterling/dollar market, the most important foreign exchange market in terms of volume. Sterling rates moved from $2.78 7/8–2.80 1/8 per sterling to $2.78–2.82 per sterling for spot rates. The Bank of England allowed the broadening of the trading band from $0.0125 to $0.04, a 220% increase. The new band represents 0.71% on either side of the $2.80/£ official parity. As the BIS noted in its report, 'it is narrower than the swing permitted under the Articles of Agreement of the International Monetary Fund (one per cent on each side of the official parity)'. [209] This increase allowed the authorised banks to make a market. The role of the Bank of England was reduced to interventions and no longer market-making. Forward rates, unlike spot rates, benefited from 'full freedom of movement' and were not constrained to a band.[210]

[205] Ibid.
[206] Bordo, 'A Historical Overview', 45.
[207] William Allen, *Monetary Policy and Financial Repression in Britain, 1951-59* (New York: Palgrave Macmillan, 2014), 4–6.
[208] Barry Eichengreen, Romain Lafarguette and Arnaud Mehl, 'Cables, Sharks and Servers: Technology and the Geography of the Foreign Exchange Market', working paper (National Bureau of Economic Research, January 2016), 1.
[209] BIS, Annual Report,1952 (1 April 1951-31 March 1952), 9 June 1952, (Basle: BIS), 136.
[210] Ibid.

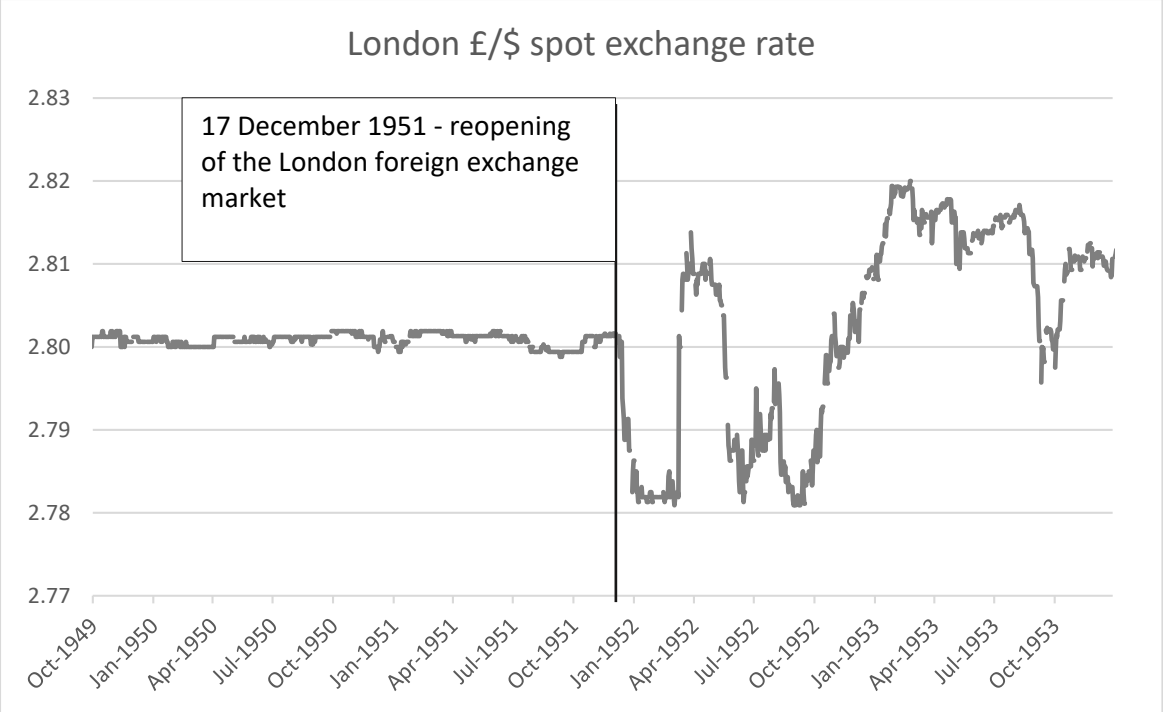

Figure 20 Spot exchange rate after the September 1949 devaluation until the end of 1953
Source: Global Financial Data.

The opening of the market was a success. Fforde quotes Bolton of the Bank of England, who wrote that authorised banks had done 'amazingly well in view of the short notice'.[211] The *Economist* noted approvingly that Canadian and US dollar spreads were 'no more than a quarter of a cent'.[212] Spreads are the difference between the buying and selling price (referred to as bid–ask spreads). Figure 21 illustrates for the first time the decline in the spreads of ten major currencies on the London market using data from Accominotti et al. at a disaggregated level.[213] The cumulative index for the ten currencies fell from 1000 in 1951 to just under 300 in 1953, representing an average decrease of over 70% in two years. Consequently, it became cheaper

[211] Fforde, *The Bank of England and Public Policy, 1941–1958*, 416.
[212] Ibid.; 'Revival in Foreign Exchanges', *Economist*, 29 December 1951, 1596.
[213] Accominotti et al., 'Currency Regimes and the Carry Trade'.

and more attractive to trade currencies in London. This advantage remained with the City for most of the twentieth century and into the twenty-first.[214]

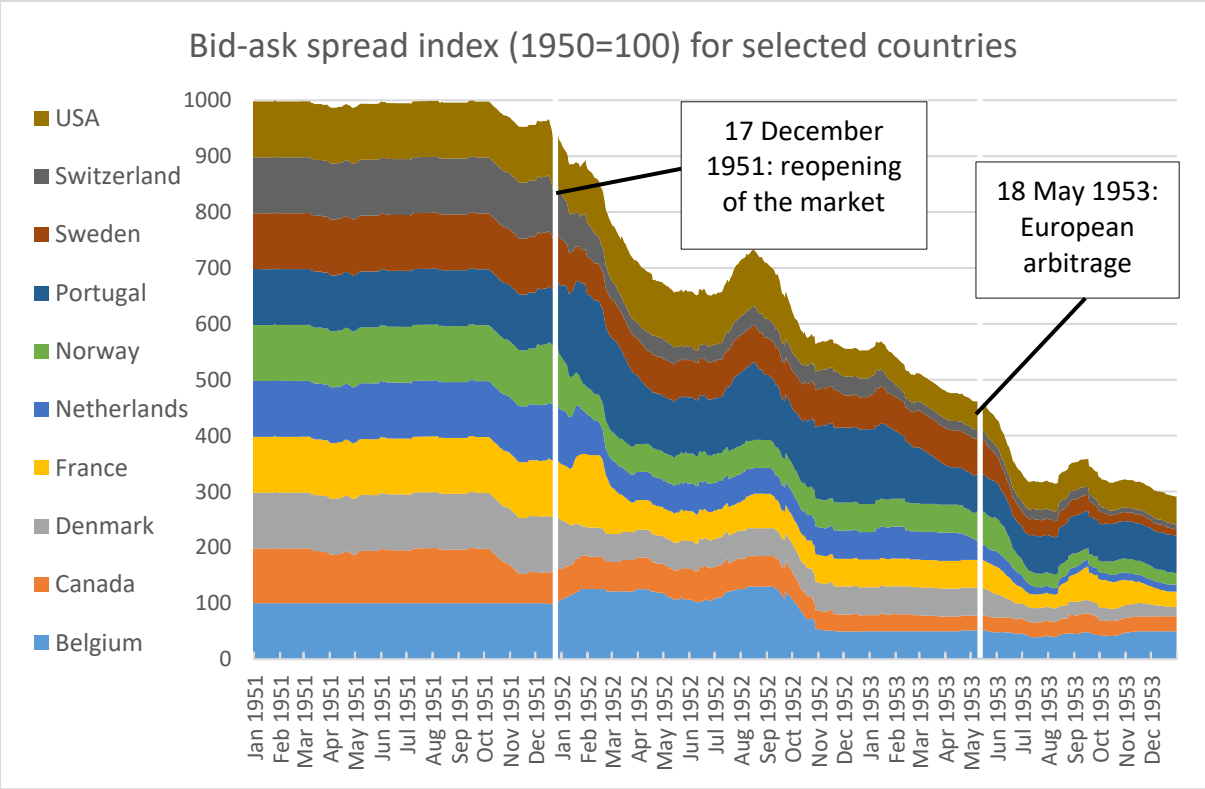

Figure 21 30-days moving average data for 1951–3

Source: Bid–ask data: Accominotti et al.; computation: the author.

Note: The index is based on spreads before the opening of the market (whole year 1950 = 100).

Using a Bai-Perron break test, two dates stand out.[215] As Figure 21 shows, the first is the opening of the market in 1951 and the second arises in May 1953. The second is due to the liberalisation of arbitrage among European markets. The liberalisation simplified foreign exchange transactions after the introduction of the EPU.[216] The *Economist* describes the

[214] BIS, 'Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets in 2016', BIS Triennial Report, 11 December 2016.

[215] Regressing a constant against both the sum and the mean of the indices presented in Figure 21 using a standard Bai-Perron structural break test (trimming 0.15, max. break 5, sig. 0.05) indicates 18 May 1953 (the first day of European arbitrage) as one of four break points. Using the median of the indices with the same specifications indicates 18 December 1951 (the day after the market reopening) as one of four break points.

[216] Bordo, 'A Historical Overview', 43.

situation before liberalisation: 'A British bank in possession of French francs could sell them in Paris for sterling but not for guilders. A Belgian bank requiring guilders had to obtain them in Amsterdam, even though the cross-rates showed them to be cheaper in London.'[217] Liberalisation meant all European currencies could be traded throughout Europe, while dollars could still be traded only in the home centre of the currency in question (for example, the sterling–dollar pair in London). The liberalisation applied to London, Paris, Amsterdam, Brussels, Frankfurt, Copenhagen, Stockholm and Zurich.[218] It led to 'very substantial' business on the first day of liberalisation according to a telephone conversation between the Federal Reserve and the Bank of England.[219] A few days after the liberalisation of arbitrage, Knoke of the New York Fed wrote to Menzies of the Bank of England to summarise the position: 'people generally seem to feel that the new arrangement is not a major change but a step in the right direction.'[220]

The opening of the foreign market and the 1953 liberalisation made it easier to trade in currencies without making sterling fully convertible as numerous capital controls remained in place. This is in line with modern financial literature which argues that foreign exchange market liquidity is largely driven by market-wide shocks; the reopening of the market is one such example.[221] Also, the increase in turnover resonates with findings by Lyons, who argues that liquidity and market efficiency are closely related.[222] The reopening of the market and further liberalisation in 1953 increased the efficiency of the market and so reduced spreads.

[217] 'European Arbitrage Again', *Economist*, 23 May 1953, 531–3.
[218] BIS, Annual Report 1953, (1 April 1952-31 March 1953), 8 June 1953, (Basle: BIS), 132.
[219] Telephone conversation with Mr Roy Bridge of the Bank of England, memorandum, T. J. Roche, 18 May 1953, New York, Archives of the Federal Reserve, box 617031.
[220] Letter from Knoke to Menzies, 29 May 1953, New York, Archives of the Federal Reserve, box 617031.
[221] Loriano Mancini, Angelo Ranaldo and Jan Wrampelmeyer, 'Liquidity in the Foreign Exchange Market: Measurement, Commonality, and Risk Premiums', *Journal of Finance* 68, 5 (2013), 1806.
[222] Richard K. Lyons, *The Microstructure Approach to Exchange Rates* (Cambridge, MA: MIT, 2006), 77.

2.3.3 How did the market reopening affect the credibility of sterling? Evidence from alternative markets

If the reopening of the market and later liberalisation increased liquidity, it is unclear whether it helped strengthen the credibility of sterling. One way to assess the effect is to follow the direction the leading currencies took subsequently to ascertain whether they appreciated or depreciated. Figure 22 represents the effect of market liberalisation in 1951–2 on 11 currencies from leading trading partners and shows the cumulative percentage variation of these currencies.[223]

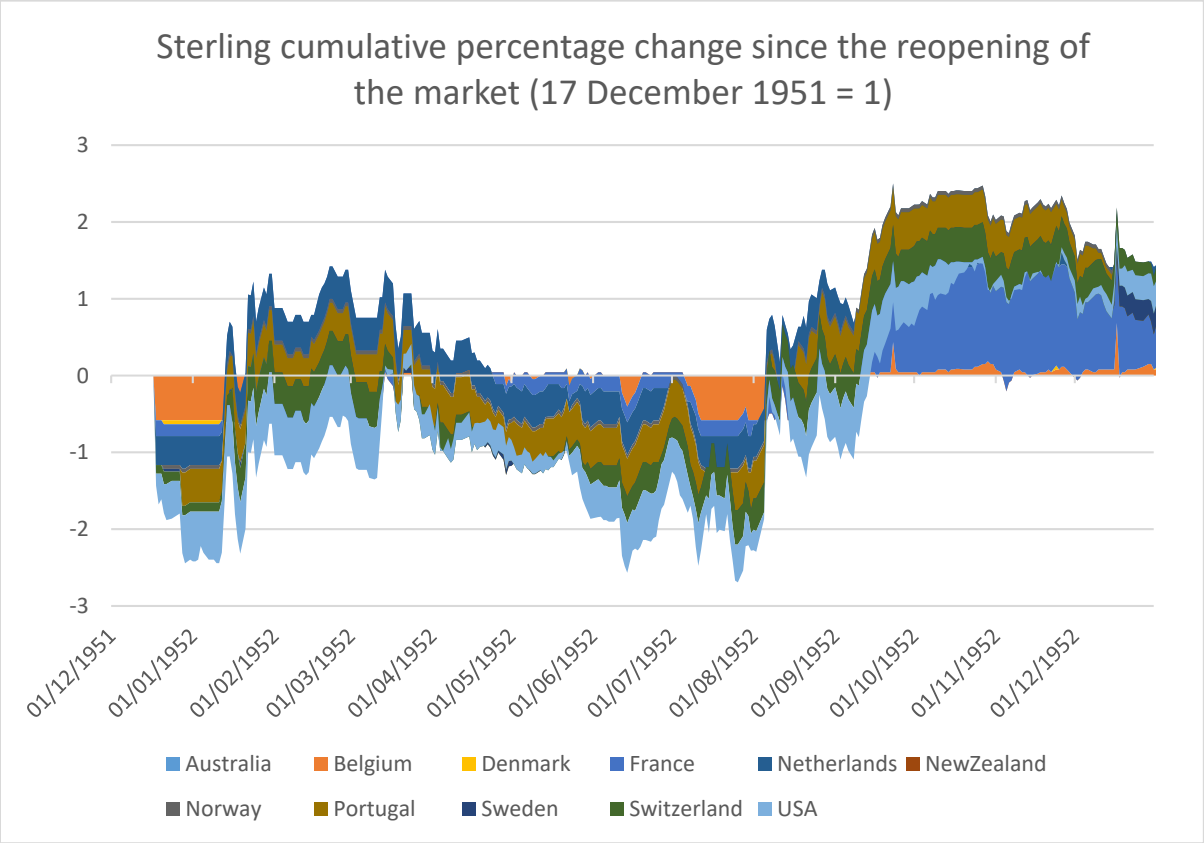

Figure 22 Variation in index (17 December 1951 = 100) for 11 currencies

Note: The numbers on the scale represent the cumulative index variation after the reopening of the market,

[223] Canada and Germany are excluded because the market with Canada had been liberalised earlier and Germany offers no quotation before the market reopened. These two currencies are therefore excluded in order to avoid distorting the chart.

Figure 22 reveals that after depreciation against most currencies immediately after the reopening of the market, sterling was relatively stable, appreciating in late 1952. The analysis in the BIS annual report reveals that although the pound started to present signs of weakness, after the March 1952 budget the position improved.[224] In short, unlike the 1947 convertibility, the reopening of the market did not trigger a serious currency crisis, despite it being a step towards greater openness in international markets. Another way to assess the impact of the reopening is by looking at the valuation of sterling in the free offshore markets. The BIS reported the situation of bank note markets in Switzerland every day.

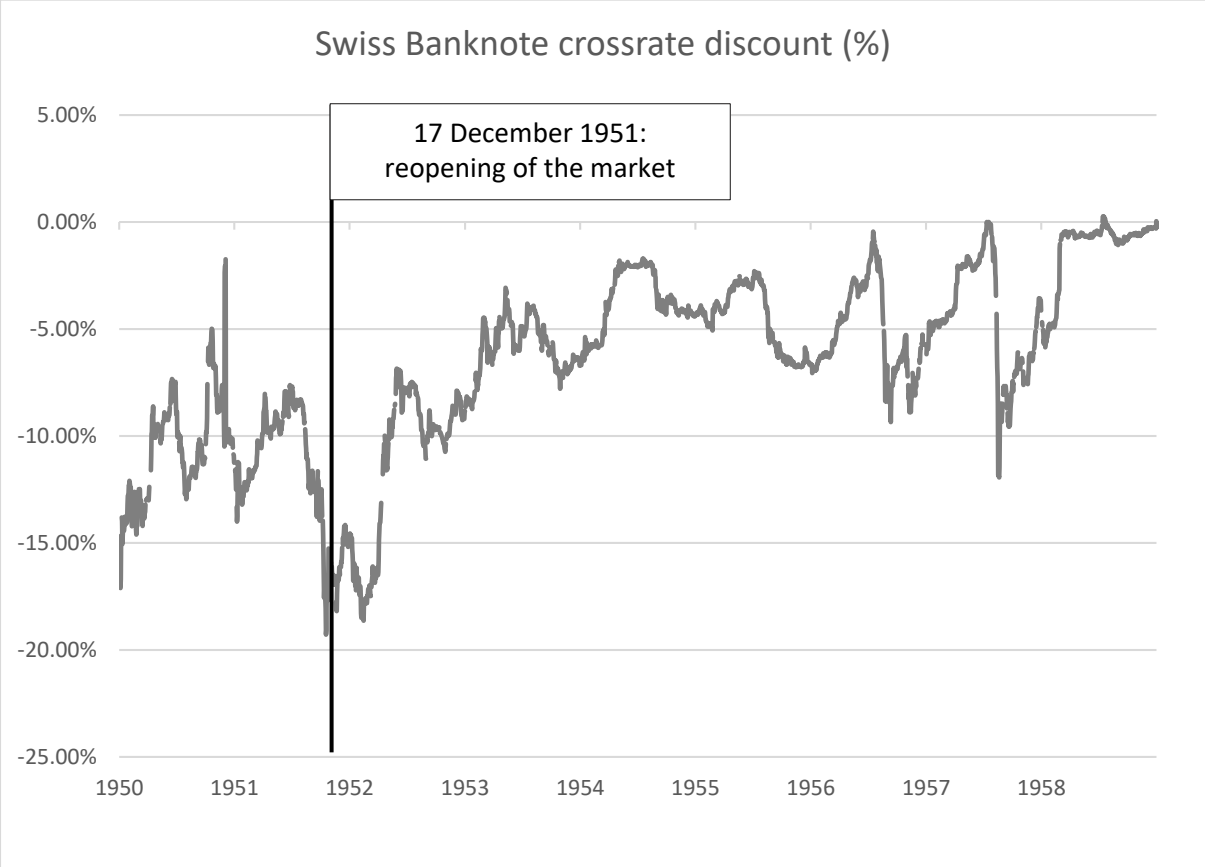

Figure 23 Discount on the sterling/dollar bank note cross-rate

Source: Swiss National Bank.

[224] BIS, Annual Report,1952 (1 April 1951-31 March 1952), 9 June 1952, (Basle: BIS).

Figure 23 shows cross-rates for bank notes in Switzerland as used previously. Instead of plotting the actual exchange rate, the figures present the difference between the spot rate in London and the Swiss bank note cross-rate. When the premium is close to zero, there is no incentive to transport cash to Zurich for speculation.

During the 819 days after the 1949 devaluation to the reopening of the market, the average black market rate was $2.49/£, presenting an average discount of 11% against the official parity. In the same period, the average bank note rate was $2.57/£, an average discount of 8%. Thus, after the market reopened, the discount decreased. The data do not, however, offer any statistically significant structural break at the date the market reopened. This makes sense as the market constantly fed on new information and it is unlikely that the reopening came as a surprise. Restoration of convertibility in 1958 finally reduced the discount in this market almost to zero.

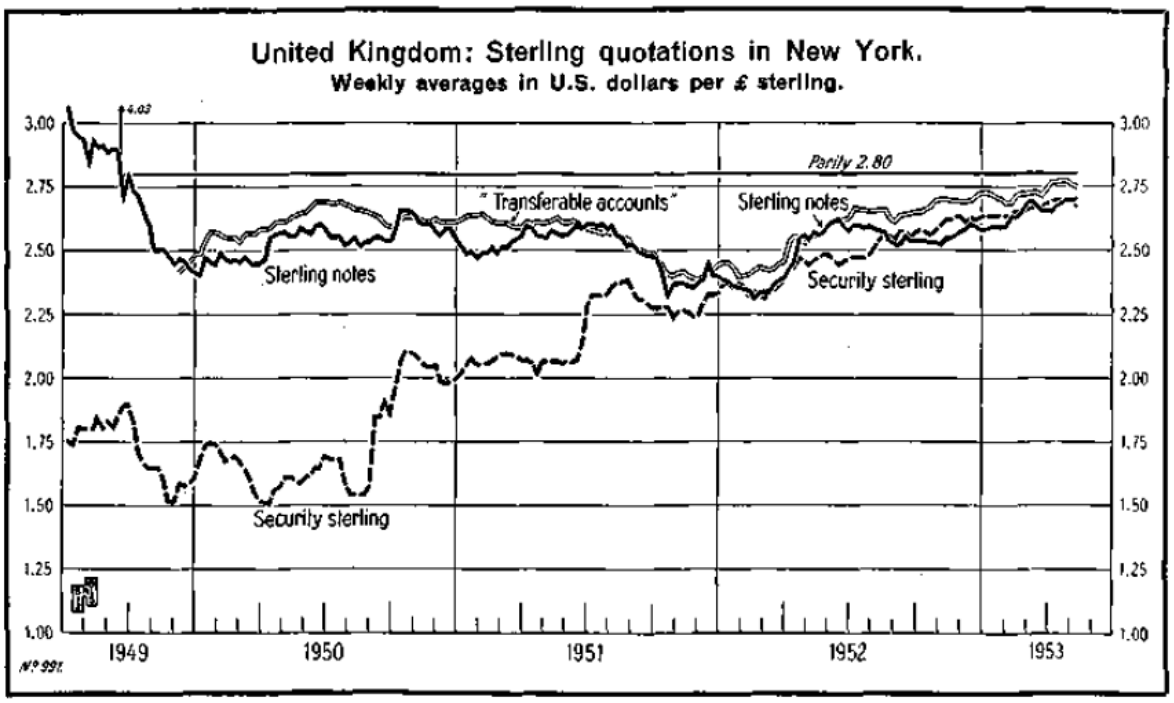

Figure 24 Transferable sterling, security sterling and sterling notes

Source: BIS Annual Report 1953, 6.

Beyond the cross-rate presented here, the BIS also gathered information on different sterling rates. Figure 24 is taken from the 1953 BIS report and presents the discount on different types of sterling, including security sterling. As can be seen, the different sterling rates converged at the end of 1951, when the London foreign exchange market reopened. All the rates also moved closer to the $2.80/£ official parity. Both convergence and appreciation of these alternative rates show how the market reopening had a positive impact on the credibility of sterling.

Despite the relative success of the reopening of the market, officials at the Bank and the Treasury were worried about mounting pressure on reserves early in 1952 (see Figure 19 earlier). This led to debate about the introduction of floating in the form of the ROBOT scheme. The scheme was named after its main advocates (Leslie Rowan and Otto Clarke from the Treasury and George Bolton from the Bank). The scheme has received considerable attention in the literature despite never being adopted.[225] The idea was to float the pound immediately while still blocking some large sterling balances in the UK and abroad.[226] The float would have been controlled within bands kept secret from the public.[227]

Once the ROBOT plan failed to be implemented, it was followed at the end of 1952 by 'the collective approach' to convertibility.[228] The 'collective approach' was discussed during several Commonwealth conferences at the end of 1952 and later with the American administration.[229] The idea was to make major currencies convertible simultaneously with financial support from the US. Howson notes that the 'only short-term result was to feed

[225] Peter Burnham, *Remaking the Postwar World Economy - Robot and British Policy in the 1950s* (London: Palgrave Macmillan), accessed 18 May 2018; Cairncross, *Years of Recovery*, Chapter 9; Capie, *The Bank of England*, 147–49; Fforde, *The Bank of England and Public Policy, 1941–1958*, Chapters 6b and 6c; Schenk, *The Decline of Sterling*, 102–15; Schenk, *Britain and the Sterling Area*, 114–19.
[226] Susan Howson, 'Money and Monetary Policy since 1945', in *The Cambridge Economic History of Modern Britain: Volume 2*, ed. Roderick Floud and Paul Johnson, 2nd edition (New York: Cambridge University Press, 2014), 149.
[227] Capie, *The Bank of England*, 147.
[228] Schenk, *Britain and the Sterling Area*, 119–24.
[229] Howson, 'Money and Monetary Policy since 1945', 149–50.

rumours which weakened sterling in the foreign exchange markets and obliged successive chancellors to disclaim all intentions of letting sterling float'.[230] After the ROBOT plan and the 'Collective Approach' both failed, no new attempts to float were made until after the 1967 devaluation.

If floating was never put in place, the reopening of the market remained an important step towards the liberalisation of sterling, in line with other European currencies. US officials were optimistic; IMF officials, however, were more sceptical about completely freeing the forward market. Unlike previous liberalisation attempts such as 1947, the reopening of the foreign exchange market did not precipitate a crisis and generally improved the situation for market participants. The international credibility of sterling improved, and for customers in London a freer market meant lower transaction costs.

2.4 Bank of England intervention during the Bretton Woods period: a national or international policy?[231]

With the opening of the London foreign exchange market in late 1951, the Bank of England took an active role in managing the exchange rate. This was Britain's responsibility as a signatory of the Bretton Woods agreement. It had to keep the sterling–dollar exchange rate within a 1% band above and below the official parity. Although this was a national responsibility, as the Bretton Woods system became less stable, maintaining sterling parity started to have international repercussions. The US became ever more aware that a sterling devaluation could trigger a run on the dollar and threaten the whole system; if sterling as a reserve currency failed, so could the dollar.[232]

[230] Ibid. and see also Fforde, *The Bank of England and Public Policy, 1941–1958*, chapter 7.
[231] Part of the research presented in this section has been published as a working paper in *Economic and Social History*.
[232] Coombs, *The Arena*.

This subsection reviews how the Bank of England managed sterling after the opening of the foreign exchange market in London in 1951. It presents a new database on Bank of England intervention and assesses the performance of the Bank in defending sterling during the Bretton Woods period. Analysis of the database highlights that the pressure on the Bank to intervene increased following convertibility in 1958. Using a reaction function, I also demonstrate that the Bank of England lagged behind the times as it failed to embrace intervention on the forward market, which the Federal Reserve used as its main intervention tool. Finally, results from an event study show that intervention was more often unsuccessful than not.

Bordo, Schwartz and Humpage have written on US intervention in the foreign exchange market.[233] They argue that US intervention was an effective short-term remedy during the Bretton Woods period, delaying the collapse of the system. British intervention, however, has received no more than sporadic attention in the literature. Bordo, MacDonald and Oliver wrote the first econometric paper on foreign exchange market intervention for the UK during the sterling crises between 1964 and 1967.[234] They argue that Britain maintained the peg with the dollar mainly thanks to loans and external help, such as swap contracts and international rescue packages.

The Bank mainly intervened in the dollar/sterling market, with the dealers' reports registering negligible intervention in the Canadian dollar and French franc in the early 1950s and sporadic mention of Deutschmark intervention in 1957.[235]

[233] Bordo, Humpage and Schwartz, *Strained Relations*.
[234] Michael D. Bordo, Ronald MacDonald and Michael J. Oliver, 'Sterling in Crisis, 1964–1967', *European Review of Economic History* 13, 3 (1 December 2009), 437–59.
[235] Foreign exchange and gold market reports (dealers' reports), various dates, London, Bank of England Archives, C8.

2.4.1 Bank of England intervention in the foreign exchange market

The Bank of England was active in the markets every day, as recorded in the dealers' reports. The goal of intervention was two-fold: to keep the exchange rate within the Bretton Woods bands (for example, $2.78–2.82/£ in 1949–67); and avoid 'undue fluctuations in the exchange value of sterling'.[236] This second point derives from the Finance Act 1932 and is a woolly definition of maintaining 'orderly' markets. In this dissertation, this practice is referred to as 'housekeeping'. The concept of 'orderly markets' was not based on an economic model and is unclear. The goal of keeping markets tidy was a recurring theme at the Bank and can also be found in the gold market (see section 5 of this Chapter) and the money market. For the money market, Capie notes how, in pursuing order, the Bank 'tried to influence expectations and engaged in psychological warfare'. It also gave 'dark hints and by a variety of means nudged or indicated or otherwise tried to suggest the outcome it wanted'.[237]

Another concern was how to keep the market liquid: this was one of the Bank's goals. The Bank's approach, however, lacked any economic theory and was mainly based on the gut feeling of its senior traders.

Figure 25 illustrates the Bank's monthly net dollar intervention. This represents dollar purchases (positive numbers) and sales (negative numbers) in the market every month. For example, the November 1956 Suez crisis stands out as the highest sales month. Monthly figures show trends over several months when the Bank either managed to increase its reserve position continuously, as, for example, after November 1957, or periods of constant pressure on the pound, for example, from 1954 to 1957. Daily figures, however, present much more volatility.

[236] Finance Act 1932, (London: HMSO, 1932).
[237] Capie, *The Bank of England*, 309.

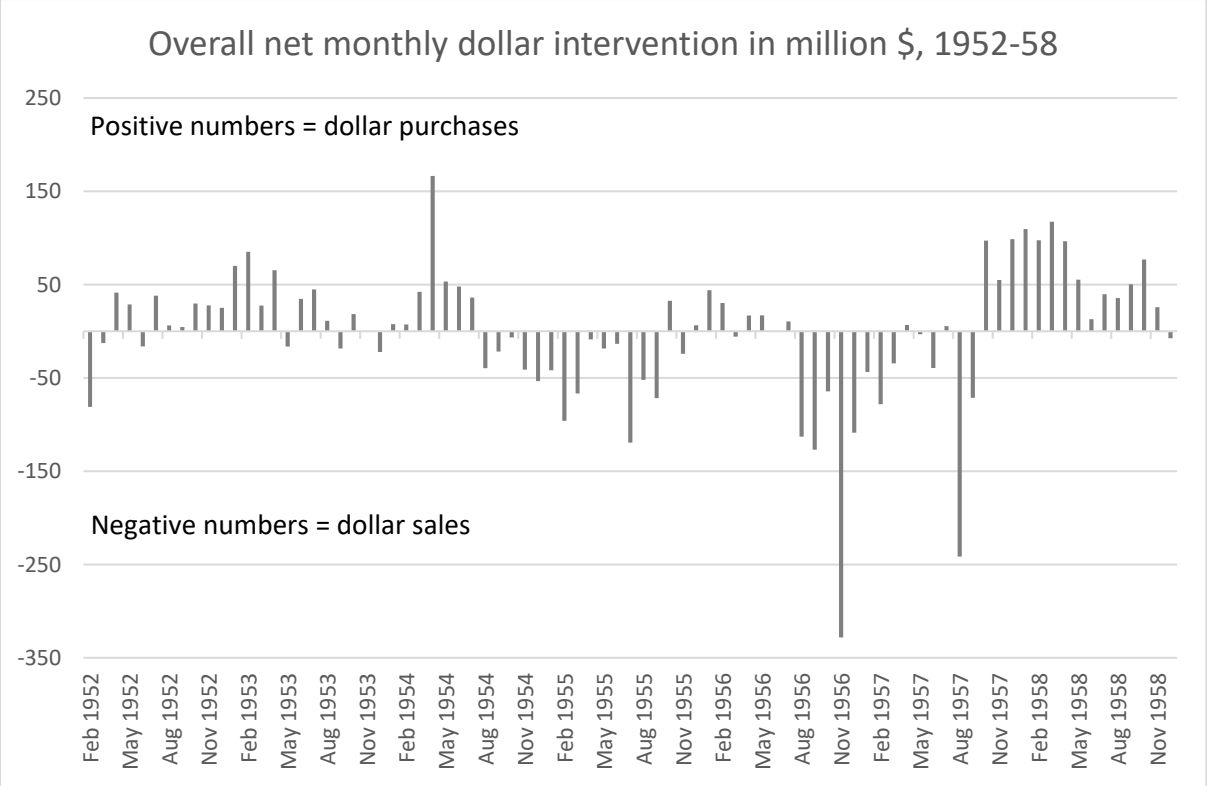

Figure 25 Overall net monthly dollar intervention, 1952–8

Source: Dealers' reports (C8).

To understand a typical day in the dealers' room better, an outsider view is useful. In 1961, the Bank of France sent M. Gouzerh to spend five days at the Bank of England. He recorded that: 'the information reported has not been communicated by the Bank of England, but are the results of observations I made.'[238] His report offers a detailed insight into the day-to-day business of the Bank and gives estimates of operations and a description of processes. This was a time of central bank cooperation and the French observer was welcomed. However, mistrust remained and the Bank wanted to keep some of its trade secrets. Gouzerh reported that he was asked to leave the dealing room every day just before 5 pm, under the pretence that he

[238] The original reads: 'Les renseignements consignées ci-dessous ne m'ont pas été communiqués par la Banque d'Angleterre, ils sont le résultat d'observations. 'Extract of a letter from M. Gouzerh staying at the Bank of England to M. Floch', 19 May 1951, Paris, Archives of the Bank of France, 1495200501/564.

would disturb the dealers as they were busier then. He noted that 5 pm was the time when heavy sterling sales from the US started.

The intervention orders were given during business hours by telephone to four retail or commercial banks: Westminster, Lloyds, National Provincial and Société Générale. Westminster received the bulk of the orders. The goal was either to prevent the exchange rate from depreciating too quickly or to encourage or amplify an appreciation. The dealers, according to Gouzerh, feared both the opening of the market in Paris in the morning and the opening of the New York market at 3 pm. The Bank of England usually gave sterling a final push in the last half hour of trading before handing over the responsibility for intervention to the New York Fed in the evening. The Fed's operations were monitored by a 'principal' at the Bank of England who would stay in touch with New York until the market closed. The French observer estimated that during the five days he spent at the Bank, dealers intervened in more than $150 million.[239]

Another document shows how the Bank viewed its role in the market. Before the October 1959 general election, the Bank prepared a foreign exchange intervention plan. It reads:

> So long as the outcome of the election remains unclear, confusion in the exchange market must be expected, some operations one way, some another. In that event we will endeavour to maintain relative stability in the sterling/dollar rate until the results become more apparent, aiming provisionally at something like 2.79¾–2.80¾, i.e., a wider fluctuation than one normally sees during the day.[240]

After the election, the Bank had two scenarios in mind. In the event of downward pressure the Bank would 'not offer much resistance but let the rate fall quite quickly to say,

[239] Extract of a letter from M. Gouzerh staying at the Bank of England to M. Floch, 19 May 1951, Paris, Archives of the Bank of France, 1495200501/564.
[240] Contingency plan, the exchanges – Friday, 9th October, 8 October 1959, London, Archive of the Bank of England, C43/32.

2.78 1/16, testing the market periodically on the way down. There would be no point in spending much on the way down, which would be expensive and encourage speculation against the pound. Later, when election influences had subsided, we would examine the possibility of bringing about an improvement in the rate.' [241] In the event of upward pressure the Bank 'would let the rate go over 2.81 fairly easily; then we would begin to take in dollars on a rising market. If the demand proved to be large we would let the rate go to the upper limit.'[242]

This highlights the dual strategy the Bank had: in uncertain markets, maintain 'relative stability'; when the pound was falling, the Bank would let the price reach a new equilibrium before trying to influence the direction of the exchange rate once more. What emerges from these extracts is the 'cookbook' nature of intervention. The Bank treated fundamental economic variables as exogenous to its intervention decisions as they could not adjust fundamentals; it could do no more than try to influence the Treasury or government. The Bank did not consider devaluation or changes in interest rates as options and often had to intervene in spite of the fundamental value of the currency.

Another feature during that period was that intervention was covert and had little signalling value for the market. Current literature stresses that a central bank can lead the market with clear signalling, for example, when fundamental economic factors become fuzzy after an election or a global shock.[243] The Bank of England, however, did not make public its interventions. Instead, it preferred surprise and changing tactics to try to win over the market. This sometimes worked as the reserves of the Bank were sizeable in comparison to the market. This is no longer the case.

[241] Ibid.
[242] Ibid.
[243] Lucio Sarno and Mark P. Taylor, 'Official Intervention in the Foreign Exchange Market: Is it Effective and, if so, How Does it Work?', *Journal of Economic Literature* 39, 3 (2001), 839–68.

Changes in tactics are illustrated by the following intervention instructions given by Bridge to the Federal Reserve: 'I shall ask you to go into the market after lunch. … Don't go before lunch. I thought it wise to change tactics a bit. It is a good thing.'[244] These instructions show how Bridge was changing strategies every day to try to surprise the market, as opposed to trying to guide the market (as central bankers tend to do today). Bridge was at the heart of the Bank's foreign exchange strategy and he saw it as a game in which he played to try to fool or outsmart the market. Capie argues that this was one of the reasons why the Bank was so backward: 'One of the principal failings in the operation as far as the Bank was concerned was their obsession with psychological warfare. Their pride in market skills and the lack, for so long, of serious economic input contributed to a concentration on manipulating the market.'[245]

The Bank intervened in several dollar markets. The dealers' reports offer a detailed intervention classification, which is broken down by different types of market in Figure 26. The figure underlines the fact that the bulk of interventions was made in the spot market, accounting for 72% of the total dollar amount spent during the Bretton Woods period. 89 per cent of interventions (72 + 17) were made in the spot or forward London market. Overnight interventions, representing 11% (9 + 2) were in New York and 0.5% of the overall amount spent during the Bretton Woods period was mainly in Switzerland in transferable sterling markets.[246]

[244] Telephone conversation with Mr. Bridge, Bank of England at 11:15 am, H. L. Sanford to file, 10 August 1956, New York, Archives of the Federal Reserve, box 617015.
[245] Capie, *The Bank of England*, 243.
[246] Even if Switzerland was not a 'transferable sterling' country, it offered a transferable dollar/sterling market. Dealers were monitoring rates in this market as can be seen in their reports. Percentages are rounded up and therefore do not add up to 100%. The comparison for the whole period is biased because transferable sterling interventions occurred only between February 1955 and December 1958.

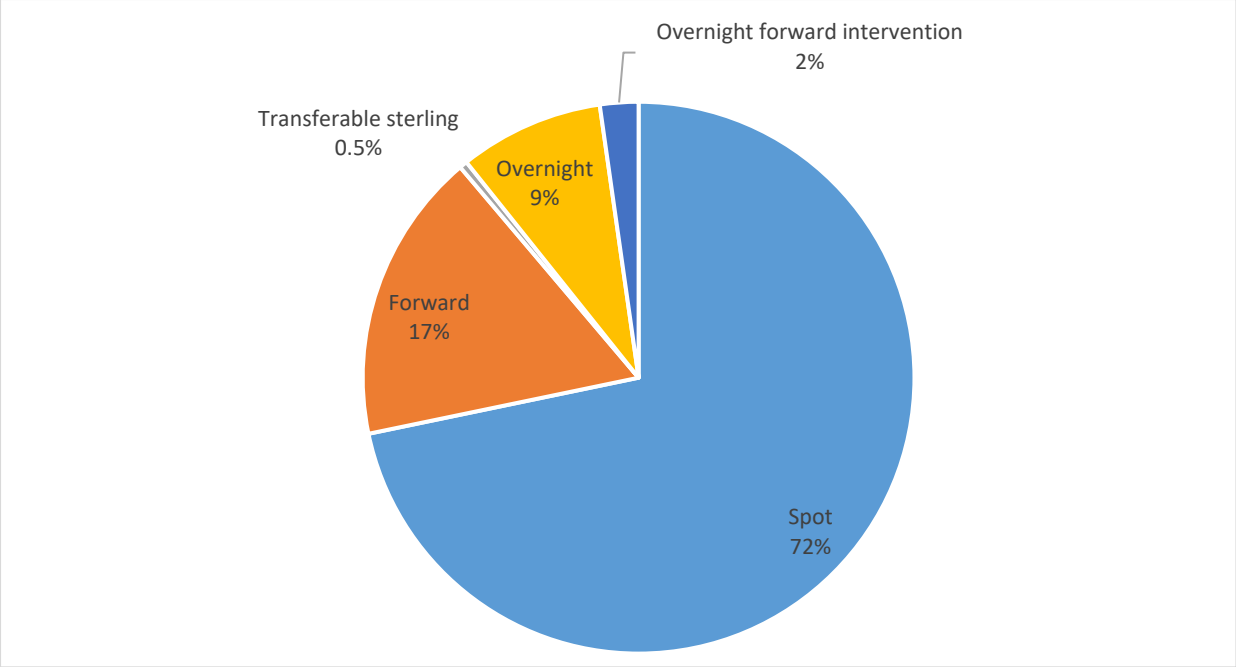

Figure 26 Total dollar sales by type, 1952–72

Source: Dealers' reports (C8).

The Bank was unfamiliar with the forward market. This reflected a general backwardness and rigidity when it came to defending UK currency. While the Federal Reserve almost exclusively used forward intervention,[247] the Bank was still struggling to understand this market fully and leverage it to manage sterling. Reporting on a conversation with Earland and Preston at the Bank, Bodner was surprised to learn about 'the difficulties that they [the Bank] seem to find in narrowing the forward discount'.[248] According to Bodner, 'it seems clear from this conversation that there is, in fact, no technical reason why the Bank of England could not narrow the forwards sufficiently to create an incentive in favour of sterling.' He continued: 'The real limitation is the Bank of England's reluctance to take on a very large additional amount of forward commitments and their fear that this is what would result from any attempt to significantly narrow the forward discounts.' The Radcliffe Report also stresses that

[247] On the Federal Reserve intervention policy, see Bordo, Humpage and Schwartz, *Strained Relations*.
[248] Telephone conversation with Messrs Earland and Preston of the Bank of England at 8:50 a.m., Bodner to file, with copy to Coombs and 11 others, 23 October 1967, New York, Archives of the Federal Reserve, box 617031.

‘operation in the forward market would not be an effective method of countering speculation against the pound’.[249]

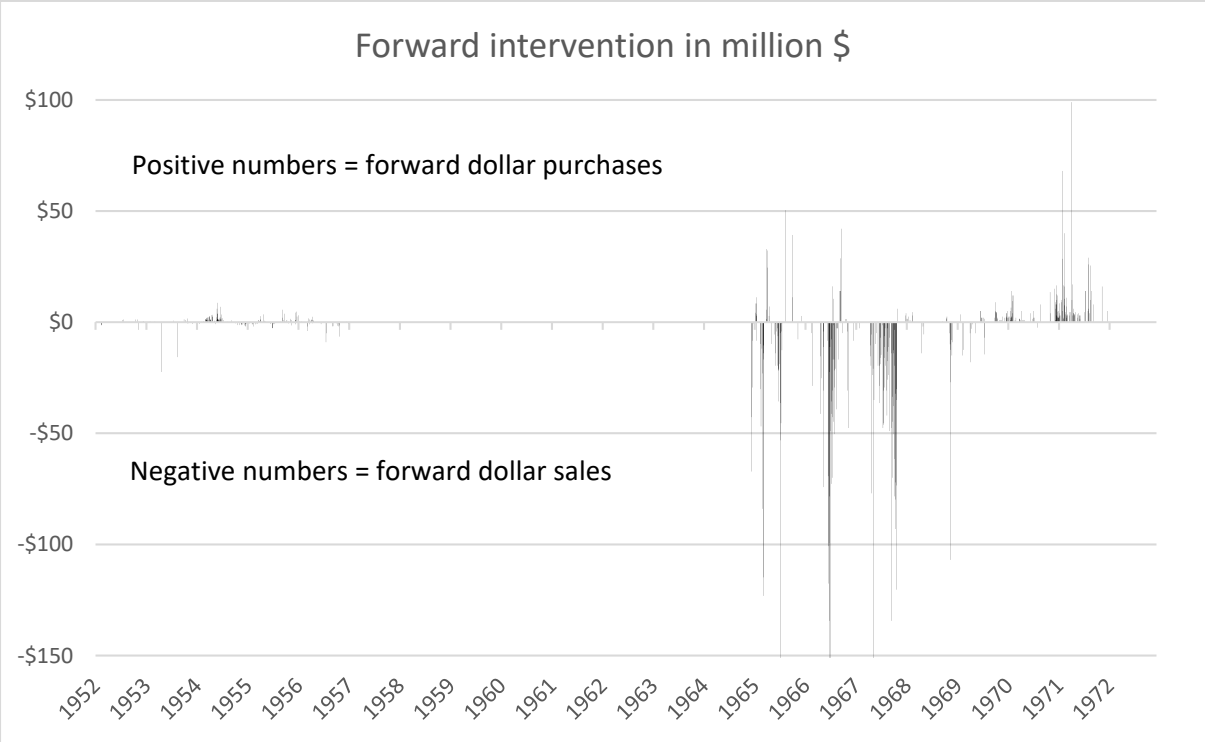

Figure 27 Forward market intervention

Source: Dealers’ reports (C8).

Figure 27 shows daily forward operations from 1952 to 1972. It seems that the Bank only seriously bought forward sterling during the long sterling crisis (1964–7). The Bank reacted strongly to the 1964 general election, won by the Labour Party, and the ensuing following crisis, which ‘called for the deployment of every available technique, and forward intervention was one of these’.[250] After a hesitant start, however, the Bank drastically increased its activity in the forward market, so much so that, before the 1967 devaluation, its oversold position stood at $7183 million.[251] At this point, the Bank wanted to back out of its outstanding

[249] The Radcliffe Report, para. 707, 257.
[250] Capie, *The Bank of England*, 205.
[251] Ibid., 247.

forward position but doing so would have signalled an imminent devaluation and triggered further speculation. Capie notes that experience gained in 1964–7 had scarred the Bank and Treasury, which were consequently reluctant to engage in forward intervention in the 1970s.[252]

British reluctance was partly due to Governor Montagu Norman (1920–44). Norman had castigated the forward market as 'dominated by speculators' and called it an 'anathema' for the Bank.[253] Only occasionally did the Bank intervene in this market during Norman's governorship, for example, in 1926.[254] Immediately after the opening of the London forward market, Knoke asked: 'Are you operating officially in the forward market?' to which Gurney of the Bank of England replied: 'No, we are not touching the forward market at all.'[255] The word 'touching' is quite strong in this context and highlights the Bank's reluctance to operate in this market. Its refusal to intervene in the forward market seemed to be based mainly on tradition more than any valid economic argument.

2.4.2 Overnight operations and cooperation with the Federal Reserve

The literature often portrays the Bretton Woods period as the peak of central bank cooperation.[256] In practice, however, exchanging information and working hand in glove were longer processes for the Federal Reserve and Bank of England. This subsection argues that the 1950s saw cooperation slowly unfold, with the Bank of England reluctant to share information. New evidence is provided derived from archival records of telephone conversations of the issues that arose.

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[252] Ibid., 372.
[253] Richard Sidney Sayers, *The Bank of England, 1891–1944* (Cambridge: Cambridge University Press, 1976), 420.
[254] Bordo, Humpage and Schwartz, *Strained Relations*, 36.
[255] Telephone call from Mr. Gurney from the Bank of England to Mr. Knoke 11:35 a.m., 18 December 1951, New York, Archives of the Federal Reserve, box 617031.
[256] For example, Borio and Toniolo, 'One Hundred and Thirty Years of Central Bank Cooperation: A BIS Perspective'; Toniolo and Clement, *Central Bank Cooperation*.

In 1951, when reopening the foreign exchange market, the Bank gave the New York Fed instructions 'to operate for us at the official limits, i.e., to buy sterling in the New York market at 2.78 and to sell it at 2.82'.[257] But between the bands, the Bank of England intervened through other third parties in North America to make its operations more secret. The Bank of England's main concern was that Fed dealers were not 'regular operators in sterling nor are they what we would regard as "in" the market' and that 'when they do intervene the whole market appears to be immediately aware' of this.[258] Third parties included the Bank of Canada. In 1956, the Fed became concerned that the Bank of England would use the Bank of Canada in New York instead of the Fed and wrote to the Bank to complain. The Bank of England wanted the operations to appear like genuine demand, showing the strength of sterling and not demand fabricated to support a weak sterling. The Bank of Canada was a natural player in New York and so made market participants less suspicious that the Bank of England was behind the operations. In theory, bank secrecy meant that any broker operating for a third party would withhold the identity of that third party (this applied to central bank dealers as well). In practice, however, dealers would share information and who was buying and selling would quickly become known to everyone. Introducing a third party such as the Bank of Canada added another tier making it less obvious who was behind the orders, at least so the Bank thought. The issue was then discussed at length between the two central banks to try to channel British intervention in New York through the Federal Reserve.

This issue was one example of the difficulties experienced in the 1950s for the two central banks. Another issue arose in the mid-1950s due to the Bank of England's reluctance to share foreign exchange market intervention with the Federal Reserve. The Fed, in telephone

[257] 'Aide Memoire for the Governor – Sterling Operations in the New York Market', 25 May 1956, London, Archives of the Bank of England, C43/319.
[258] Sir George Bolton's letter of 2nd October, memorandum sent to Parson and Hawker with a copy to Tansley and Bridge, 15 October 1956, London, Archive of the Bank of England, C43/319.

call after telephone call, tried to get intervention figures from the extremely reluctant Bank. This was a legitimate request as the Fed also operated at the other end of this market and could have used the information to everyone's benefit. In answer to Sanford's request for intervention figures in 'round numbers', Bridge answered, 'it was less than we thought it would be in advance'. This forced Sanford to guess: 'Would $40 million sound like a reasonable figure?' to which Bridge answered, 'Rather on the high side'.[259] In 1955–6 these exchanges took place frequently, and from 1957 the Bank began to share more information on its interventions. This indicates more cooperation than in the interwar years when such exchanges did not occur, but highlights the reluctance of the Bank to cooperate in full.

In the late 1950s, the Federal Reserve and the Bank of England were talking about the foreign exchange on most days. In these telephone calls, for which the New York Fed has kept records, a progressive institutional and personal integration between the two institutions can be seen. Such proximity and open collaboration would become critical in the 1960s when sterling was in almost constant crisis and when the US started to play a more important role in the fate of the British currency.

2.4.3 Why did the Bank of England intervene in the foreign exchange market?

Why did the Bank of England intervene? Its mission was to keep the London spot rate under control, but what about the other exchange rates?[260] This subsection shows how the Bank reacted to movement in the various sterling rates. This is done by running a reaction function on the new intervention dataset presented above.

[259] Telephone conversation with Mr. Bridge, Bank of England, at 11:34 a.m., Sanford to file, 15 March 1955, New York, Archives of the Federal Reserve, box 617031.
[260] See subsection 3.4.

In order to understand how central banks respond to exchange rate fluctuations, economists have estimated reaction functions.[261] Klug and Smith determined a reaction function of the monetary authorities and found that the Bank of England intervened in reaction to variations in the transferable sterling exchange rate during the Suez crisis. This shows that the Bank was concerned not only about exchange rates in London but also abroad. Bordo et al. used a reaction function to study foreign exchange market intervention for the UK during the sterling crises of 1964–7.[262] They argue that the Bank of England reacted to the lower band of the exchange rate as well as within the Bretton Wood bands. In a fixed exchange rate system with multiple exchange rates, a reaction function can be used to determine which exchange rate was influencing the monetary authorities' policies.

When reading the dealers' reports, it seems clear that the Bank of England dealers intervened to avoid sterling depreciation against the dollar (also known as leaning against the wind). The dealers monitored both the official exchange rate in London and transferable sterling in New York and Zurich.[263] The reaction function helps determine which of these rates was more important in shaping the Bank's policy decisions.

The reaction function relates several exchange rates to Bank of England intervention. To reduce the issues associated with multicollinearity, the explanatory variables which relate to exchange rates are the differences from the lower bound instead of being actual exchange rates. By taking the difference from the low band (2.78 until 1967, then 2.38 after the devaluation), the right-hand side variables become much less correlated than if they are used

[261] For a review of the literature on reaction functions, see Hali J. Edison, *The Effectiveness of Central-Bank Intervention: A Survey of the Literature after 1982*, vol. 18 (Princeton, NJ: Princeton University Press, 1993), 37–42; Christopher Neely, 'An Analysis of Recent Studies of the Effect of Foreign Exchange Intervention', Federal Reserve Bank of St. Louis working paper (1 June 2005), 2–3; Takatoshi Ito and Tomoyoshi Yabu, 'What Prompts Japan to Intervene in the Forex Market? A New Approach to a Reaction Function', *Journal of International Money and Finance* 26, 2 (March 2007), 193–212.
[262] Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967'.
[263] Photographic evidence of the dealers' room shows that bank note rates in Zurich were displayed on a board for dealers to consult as they intervened by telephone.

as sterling/dollar exchange rates directly. The Augmented Dickey-Fuller Unit root test confirms that all series are stationary when taken as the difference from the floor. Intervention data are stationary as they are.

Transferable sterling is relevant only in the period before 1958 as it later disappeared as a discrete sterling rate. Because the dealers' reports start reporting transferable sterling from 1953, a reaction function for the sub-sample from 1953 to 1958 is estimated (regression 1 in Table 6). Below is the reaction function used in this paper. It is similar to other reaction functions in the literature.[264]

$$I_t = \beta_0 + \beta_1 I_{t-1} + \beta_2 \Delta S_{t-1} + \beta_3 \Delta_{low} S_{t-1} + \beta_4 \Delta_{low} S_{t-1}^{TRANS} + \beta_5 \Delta_{low} S_{t-1}^{NOTE} + \beta_6 \Delta_{low} S_{t-1}^{3FWD} + \varepsilon$$

where *It* is intervention in dollars taking positive value for purchase of dollars and negative value for sales of dollars, I_{t-1} is lagged intervention to allow for autocorrelation, and $\Delta S_{t-1}$is the difference between the exchange rate at days t-2 and t-1, which is used in most reaction functions. The remaining four terms are the difference between the Bretton Woods lower band (2.78/2.38) and the four exchange rates: London spot rate, transferable sterling, Swiss bank note cross-rate and the three-month London forward rate. Three regressions are run for the full sample, one before and one after the introduction of convertibility in December 1958. The results are presented in Table 6.

[264] This function is inspired by Ito and Yabu, 'What Prompts Japan to Intervene in the Forex Market?'; Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967'.

Dependent variable: Bank of England intervention

	(1) Pre-convertibility including transferable sterling (1953–8)	(2) Post convertibility to devaluation (1959–67)	(3) Whole sample (1952–72)
Intercept	-3.35 (0.63)***	-9.81 (1.97)***	-2.89(1.36)**
London spot sterling	171.01 (33.97)***	326.08 (97.23)***	171.62 (82.98)**
Transferable sterling	28.31 (9.75)***		
Three-months forward	0.95 (25.67)	217.37 (85.90)**	47.49 (57.51)
Swiss offshore bank note cross-rate	3.98 (3.33)		5.30 (3.22)*
Lagged intervention	0.35 (0.07)***	0.38 (0.03)***	0.35 (0.03)***
Previous day difference	513.10 (162.90)***	-260.70 (55.85)***	-283.39 (70.97)***
Adjusted R^2	0.321	0.258	0.194
Observations	1000	2249	4966

Table 6 Sterling reaction function regressions

Note: Standard errors are reported in parenthesis and are robust to heteroscedasticity and autocorrelation using heteroscedasticity and autocorrelation-consistent (HAC) estimators, using a Newey-West correction.

*** signifies statistical significance at the 1% level; **signifies statistical significance at the 5% level; and * signifies statistical significance at the 10% level.

The Bank of England was reacting to an increase in the spot exchange rate by buying dollars and to a decrease by selling dollars. This was expected and is corroborated by qualitative evidence from the dealers' reports. A decrease in the spot rate of $0.01 per sterling (for example, $2.80 to $2.79/£) would have led to the Bank spending $1.71 million on any given day, other things remaining constant. Post-convertibility, the Bank would spend $3.26 million for a similar decrease in the spot rate, just short of double the amount before convertibility. The fact that lower exchange rates led to more intervention was expected and is found to be the case in all three specifications. The monetary authorities also reacted to transferable sterling before the introduction of convertibility. This is consistent with findings by Klug and Smith during the Suez crisis, though they find transferable sterling to have a greater impact.[265] For the pre-

[265] Adam Klug and Gregor W. Smith, 'Suez and Sterling, 1956', *Explorations in Economic History* 36, 3 (July 1999), 181–203.

convertibility sample, the coefficient for the transferable sterling exchange rate is significant, but six times smaller than that for the official London sterling rate. This is consistent with evidence from daily telephone conversations between the Fed and the Bank.[266] During most of the period between 1952 to 1972, Bank of England and New York Federal Reserve officials would talk at least once a day to discuss market conditions, including the state of transferable sterling in New York. The Bank prioritised the status of the official spot rate over other exchange rates.

What is interesting is that changes in forward rates triggered no reaction pre-convertibility as the coefficient is not significant (regression 1). Post-convertibility, forward rates seem to have played a role but the coefficient is significant only at 5% (regression 2). The absence of significance in the forward market in regressions 1 and 3 highlights the reluctance of the Bank to engage in the forward market, as shown earlier. Finally, a more surprising result is that the offshore bank note cross-rate in Switzerland does not seem to have influenced monetary authorities' decision making, possibly because this is an artificial cross-rate and not a quoted rate.

2.4.4 Performance of the Bank of England on the foreign exchange market

The Bank of England spent most days in the foreign exchange market. How efficient was this intervention? There is a vast literature on measuring foreign exchange intervention effectiveness. This subsection analyses how successful the Bank's interventions were by using the intervention data presented earlier. It also assesses what made interventions successful. This

[266] Telephone conversations between Bridge and Sanford, New York, Archives of the Federal Reserve, boxes 617015 and 617031.

is relevant not only to the history of the Bank, but also is of interest to the literature on intervention and to central banking professionals.

I use a simple daily indicator to observe exchange rate behaviour the day after an intervention. The indicator tests whether the exchange rate appreciates after a dollar sale or depreciates less than on the previous day. The limitation of the indicator is that it captures only the short-term effect of intervention and does not offer information over a few days. It is inspired by an indicator developed by Humpage and applied by Bordo, Humpage and Schwartz to the US case.[267] In order to assess the Bank's performance in this period, when the aim was to defend a clearly defined exchange rate target, the focus should be on dollar sales as the Bank sold dollars for the most part to prevent sterling depreciating or to make it appreciate. Any of these outcomes meant that the intervention was successful.

Three success criteria (SC) are employed in Table 7: exchange rate reversal (SC1) if dollar sales led to next-day appreciation of the exchange rate; depreciation smoothing (SC2) if selling dollars lessened the depreciation compared to the previous day; and the sum of the two (SC3) which, by combining reversal and smoothing, creates a general measure of success. This last measure encompasses the two main reasons why the Bank would sell dollars on the market, either to smooth a fall or to reverse depreciation of the pound. The test suffers from not being able to establish the counter-factual in the absence of intervention. Hence the Bank could have been intervening on a day when the exchange rate was reversing anyway. This test measures this as a success. However, as the Bank intervened mainly when the market was under pressure, this should provide a reasonable account of the Bank's performance.

[267] Owen F. Humpage, 'U.S. Intervention: Assessing the Probability of Success', *Journal of Money, Credit and Banking* 31, 4 (1999), 731–47; Owen F. Humpage, 'The United States as an Informed Foreign-Exchange Speculator', *Journal of International Financial Markets, Institutions and Money* 10, 3 (1 December 2000), 287–302; Bordo, Humpage and Schwartz, *Strained Relations*.

	Number of sales days	Exchange rate reversal the next day (SC1)		Depreciation smoothing the next day (SC2)		Reversal and smoothing (SC3)	
	days	days	% success	days	% success	days	% success
Pre convertibility (1952-58)	905	239	26%	209	23%	448	50%
Post convertibility (1959-72)	1395	230	16%	269	19%	499	36%
Overall (1952-72)	2300	469	20%	478	21%	947	41%

Table 7 Intervention success

Source: Dealers' reports (C8).

Note: The methodology compares the movement of the exchange rate the day after an intervention. The percentages are success rates.

Table 7 highlights differences in success rates before and after convertibility. Before convertibility, the Bank managed to achieve desired outcomes (appreciation or smoothing) in half the days it sold dollars. The Bank had an impact on the exchange rate the next day every other day. After convertibility, the success rate dropped to 36%, that is to say a success in one in three attempts.

Market conditions became more adverse after convertibility. This becomes clearer when examining the intervention's size. Table 8 presents summary statistics of the Bank's daily intervention, comparing the pre- and post-convertibility period. The data come from the Bank of England dealers' reports. Before convertibility, the Bank spent $2.7 billion in the market; after convertibility it was almost $22 billion. Despite intervening on only 170 days in the forward market after 1959, the Bank still managed to sell a total of nearly $6 billion. Table 8 does not show net interventions but only dollar sales, not purchases. The mean can be read as when the Bank was selling dollars in the market, the average spot sale was $3.8 before convertibility and $31.6 after convertibility, a ten-fold increase.

in $ million	Forward dollar sales		Spot dollar sales	
	1952–8	1959–72	1952–8	1959–72
Mean	1.5	33.6	3.8	31.6
Median	0.8	19.6	1.6	9.8
Maximum	22.4	211.4	54	1229
Minimum	0.1	0.7	0.1	0.5
Std. Dev.	3.0	38.8	5.7	76.3
Sum	137	5707	2681	21,879
Observations	90	170	708	692

Table 8 Bank of England intervention in the spot and forward markets, descriptive statistics
Source: Dealers' reports (C8).

How large was Bank of England intervention compared to overall transaction volume in the sterling/dollar market? To get a better idea, a telephone call report from the Federal Reserve archives mentions a market volume in New York of $47.6–64.4 million a day and $19.5 million in London.[268] It is unclear whether these days are typical or days with unusual trading volumes. But that would put the sterling/dollar trading volume at $67.1–83.9 million between New York and London. Average spot operations were $3.8 million a day before 1959. This would put the average dollar sale by the Bank at around 5–6% of the total market. The maximum sales of $54 million by the Bank during the whole period is around 64–80% of the market size estimates. In other words, on a normal day the Bank was responsible for 5% of the market. During a crisis, the Bank could, if needed, deploy over three-quarters of the market turnover on a given day. Therefore, before convertibility the Bank of England was a sizeable player in the market. Market size figures post-convertibility are not available, but it is likely that the influence of the Bank shrunk. In 2016, as a comparison, the daily foreign exchange market volume for sterling was $649 billion and the total reserve of the UK government was $111 billion. This means that if the government spent all its reserves on one day in 2016, it

[268] Telephone call, H. L. Sanford, 30 April 1954, New York, Archives of the Federal Reserve, box 617031.

would only reach 17% of the market, as opposed to 80%, by only spending $54 million in the Bretton Woods period.[269] This is part of the explanation why the Bank of England largely avoids intervention today.

If the Bank was not always successful, what did make interventions successful? In order to reach a better understanding, I use a probit regression to differentiate which elements contribute to success. This methodology has also been used on modern data by Fratzscher et al. to derive the effect of intervention size and other variables to intervention success. In the regression, I test five variables that could explain intervention success: size of the intervention; exchange rate trend; exchange rate alignment with fundamentals; volatility of the exchange rate; and how far the exchange rate was from the Bretton Woods bands.

The hypothesis for size is that larger interventions are likely to be more successful. The trend is also expected to be important if the pound has been falling for ten days, as it is expected that making it appreciate would be more difficult than if it had been already appreciating for ten days. Volatility, which is likely to indicate stress on the currency, is also expected to make the dealers' task more difficult. Unsurprisingly, the closer to the lower band (Bretton Woods floor $2.78 or $2.38/sterling), the more difficult the intervention. Proximity to the lower band means a currency crisis can be expected, making investors more likely to sell sterling.

Regarding the fundamental value, the hypothesis is that the more the exchange rate is misaligned vis-a-vis its fundamental value, the more difficult intervention is. For example, if poor balance of payments figures have just been published, the fundamental value of the currency is likely to go down, making intervention less successful. It is difficult to measure how far the exchange rate is from its fundamental value. Current literature (mainly focusing on

[269] Daily turnover for the pound today is 12.8% of $5,067 billion or $649 billion (BIS, 'Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets in 2016'.). The reserve data come from the Bank of England as the average for 2016 of the central government all foreign currency total reserve assets by instrument (in $ million) not seasonally adjusted, PQMBAAR.

floating rates) uses three-year moving averages of the exchange rate as it is assumed that this indicates the currency's long-term fundamental value.[270] In the Bretton Woods context, however, moving averages performed poorly in showing fundamental value as the exchange rate is mean-reverting over three-year periods. For this reason, a three-year moving average simply represents the average of the exchange rate during the Bretton Woods period. The average exchange rate from 1952 to 1967 is almost 2.80 (the official parity), indicating that three-year moving averages probably offers no more than weak long-term trends in a fixed exchange rate system such as Bretton Woods.[271]

While moving averages are a poor indicator of the fundamental value of a currency, the forward market offers a better proxy. Svensson argues that within exchange rate bands, the forward rate can indicate the credibility of the currency.[272] As the Bank of England engaged in this market less than in the spot market, it offers an idea of the fundamental value of the currency, even if it is not perfect. In my regression, I use the difference between the spot and the forward rates (the forward premium) as an indicator of the difference of the exchange rate from its fundamental value. The probit equation is modelled as follows:

$$SC_t = \beta_0 + \beta_1 I_t + \beta_2 (S_t - S_t^{3FWD}) + \beta_3 TREND_t + \beta_4 VOLATILITY_{t-t10} + \beta_5 \Delta_{low} S_{t-1} + \varepsilon$$

where *SCt* is intervention success on day *t*, according to reversal (SC1), smoothing (SC2) and smoothing or reversal (SC3). $S_t - S_t^{3FWD}$ is the forward premium. $\beta_3 TREND_t$ is the ten-day trend, computed as a sum of the differences of ten-day exchange rates. $\beta_4 VOLATILITY_{t-t10}$ is

[270] See, for example, Marcel Fratzscher et al., 'When Is Foreign Exchange Intervention Effective? Evidence from 33 Countries', *American Economic Journal: Macroeconomics*, forthcoming.
[271] The mean exchange rate is exactly 2.800219231 using daily data.
[272] Lars E. O. Svensson, 'Assessing Target Zone Credibility: Mean Reversion and Devaluation Expectations in the ERM, 1979–1992', *European Economic Review* 37, 4 (1 May 1993), 763–93.

the ten-day local volatility. $\beta_5 \Delta_{low} S_{t-1}$ is the gap between the exchange rate and the lower band (2.78 or 2.38).

Dependent variable: intervention success (1/0) – Probit regression

	(1) Reversal (SC1)	(2) Smoothing (SC2)	(3) Smoothing and/or reversal (SC3)
Intercept	2.088 (1.09)*	-0.257 (1.18)	0.494 (1.07)
Intervention size	-0.004 (0.001)***	0.002 (0.0009)*	-0.0007 (0.0009)
Spot with past two weeks trend (1/0)	-0.028 (0.08)	-0.903 (0.08)***	-0.575 (0.07)***
Distance from fundamentals (forward premium/discount)	-30.423 (11.43)***	-9.916 (12.23)	-36.698 (11.02)***
Local volatility	-1.093 (0.39)***	-0.061 (0.42)	-0.253 (0.38)
Distance from the Bretton Woods floor ($S_{floor} - S_{t-1}$)	3.806 (4.21)	4.406 (4.17)	1.436 (3.80)
McFadden R^2	0.02	0.09	0.04
Observations	1392 (1106 failures / 286 successes)	1392 (1066 failures / 326 successes)	1392 (890 failures / 502 successes)

Table 9 Intervention success explained

Note: Standard errors are reported in parenthesis and are robust. A Huber/White correction has been applied. *** is statistical significance at the 1% level; ** is statistical significance at the 5% level; * is statistical significance at the 10% level.

The first striking feature in Table 9 is that intervention size has a negative effect on success for the reversal of the exchange rate. The larger the intervention the less likely it is to succeed in changing the direction of the exchange rate. This is probably due to a reverse causality issue, as bigger interventions are made during crises and are therefore less likely to be successful. The biggest intervention in the sample occurred the day before the 1967 devaluation at a point when intervention was unlikely to fool market participants, who were expecting and heavily gambling on a devaluation without the risk of a quick appreciation playing against them. Larger interventions, however, seemed to increase success when the

Bank managed to smooth a depreciation; or, to relate that to the first point, greater interventions do not reverse exchange rates but might be able to smooth depreciation.

If the intervention is going against the trend of the previous weeks, or if it is taking place during a period of volatility, it is less likely to succeed. The distance from the lower band is not significant in any of the regressions.

The forward premium seems to make an impact, but the direction is puzzling. First it is worth noting that during most of the Bretton Woods period, there was a forward discount (meaning that the forward rate was below the spot rate). This shows that currency investors generally had a negative outlook on the British currency. The negative coefficient in the regressions seems to suggest that the lower the forward discount, the more likely interventions were to work. This could be due to higher discounts leading the Bank to intervene with larger amounts (and the data shows a correlation between lower discounts and higher intervention size). But the result remains somewhat surprising.

These results, therefore, need to be read with caution. No clear trends emerge because of the frequency of interventions; the Bank was in the market on more than 80% of the days. Several coefficients are not significant, a result that is in line with similar studies.[273]

To summarise: the Bank was frequently intervening in the market and was reluctant to try innovative approaches. This meant it was not as efficient as other the central banks, such as the Federal Reserve. Another finding is that, after convertibility, Bank of England interventions drastically increased and to finance these, the US needed to give dollar liquidity to the Bank through large swap contracts. This is analysed in Chapter III. The next section now turns to the other market that opened in the 1950s, the London gold market.

[273] Even with a much bigger sample, Fratzscher et al., 'When Is Foreign Exchange Intervention Effective?' have only few coefficients that explain intervention success.

2.5 The reopening of the London gold market in 1954: Sealing the fate of sterling and the international system

Reflecting on his action in the 1960s, Coombs, at the time vice president of the Federal Reserve Bank of New York, wrote that the London gold market 'represented a time bomb resting at the very foundation of the Bretton Woods system'.[274] This section examines how this bomb was set up. The main argument is that US policy-makers allowed the London gold market to reopen without fully understanding what the consequences would be. In the event, it established a direct link between sterling and gold. Thereafter, sterling crises could potentially turn into gold crises and threaten international monetary stability. But in the 1950s, with substantial gold reserves, capital controls and no real debate about the Bretton Woods system, the Fed allowed the UK to open the gold market on the assumption that it was a minor issue. As discussed in Chapter III, the London gold market would eventually play a central role in the demise of the Gold Pool and the creation of a two-tier gold market, which in turn contributed to the end of the Bretton Woods system.[275]

The London gold market reopened on 22 March 1954. This was a major event in the unfolding of the Bretton Woods system. The market had closed at the outbreak of the war in 1939.[276] This hiatus 'deprived the international economy for fifteen years of one of its major institutions', the Bank of England wrote in a later memorandum.[277] The BIS celebrated an 'event which was not only of great potential significance but which also had an immediate influence, since it coincided with steps taken by several countries to normalise their foreign exchange systems'.[278]

[274] Coombs, *The Arena*, 68.
[275] See Chapter III, section 4.
[276] Capie, *The Bank of England*, 158.
[277] Internal draft memorandum, September 1960, London, Archives of the Bank of England, C43/320, 1.
[278] BIS, Annual Report, 1954 (1 April 1953–31 March 1954), 14 June 1954 (Basle: BIS), 144.

London was the central gold market during the Bretton Woods system, but before the nineteenth century the City was not at the centre of the gold trade. Instead, the leading global gold market moved from Genoa to Antwerp, then to Amsterdam before finally being established in London, where it remains today. Despite London's leading role, when the London gold market was not functional other markets took over; these have included, Zurich, Paris and Hong Kong.

During the fifteenth century, African gold was sent mainly to Genoa, as well as other Italian city-states such as Florence, Venice and Milan where it was traded.[279] Florence fixed the price twice a day, a feature that would later be replicated in the London market.[280] Later, Antwerp, a central place of trade in the fifteenth and sixteenth centuries, hosted African gold sales and was an early global market for gold, as well as other commodities.[281] This might not have formally been a central global gold market yet, but it involved the trading of gold globally. In 1596 a default by the Spanish state led to a wave of bankruptcies in Antwerp, which at the time was exposed to Spanish loans,[282] led to Antwerp's slow decline as a global financial centre and reopened the contest for leadership.

Amsterdam took a more prominent role as a financial centre in Europe in the seventeenth and early eighteenth centuries and became the main market for silver and gold bullion. However, the Glorious Revolution of 1688 gave British finance a boost.[283] The shift of the leading gold market went through Moses Mocatta, a gold trader based in Amsterdam, who moved to London in 1671. At first gold was used as a way to pay for Mocatta's diamond

[279] Andrew M. Watson, 'Back to Gold and Silver', *The Economic History Review* 20, 1 (1967), 19.
[280] Timothy Green, *The World of Gold*, second edition (London: Rosendale Press, 1993), 16.
[281] Peter Spufford, 'From Antwerp and Amsterdam to London: The Decline of Financial Centres in Europe', *De Economist (Netherlands Economic Review)* 154, 2 (1 June 2006), 152.
[282] Ibid., 158.
[283] There is an extensive literature on this topic starting with the seminal work by Douglass C. North and Barry R. Weingast, 'Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England', *The Journal of Economic History* 49, 4 (December 1989), 803–32.

business.[284] Progressively, however, gold increased in importance and the Mocattas started a subsidiary gold market in Amsterdam, which would progressively expand.[285] In 1799, the firm of Mocatta was still under the family's control and was now named Mocatta & Goldsmid, the name under which the firm operated during the Bretton Woods period.[286] Soon after the inauguration of the Bank of England in 1694, Abraham Mocatta, Moses' son, became the Bank's sole gold broker.[287]

In 1810, a select committee of the House of Commons surveyed the London gold market because of the 'High Price of Gold Bullion'.[288] With few participants, the market was subject to collusion. Mocatta & Goldsmid was the Bank's only broker until 1840.[289] Later in the century, other brokers were permitted to enter the market. During the mid-eighteenth century, the London and Amsterdam bullion markets were highly integrated, as demonstrated by Pilar Nogues-Marco.[290] However, London took precedence over Amsterdam. The Bank Charter Act 1844 gave the London market an advantage by providing a 'guaranteed market and a minimum purchase price for gold'.[291]

Gold became key in international transactions in the mid-nineteenth century and the Bank of England played a central role in the international monetary system. The rapid increase in countries joining the Gold Standard meant the metal was essential to public finance worldwide. London would at this point play a leading role as a global gold market, being 'the

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[284] Green, *The World of Gold*, 17.
[285] Spufford, 'From Antwerp and Amsterdam to London', 168.
[286] Paul H. Emden, 'The Brothers Goldsmid and the Financing of the Napoleonic Wars', *Transactions (Jewish Historical Society of England)* 14 (1935), 229.
[287] Green, *The World of Gold*, 17–18.
[288] Michele Blagg, 'Gold Refining in London', in *The Global Gold Market and the International Monetary System from the Late 19th Century to the Present: Actors, Networks, Power*, ed. Sandra Bott (Basingstoke: Palgrave Macmillan, 2013), 90.
[289] Green, *The World of Gold*, 18.
[290] Pilar Nogues-Marco, 'Competing Bimetallic Ratios: Amsterdam, London, and Bullion Arbitrage in Mid-Eighteenth Century', *The Journal of Economic History* 73, 2 (June 2013), 446.
[291] Blagg, 'Gold Refining in London', 92.

most liquid exchange for refined gold'.[292] Most newly minted gold was sold in London. The rules of the Gold Standard let gold flow freely in and out of the country. During this period the Bank was the main dealer and acted with four others: Mocatta & Goldsmid, Sharps Wilkins, Pixley & Abell and Samuel Montagu & Co. Broker.[293] Most of these participants remained until the Bretton Woods period, but Rothschild took the place of the Bank of England as market-marker after the First World War. Also, Sharp Wilkins and Pixley & Abell merged and the metallurgical firm Johnson Matthey joined.

1919 marked the creation of the London Gold Fixing which would survive with interruptions until 2014.[294] Fixing was the process of fixing the price of gold once a day. At the start of the Second World War the market was officially closed and would not reopen until 1954.

2.5.1 London's competition in 1954

During the closure of the London market (1939–54) Zurich emerged as a competitor. Other so-called 'free markets' which offered gold priced often in dollars also emerged, notably in Beirut, Bangkok, Cairo, Kuwait, Macao, Milan, Montevideo, Tangier and Hong Kong. The IMF disapproved of these markets as they suggested that the official dollar price of gold was not credible. The Fund feared that these markets could destabilise currencies.[295] In 1950, in a telephone call between the New York Federal Reserve and the Bank of England, Sir George

[292] Stefano Ugolini, 'The Bank of England as the World Gold Market Maker during the Classical Gold Standard Era, 1889–1910', in *The Global Gold Market and the International Monetary System from the Late 19th Century to the Present: Actors, Networks, Power*, ed. Sandra Bott (Basingstoke: Palgrave Macmillan, 2013), 65.
[293] Ibid., 85.
[294] Anthony John Arnold, 'Business Returns from Gold Price Fixing and Bullion Trading on the Interwar London Market', *Business History* 58, 2 (17 February 2016), 283.
[295] Sandra Bott, 'South African Gold at the Heart of the Competition between the Zurich and London Gold Markets at a Time of Global Regulation, 1945–68', in *The Global Gold Market and the International Monetary System from the Late 19th Century to the Present: Actors, Networks, Power*, ed. Sandra Bott (Basingstoke Palgrave Macmillan, 2013), 111; Coombs, *The Arena*, 43.

Bolton estimated that the market in free gold was around $60 million a month ($585 million in 2017 dollars). This represented a turnover of around $2–3 million a day mainly in Montevideo, Paris, Milan and Zurich. Bolton commented on different markets, noting that 'Beirut is just a tunnel in and out of the Middle East' and that 'Hong Kong is not a big factor'.[296] The Bank was aware of these free markets and was watching them closely in cooperation with the Fed. They drained international gold production and were a threat to the official gold price.

Coombs observed that these free markets were mainly involved in private hoarding and did not cater to South African or Russian business.[297] Bott asserted that immediately after the war these markets offered substantial premia on the official gold price. In 1947, Bott reported prices reaching the equivalent of $80 an ounce. This led to arbitrage, as purchases 'were made in New York and Mexico, where the price was around US$43 per ounce. It was subsequently resold in India for pounds sterling at a price equivalent to around US$80.'[298] The BIS calculated that, from 1946 to 1953, out of a global production of $6600 million, one-third was privately hoarded.[299] This put pressure on central banks and could hinder global growth as it limited the amount of fiat currency central banks, mainly the Fed, could issue, as gold was backing the dollar.

Paris was another contender for hosting a global gold market, both because the city had a financial centre and because of the French government's ambitions to be at the centre of the international monetary system. However, gold trading in Paris never managed to compete effectively with Zurich or London, and the market mainly remained a national retail market.

[296]Telephone call from Sir George Bolton from the Bank of England, telephone memorandum, L.W. Knoke, 8 December 1950, New York, Archives of the Federal Reserve, box 617031.
[297] Coombs, *The Arena*, 43.
[298] Bott, 'South African Gold at the Heart of the Competition between the Zurich and London Gold Markets at a Time of Global Regulation, 1945–68', 113.
[299] BIS, Annual Report, 1954 (1 April 1953–31 March 1954), 14 June 1954 (Basle: BIS), 153.

The Paris market opened on 13 February 1948, against the wishes of the IMF.[300] Foreigners, however, were forbidden from trading in this market until January 1967. This was linked to French ambitions to make Paris a larger international player.[301] However, the opening of the market to foreigners in early 1967 did not increase gold sales. Rather, the market shrank from FF8.5 million average daily transactions in January 1967 almost halving to FF5.4 million in February and FF4 million in April.[302]

The London market offered tighter spreads than Paris. And as price depends on volume, it was difficult for Paris to catch up unless it increased its volume, which they could do only with better prices. The Fed put it simply: 'the low spread maintained by London bullion brokers between their buying and selling prices for gold makes London an attractive market for both buyers and sellers.'[303] Before the Second World War, London had a monopoly on South African gold sales, which increased transaction volumes.[304] After 1945, Zurich started to compete with the City for South African business but only seriously challenged London after the market temporarily closed in 1968.

2.5.2 The reopening of the market in March 1954

In this dissertation I argue that the reopening of the gold market created a direct link between sterling and the London gold market, which would eventually put stress on the international monetary system. Any shock to the sterling/dollar market could influence the gold price via

[300] Thi Hong Van Hoang, 'The Gold Market at the Paris Stock Exchange: A Risk–Return Analysis 1950–2003/ Der Goldmarkt an Der Pariser Börse: Eine Rendite-Risiko-Analyse 1950-2003', *Historical Social Research/ Historische Sozialforschung* 35, 3 (133) (2010), 389.
[301] Ibid., 390–1.
[302] French BIS Gold Expert meeting minutes, '30ème réunion des experts de l'Or et des Changes', 8 May 1967, Archives of the Bank of France, 467200501-74, 3.
[303] Research Memorandum on the Reopening of the London Gold Market, Alan Holmes (Foreign Research Division), 8 April 1954, New York, Archives of the Federal Reserve, 9.
[304] Bott, 'South African Gold at the Heart of the Competition between the Zurich and London Gold Markets at a Time of Global Regulation, 1945–68', 109.

the London gold market. The gold price was the barometer of the Bretton Woods system;[305] by having the market in London transmission could be made via sterling. Harvey defines the London gold market as a 'status market', arguing that beyond its market function it was a global indicator of the price of gold.[306] Capie finds that the London gold price reflected 'international sentiment on the dollar and so affected other currencies'.[307] Central banks did not directly engage in arbitrage but, as Eichengreen has established, if the price increased to more than $35 an ounce, it created an opportunity for central banks to buy cheaper gold at the Federal window and sell it for more in the London market.[308] This would arbitrage the price in London down but deplete US gold reserves in the process.

When the Bretton Woods system was set up, private ownership of gold was forbidden in the US and Britain. The Bretton Woods articles of agreements did not mention private gold markets, suggesting they did not foresee that these would become an issue. Coombs wrote: 'From the very beginning therefore, the official United States price of gold was vulnerable to speculative challenge by the private gold markets functioning abroad.'[309] Before the London market opened some South African gold was sold directly in South Africa. The South African gold market was open to dealers from across the world, not British ones only.[310] Channelling all gold through London created an official price for gold, which investors could locate in the financial press. What was the political process that led to the opening of this market, which was to become the cornerstone of the Bretton Woods system and why did the Federal Reserve not stop this potentially harmful market from opening?

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[305] Bank of England, 'The London Gold Market', *Bank of England Quarterly Bulletin*, March 1964, 16–21; Bordo, Humpage and Schwartz, *Strained Relations*, 177.
[306] Rachel Harvey, 'Market Status/Status Markets: The London Gold Fixing in the Bretton Woods Era', in *The Global Gold Market and the International Monetary System from the Late 19th Century to the Present: Actors, Networks, Power*, ed. Sandra Bott (Basingstoke: Palgrave Macmillan, 2013).
[307] Capie, *The Bank of England*, 158.
[308] Barry Eichengreen, *Global Imbalances and the Lessons of Bretton Woods* (Cambridge, MA:, MIT, 2007), 44.
[309] Coombs, *The Arena*, 43.
[310] 'Procès-verbal du Conseil Général', 25 March 1954, Paris, Archives of the Bank of France, vol. 145.

The London gold market opened as a result of a power play between the US, the IMF, the UK and South Africa. US officials were constrained by their commitment to buy gold at $35 an ounce at the gold window, the IMF saw gold markets as destabilising, the UK wanted to increase the international role of both London and sterling, while South Africa wanted to sell gold at a fair price. Surprisingly, the US displayed only limited interest in all this.

In 1947, the IMF worried that newly minted gold would escape the control of monetary authorities. The Fund issued a statement to encourage members to 'take effective action to prevent external transactions in gold at premium prices'. Sales at premium prices would disrupt exchange stability, the Fund believed.[311] Its remarks were aimed at South Africa, which was trying to sell its gold at the best price. In 1947, the Bank of England had allowed a few licensed bullion dealers to trade gold as long as the premia on the official market did not exceed 1%.[312] Following a request from the IMF, however, the British government withdrew this authorisation and refrained from developing a gold market in London. British restraint was short-lived as the French soon asked the IMF for a private gold market in Paris. The Fund reluctantly agreed. The French were at odds with the Fund after trying to introduce a dual exchange rate system in 1948. They ended up leaving the Fund from 1948 to 1954 to fight what they thought were 'Anglo-American abuses *in the name* of Bretton Woods'.[313] France having its own gold market meant that the IMF could no longer oppose a similar market opening in London.

[311] IMF, quoted in Coombs, *The Arena*, 43.
[312] Ibid., 43–4.
[313] Eric Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', in *Global Perspective on the Conference and the Post-War World Order*, ed. Gilles Scott-Smith and Simon Rofe (Basingstoke: Palgrave Macmillan, 2017), 5.

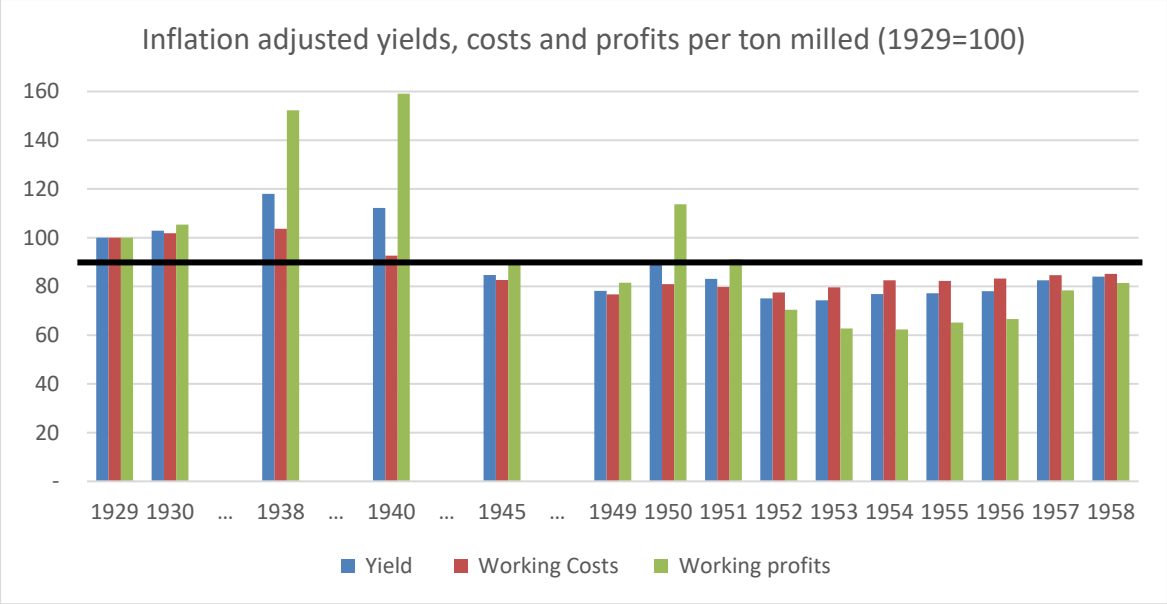

Figure 28 Gold yields, costs and profits

Source: Productivity figures show all available data from BIS annual reports (1951, 1954, 1957 and 1958), inflation figures from Thomas, Ryland, Sally Hills and Nicholas Dimsdale. 'The UK Recession in Context – What Do Three Centuries of Data Tell Us?' *Bank of England Quarterly Bulletin* 50, 4 (2010): 277–91.

Note: Index and inflation adjustment: author's calculation.

South Africa challenged the Fund by selling gold directly to manufacturing and artistic markets at a premium. In 1949, the *Wall Street Journal* announced that South Africa managed 'to sell 620,000 ounces of pure gold abroad at $38.52 an ounce'. This represented about 5% of the country's annual production. The price was '$3.52 over the $35 an ounce price set by the U.S. and the International Monetary Fund'.[314] While visiting South Africa, a delegation from the Fund noted how South Africa 'used the argument that it is unreasonable for gold to remain at its present price while the price of all other commodities is greatly increased'. Adjusting for inflation, profits from South African mines fell consistently. This put pressure on production and left large amounts of low-grade ore unworked. The BIS closely monitored South African productivity and profitability in its annual reports. Figure 28 illustrates yields per tonne, costs and profits in South Africa from 1929 to 1958 (the gaps in are for the years the BIS did not

[314]'South African mines to sell gold abroad at $38.52 an ounce', press report, 28 June 1949, Washington, DC, Archives of the International Monetary Fund, PREP/49/183, 291273.

collect data). Despite reducing costs by over 20% in real terms after the war, profits never reached pre-war levels. The nominal anchor of the gold price at $35 an ounce was therefore clearly a problem for South African producers.

In the 1950s, the US controlled 64% of the global gold reserves; therefore, US policy-makers did not see the opening of the London gold market as a priority.[315] Allowing the London gold market to open meant there would be a market price of gold in addition to the official gold window price. Coombs revealed that despite seeing the risks, 'in Washington the official mood was not to worry unduly over such distant problems'.[316] The US gold reserves at the time were high enough for this not to be a pressing issue. US policy-makers were confident that their reserves were large enough to weather any crisis. Evidence of this confidence is found in a telephone conversation transcript between Bolton and Knoke. According to Knoke: 'We still have $23 billion in gold bars and even if present selling continues I see no danger of our [reserves] falling to a level where we might be scared.'[317] The 1960s would prove him wrong.

In the US's view the risk of the newly opened gold market in London was that it was 'far too early to say much about these problems, many of which may be purely academic since they deal with eventualities in a rather uncertain future'.[318] The explanation for this nonchalant attitude was two-fold: first, reserves were high enough; and second, the Federal Reserve was highly sceptical of theories advanced by academics, mainly Triffin, who argued that international liquidity would become a problem. Triffin had been arguing, from 1947 onward, that a system based on gold would eventually run out of gold for central banks to use as reserves, which would slow economic growth. The Fed, however, was critical of Triffin as we

[315] Coombs, *The Arena*, 44.
[316] Ibid., 45–6.
[317] Telephone call from Sir George Bolton of the Bank of England, telephone memorandum, L.W. Knoke, 8 December 1950, New York, Archives of the Federal Reserve, box 617031.
[318] Alan Holmes, Research Memorandum on the Reopening of the London Gold Market, (Foreign Research Division), 8 April 1954, New York, Archives of the Federal Reserve, 9.

will see in Chapter II, section 2. Other academics, such as Despres, Kindleberger and Salant, believed that the system could survive despite smaller US gold reserves as long as there was sufficient trust in the dollar.[319] This is how the system works today with the dollar as an international reserve currency despite having little gold backing. In 1954, this debate was still in its infancy and the Fed did not start to worry about it until the late 1950s.[320]

Russian gold sales in 1953 eased the price in offshore markets and the US started to see 'certain advantages in a free gold market, where South African and Russian supplies might well tend to outrun industrial and hoarding demand'.[321] Such a market could not be in New York if it were to accommodate Russian sales during the Cold War. The Fed saw the opening of the market as an opportunity to improve global supply. Prior to the opening of the London market, the Bank of England had been dealing directly with the Russians for gold purchases.[322]

The UK wanted to increase its standing in global finance. The Treasury issued a press release stating that before the war, 'London was the premier centre of the world for dealings in gold'. The reopening was meant to give 'growing opportunities for traders, merchants and bankers, so that they may make the fullest contribution to towards the increased overseas earnings'.[323] Schenk argues that the Bank of England hoped to restore 'the status of the City of London and of sterling' by reopening the gold market.[324] The sterling area, and mainly South Africa, was producing 'about 60 per cent of world gold output outside the USSR' and London's

[319] Despres, Kindleberger and Salant, *The Dollar and World Liquidity*.
[320] See Chapter II, section 2.
[321] Coombs, *The Arena*, 45.
[322] The governor 'referred to the proposed purchase of Russian Gold which he had already mentioned to the Committee, and said that firm arrangements had now been made to buy gold for the E.E.Account to the approximate value of £20 million. (Mention made informally on the 18th and 25th November 1953)', informal minutes of the Committee of the Treasury, quoted in the Extracts from Minutes of the Committee of the Treasury, London, Bank of England archives, reference G14/133.
[323] Press release from the Press Office of H. M. Treasury, concerning the reopening of the London Gold Market for the First Time since the Outbreak of the Second World War, 19 March 1954, London, Bank of England Archives, C43/159.Transcript available at www.gold.org/sites/default/files/documents/after-the-gold-standard/1954mar19.pdf.
[324] Schenk, *The Decline of Sterling*, 111.

position at the centre of the sterling area made it 'a natural market for gold'.[325] The Fed for its part thought that this market would help the 'reestablishment of London as the center of the world gold trade and fuller use of the technical skills of its gold and foreign exchange dealers'.[326] Therefore, it was more than happy to let the market open and did not foresee any associated problems.

The London gold market opened as a result of South Africa's willingness to sell gold and Britain's interest in re-establishing the City as a leading trading centre. The IMF was opposed to opening the market but US policy-makers and Federal Reserve officials did not see the opening as an immediate threat thanks to the favourable economic outlook and substantial gold reserves. Thus the London gold market became the barometer for the health of the Bretton Woods system.[327] Later, it led to the creation of the Gold Pool in the early 1960s (see Chapter II).[328]

2.5.3 How the market worked

This subsection shows how the market was concentrated among five main players in London, which gave the Bank of England privileged access to the world's most important gold market. I use new archival data to explain the details of the functioning of the London gold market. This is important if one is to understand what role the Bank played before it became the focal point of the crisis in the international monetary system in 1961 (see Chapter III). I also present new estimates of world gold production from 1950 to 1970 from BIS annual reports.

[325] Alan Holmes, Research Memorandum on the Reopening of the London Gold Market (Foreign Research Division), 8 April 1954, New York, Archives of the Federal Reserve, 8.
[326] Ibid, 2.
[327] Bank of England, 'The London Gold Market'; Harvey, 'Market Status/Status Markets: The London Gold Fixing in the Bretton Woods Era'.
[328] See Chapter II, section 3.

The gold market was an over-the-counter (OTC) market, which meant it did not have a physical location during the day, except for the fixing. It operated throughout the whole day but the biggest volume usually went through at the fixing. The fixing started each day at around 10.30 am in the offices of N. M. Rothschild & Sons and a price was generally set at 11 am. Rothschild chaired and hosted these meetings.[329] The process was as follows. The five dealers were all in communication with their respective trading rooms. First, the chairman would 'suggest a price, in terms of shillings and pence down to a farthing; this price will be chosen at the level where it is thought that buyers and sellers are likely to be prepared to do business'. The price was then moved until 'there are both buyers and sellers in evidence'.[330] When buyers and sellers had agreed a price, this became the fixing price.

The market was composed of two merchant banks – Samuel Montagu & Co. and Rothschild – two gold brokers – Sharp Pixley & Co. and Mocattas and Goldsmid – and a metallurgical firm – Johnson Matthey. Demand came from central banks, industry and the arts, and hoarding. Supply was from new production, central bank sales, Russian sales and disposing of hoarding.[331]

Figure 29 is a schematic representation of the market. Access to the market was only possible through one of the five main dealers. The Bank of England often played the role of agent for official third parties and was South Africa's main dealer. Dealing with the Bank gave an informational advantage to customers. The Bank's dealers processed most of the South African supply and were active in the market all day so they knew when to sell and how to avoid oversupply. Unsold gold was often absorbed into the reserves of the Exchange

[329] Bank of England, 'The London Gold Market'.
[330] Ibid.
[331] Ibid., 18.

Equalisation Account at market price. This was an advantage as it did not move the market price and was a direct transaction between the Bank and South Africa.

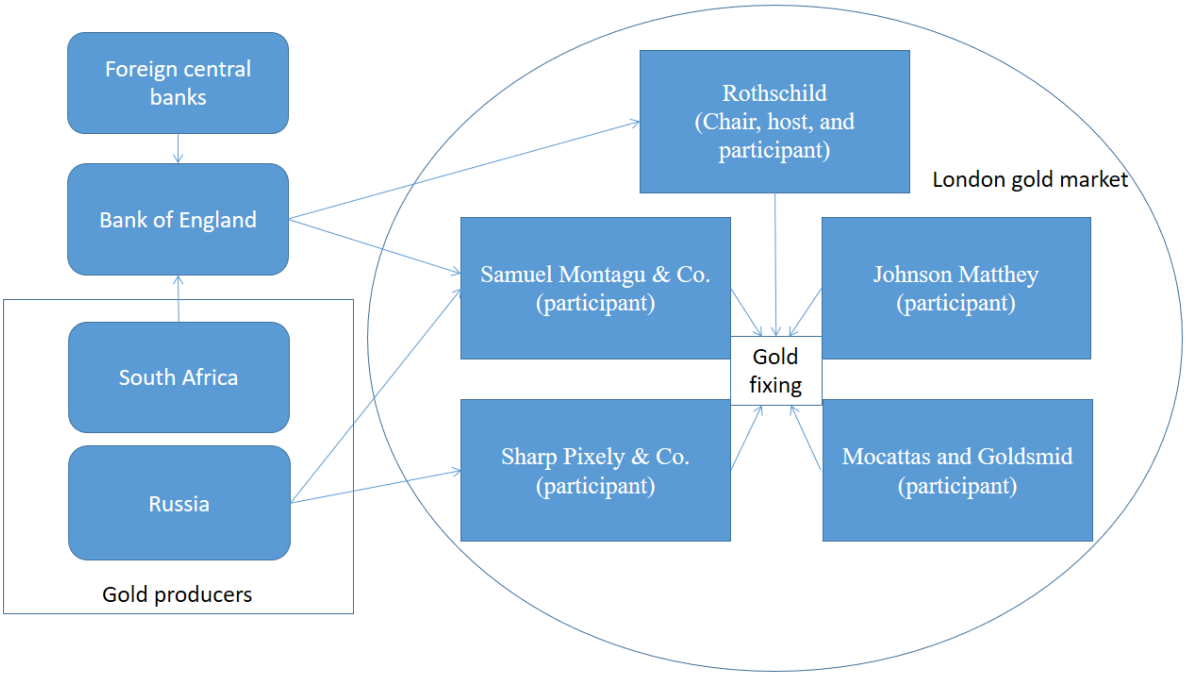

Figure 29 Schematic representation of the London gold market

Source: Bank of England, 'The London Gold Market', *Bank of England Quarterly Bulletin*, 1964, 16–21 and Bank of England dealers' reports.

Note: For readability, not all possible arrows are present. For example, foreign central banks were able to deal directly with market-participating investment banks. Russia probably also dealt with Rothschild and other dealers.

Rothschilds not only hosted the fixing and had the biggest market share, but it also acted as an agent for the Bank. In May 1936, the governor suggested installing a direct line with the dealing room at Rothschilds: 'a private line be installed with Messrs. Rothschilds Bullion Room in view of the fact that the gold fixing takes place on their premises: this would in no way imply that Messrs. Rothschilds were regarded as being in a privileged position vis-à-vis the bank.'[332] In September 1938, the Bank decided that outside of fixing dealings, it

[332] Extracts from Minutes of the Committee of Treasury, 13 May 1936, London, Bank of England Archives, G14/133.

should 'no longer deal exclusively with Rothschilds' but would also deal with Mocattas & Goldsmid. This was not due to 'dissatisfaction with the services most efficiently rendered by Rothschilds' but in the interest of efficiency and competition.[333] The Bank tried to maintain the appearance of a competitive market when Rothschilds was in a leading position.

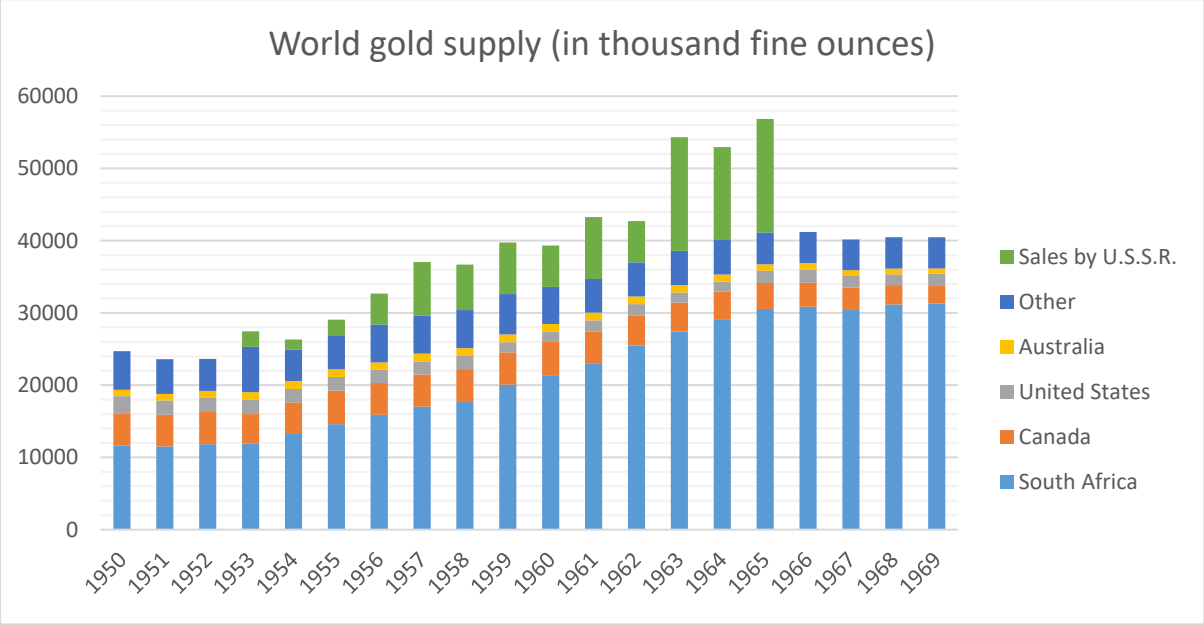

Figure 30 World gold production estimates by the BIS

Source: BIS annual reports, various years.

If market demand came from the five main participants at the fixing, where did the supply of gold in the market come from? Figure 30 presents an estimate of world gold supply, combining new production and Russian sales. Data are from the BIS archive and are presented here for the first time. Gold supply shows an upward trend until 1965 when both Russian sales ceased and South African production stopped increasing. Russian sales were mainly dependent on the country's agricultural performance. When the country did not produce enough food (mainly wheat) to feed its population, it would sell gold to buy supplies from abroad. South

[333] Extracts from Minutes of the Committee of Treasury, 7 September 1938, London, Bank of England Archives, G14/133.

African production depended on the price of gold. As the gold price never increased during the period, mining of lower ore tended to diminish. Equally, there were some productivity gains leading to more production. After 1965, South African production stagnated.

2.5.4 Bank of England gold market operations, 1954-9

The Bank of England was responsible for the London gold market. Capie argues that after opening the gold market, the Bank of England intervened 'to steady prices and to keep orderly markets'.[334] It was mainly about 'housekeeping', just as the Bank was doing in other London markets. This section analyses the operations of the Bank of England in the gold market before the creation of the Gold Pool and shows that, despite not having any formal or informal mandate from the Fed, the Bank was defending gold–dollar parity at its own expense.

What was a typical day like for the gold dealers at the Bank of England? What follows is their daily report of 15 March 1956, a typical day: 'Gold was fixed ½ d. lower at 249s.4.½d. at which price we sold 20 South African bars to the market and took 160 for H.M.T. The international price was marginally firmer at $34.96 ½. Against dollars we bought 240 bars from Montagus (= the Russians) and sold 120 to the Italians.'[335]

On that day the Bank sold 20 bars of South African gold at a market price of 249 sh. 4½d an ounce of gold (£12.47, roughly equivalent to $34.916 at the official parity). It bought 160 bars for the Treasury. This gold was for the reserves of the Exchange Equalisation Account, which was owned by the Treasury. Finally, the Bank acted as an agent for the Italians who wanted 120 gold bars. Samuel Montagu & Co., one of the five key market players, sold Russian gold against dollars. Some transactions were against sterling and others against dollars. The main quote for the gold price was always in sterling, but all market participants were aware of

[334] Capie, *The Bank of England*, 158.
[335] 'Dealers' report', 15 March 1956, London, Bank of England Archives, C8.

the equivalent dollar price an ounce. At $34.96½ on that day, the price was lower than the gold window price of $35 an ounce. This explains why the Bank of England offered 20 gold bars from South Africa to the market only and took the others for the EEA. This lower price was detrimental for South Africa which wanted to maximise profit, but beneficial for the Treasury which was able to buy gold cheaply.

In a letter to the Federal Reserve, the Bank explained this selling process. The South African Reserve Bank would 'ship gold regularly to London and give us, as their agents, an order each week to dispose of a specified amount of the gold we hold for them'. Marketing of gold was the Bank's role, which managed 'both the timing of the sales and whether the gold is offered in the market or sold to other purchasers'.[336]

Figure 31 summarises Bank of England operations in the gold market using data from internal daily dealers' reports. The data are presented for the first time here. The Bank classified dealings as 'customer' operations (shown here in orange) or 'market' operations (in blue). After 1957, however, the Bank stopped distinguishing between the two and reported all operations in aggregated figures (also in blue). In 1956, the Bank was still treating operations for South Africa and the Treasury/EEA as customer operations before aggregating them in March 1957. This was arguably a shift in the way the Bank understood its mission from that of a simple agent to a more holistic role ensuring that the price was where the Bank wanted it to be: somewhere between $35.08 and $35.20 an ounce. This role would be enhanced with the introduction of the Gold Pool, when this became the official mission of the Bank of England.

[336] Letter from Sir George Bolton to Werner Knoke, 31 May 1954, London, Archives of the Bank of England, C43/319.

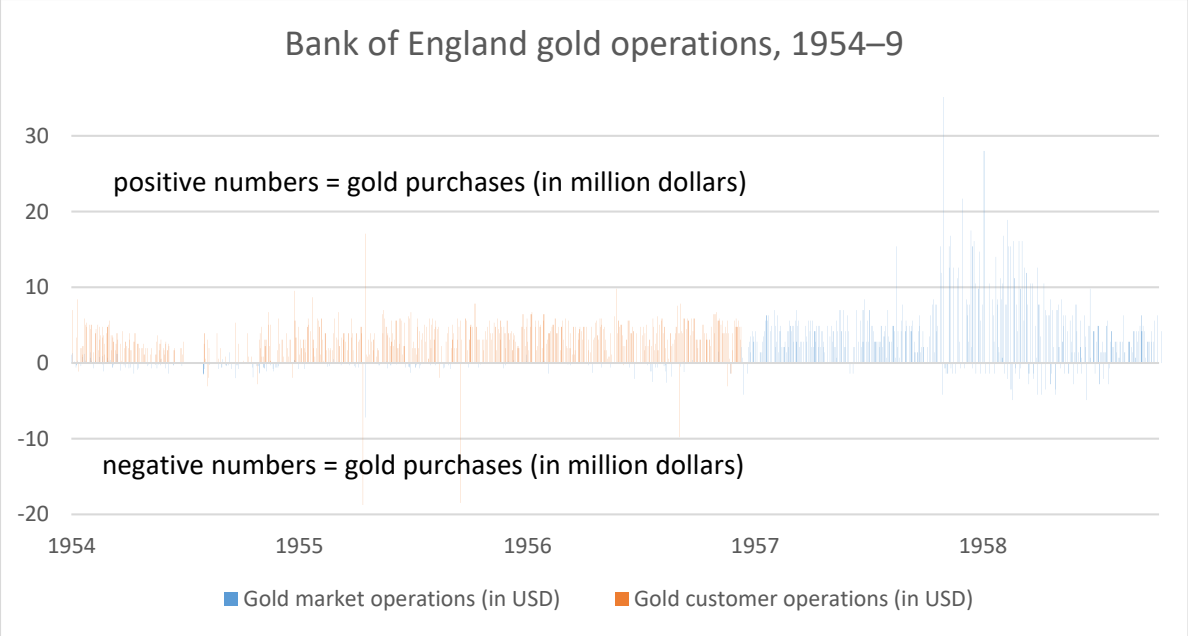

Figure 31 Market and customer gold transactions by the Bank of England, 1954–9

Source: Dealers' reports (C8).

The official Bretton Woods gold price was $35 an ounce. This is the price at which the Fed sold gold at the Fed window, adding a tax imposed by the US Treasury of 0.25%, making the official price $35.0875. When taking into account insurance and transport costs between London and New York, the price of gold in London from the Fed window was $35.20 an ounce. Above this price central banks could make an arbitrage profit by buying in New York and selling in London. The Bank of England wanted to keep the price below $35.20 an ounce to avoid central banks speculating against the Fed. With a price of say $35.21, a central bank could buy gold at $35.0875 at the Fed and sell it on the London market, covering transport costs and making $0.01 profit an ounce. Even if central banks were unlikely to engage in arbitrage against the US, the possibility of arbitrage sent a bad signal to market participants and cast doubt on the ability of the US to maintain gold parity. In the long run, this would threaten the credibility of Bretton Woods.

The complex position of the Bank is summarised in Table 10, which shows the Bank's preference for the gold price for all the institutions on whose behalf it acted: as an agent for South Africa, an agent for the European central banks, a 'market housekeeper' and a market participant on behalf of the EEA. The Bank had an incentive to keep the price from dropping in order not to lose South African business, but it also had an incentive not to let the price soar to avoid the international monetary system breaking down.

Third party	Role of the Bank on behalf of the third party	Price preference of the third party
South African government	Gold selling agent	As high as possible
European central banks as buyers	Gold buying agent	As low as possible
European governments as Bretton Woods participants	No official role until the creation of the Gold Pool	Stable and lower than $35.20 per ounce
US government	No official role until the creation of the Gold Pool but implicitly guarantor of the price below $35.20	Stable and lower than $35.20 per ounce
Treasury through the Exchange Equalisation Account as gold buyer	Gold buying agent	As low as possible
Treasury through the Exchange Equalisation Account as currency policy setter	Ad hoc	Ad hoc
Bank of England as market housekeeper	Housekeeper/market intervener	Stable and lower than $35.20 per ounce

Table 10 Price preferences of the various market actors

Source: Author's judgement based on various archives.

As Table 10 highlights, among the main players only South Africa had an incentive to maintain a high gold price. It provided most of the world's gold supply and could threaten to

sell its gold elsewhere. The Bank had to manage the conflicting interest of South Africa against its other customers. Russia and other producers shared South Africa's interest in a high price; however, they did not deal with the Bank of England directly. In the context of the Cold War, Russia had little diplomatic muscle, but was obliged to participate passively in this market.

What were the Bank's operations like? Table 11 summarises descriptive statistics for different sub-periods and compares the data with the operations of the Gold Pool, an international intervention syndicate studied in more detail in Chapter III. The table gives data for three sets of figures: market (or 'housekeeping') operations intended to avoid what the Bank called 'undue fluctuations' in the gold price, excluding any customer operations from 1954 to 1957; all operations before convertibility, including customer operations; and operations by the Gold Pool, which were jointly funded by several nations.

Units: $ million Positive numbers mean a net purchase of gold by the Bank of England during a given day, negative numbers a net gold sale	1954–7 market operations only ('housekeeping')	1954–9 all operations	1961–8 all operations Gold Pool
Maximum	1.5	38.5	35
Minimum	-7.2	-18.7	-212.5
Std. Dev.	0.4	3.2	7.2
Net intervention	-64.8	3528.3	-1340.6
Observations (number of days)	1074	1744	2326

Table 11 Bank of England gold operations statistics in $ millions

Source: Bank of England dealers' reports (C8).

Note: Sales are negative numbers and purchases positive numbers.

Net intervention in Table 11 displays ‘housekeeping’ costs until 1957 of $64.8 million. This means the Bank spent just short of $2 million a month ($18 million in 2017 dollars) to maintain an orderly market. This was the price the Bank had to pay in order to benefit from the positive externalities of having a gold market in London. This is not to say that the market would not have stayed in London if the Bank had not performed these ‘housekeeping’ operations, but that it believed this was an important role.

Over the period before convertibility (1954–9), the Bank managed to buy just over $3.5 billion in gold. This went to customers such as foreign central banks or to the EEA. The gold reserves of the EEA increased from $1569 million when the gold market opened to $2059 million before convertibility. Using this estimate the Bank increased its gold reserves by only $490 million. Therefore, most of the $3.5 billion acquired on the market probably went to customers other than the EEA. Having the gold market in London gave the Bank access to large quantities of gold which were easy to acquire and control by intervening frequently in the market.

Table 12 categorises sales and purchase operations separately for two distinct periods: pre-convertibility and the Gold Pool period. Purchases are operations that increase the Bank’s net gold position or transactions on behalf of customers. Sales are when the Bank sells gold against sterling or dollars. Apart from a handful of operations, most sales operations were on the Bank’s own account and not for customers. Sales should mitigate market pressure by reducing the gold price. The table presents data for the pre-convertibility period and for the whole Gold Pool period.

Unit: £ million., both sales and purchases are positive numbers	1954–9 all operations		1961–8 all operations (Gold Pool)	
	Gold Purchases	Gold Sales	Gold Purchases	Gold Sales
Average	4.2	1.8	2.4	5
Median	3.9	1.4	2.1	2.1
Std. Dev.	3.1	2.6	2.9	12.7
Sum of sales/purchases	3734.3	206	1994.3	3087
Observations (number of days)	883	117	827	619

Table 12 Bank of England gold operations in $ million.

Source: Bank of England dealers' reports (C8).

Note: Sales and purchases are presented as positive numbers.

Before 1959 convertibility 88% of the Bank's operations were net gold purchases, which means that the Bank was not worried about an increase in the price and could buy gold on most days.[337] If buying was too strong, the price would rise and, therefore, the Bank joining buyers is a sign that the price was under control. After convertibility purchases represented only 57% of operations. Convertibility forced the Bank to sell larger amounts of gold on the market, rising from $1.8 to $5 million a day on average and the average purchase the Bank was able to make on a given day was almost halved. This meant that market conditions after convertibility were adverse and the Bank was forced to sell more gold and able to buy less. Before convertibility, the Bank spent just $206 million to defend the gold price in London from 1954 to 1959. After convertibility, the Gold Pool was forced to sell 14 times more (just over $3 billion) from 1961 to 1968. This explains why it was no longer willing to manage the

[337] The Bank purchased gold on 883 days and sold it on 117 days. 883/(117 + 883) = 0.883, or 88%.

London gold price by itself but asked for US assistance. This led to the creation of the Gold Pool, the subject of Chapter II.

London had been the leading global gold market since the mid-nineteenth century and consequently had a strong desire to reopen this market after the Second World War. However, the context of Bretton Woods meant that the market was to play a central role in determining the credibility of the dollar peg to gold, and be a barometer for the entire Bretton Woods system. If the dollar price of gold in London increased, it highlighted that the official gold dollar parity at the gold window was not credible. London became so important because not only was it the main international gold market but US citizens were prevented from owning gold under the terms of the Gold Reserve Act 1934. US policy-makers did not fully grasp the potential consequences of the reopening of the gold market as newly discovered internal memoranda presented in this chapter show. The IMF, on the other hand, did see it as a threat to the stability of the international monetary system. Bank of England market operations in the gold market until 1959 mainly involved purchases, so there was little upward pressure on the price. However, convertibility and freer capital flows thereafter drastically increased pressure on the London gold market, which in the early 1960s would prove too strong for the Bank of England to manage alone, leading to the creation of the Gold Pool. As I discuss in Chapter II, the first crisis came in October 1960 with the US presidential election and John F. Kennedy's pledge to 'get America moving again'. This was viewed as an 'inflationary policy that might force the United States to devalue its currency'.[338]

[338] Bordo, 'A Historical Overview', 69.

Chapter I conclusion

At the end of the war Britain was isolated from the global economy, like all other major economies. Under US pressure it attempted to make sterling convertible again, but this failed miserably after just a few weeks. Then, in a more pragmatic approach to what a new postwar equilibrium could be, the pound was devalued in 1949, along with most other major currencies. At this point, however, capital controls were still in place and it was unclear what would happen to sterling reserves held abroad, mainly in overseas territories, once capital was allowed to flow freely again.

The contribution of this chapter is to display how Britain progressively opened to the world economy again. The opening to the global economy happened almost insidiously. First, the foreign exchange market was reopened in 1951. This was expected and did not have major consequences for the international monetary system. But then the London gold market was reopened, with the approval of the US. American policymakers at this stage, sitting on large gold reserves, did not see any risks in this move. However, this created a new offshore dollar-gold market. And it meant that the credibility of the US dollar in the whole Bretton Woods system was now decided in daily meetings between five key dealers, under the distant watch of the Bank of England. The market was the only official gold-dollar market in the world, and hence became a major influence on the stability of the dollar.

The Bank of England, before the introduction of convertibility, happily took on the responsibility of monitoring the gold market. As shown in this chapter the cost of this monitoring was low. However, as will be seen in the next chapter, as soon as international capital flows were set free, pressure on the London gold market quickly mounted. In turn this meant that troubles for sterling in London would put pressure on the dollar, as will be seen in the following chapters.

Chapter II

PATCHING UP THE BRETTON WOODS SYSTEM (1958–1964)

‘The fundamental dilemma of international economic relations in the 20th century lies in the inadequacy of national sovereignty as a framework for policy decisions and their administrative implementation in an interdependent world.’

Robert Triffin, *Europe and the Money Muddle*, 1957

‘While the United States has provided the world with liquid dollar assets in the postwar period by capital outflow and aid exceeding its current account surplus, in most years this excess has not reflected a deficit in a sense representing a disequilibrium.’

Emile Despres, Charles Kindleberger, and Walter Salant, ‘The Dollar and World Liquidity: A Minority View’, *Economist*, 5 February 1966, 526–9

‘The method of providing international liquidity to meet the long-term growth needs of the world economy is haphazard, being based primarily on the rates at which gold is mined and is absorbed for nonmonetary purposes and on the position of the United States balance of payments.’

Recent Proposal for the Reform of the International Financial System, internal memorandum from Clarke and Kotsonis to Holmes and 38 others, 19 July 1963, New York, Archives of the Federal Reserve, box 618606

Convertibility allowed people living outside the sterling area to transfer sterling freely in and out of the sterling area and changed all the established rules of the international monetary system. Before convertibility, capital controls and import restrictions meant the UK was largely sheltered from fluctuations in the international financial markets. The introduction of convertibility in December 1958 marked the beginning of the ‘real’ Bretton Woods period as Barry Eichengreen and Michael Bordo call it.[339] All the institutions established before convertibility were put to the test. Policy-makers quickly realised that with freer capital flows and international financial pressure the system needed considerable reform. The Belgian-born

[339] The name ‘real Bretton Woods system’ is chosen, for example, by Bordo and Eichengreen, *A Retrospective*, 37.

economist Robert Triffin was the first to argue that the system was unsustainable.[340] He developed a new strand of economic research and generated much soul-searching among the leading officials of the central banks and international institutions. Chapter II investigates the introduction of convertibility and all the efforts to repair a failing system, starting with the Gold Pool and the US swap network. These two institutions were the result of a debate on 'international liquidity', initiated by Triffin, about finding a new international reserve asset that would be stable enough to help sustain economic growth globally.

The palliatives to the problems of the Bretton Woods system were the result of crises on both sides of the Atlantic. The swap network was a consequence of the US experiencing heavy outflows from its gold reserves. The Gold Pool, in turn, originated from a crisis in the London gold market during the 1961 US presidential election. With convertibility the fundamentally flawed nature of the Bretton Woods system was no longer a secret among central bankers. Now it was out in the open; the cat was out of the bag. The measures put in place were often last-minute emergency fixes that were, *ex post*, presented as carefully considered long-term solutions. Inherently, governments were faced with two options: either align their domestic economic policies to accommodate international monetary flows and lose control over monetary tools to manage unemployment; or leave the system and float their currencies. Neither option was appealing; floating was a leap into the unknown and more enfranchised electorates worldwide demanded full employment.[341] British policy-makers tried to conciliate both domestic and international concerns. This violated the macroeconomic trilemma and meant that the 1960s were a succession of near-crises, avoided only at the

[340] His analysis was inspired by the Polish economist Feliks Mlynarski who took a similar approach to the collapse of the gold standard. Feliks Mlynarski, *Gold and Central Banks* (New York: Macmillan, 1929).
[341] On the fear of floating, Treasury Under Secretary Roosa wrote, 'A worldwide system of flexible rates would, I very much fear, be a continuous invitation to economic warfare as countries maneuvered their rates against each other.' This shows how prevalent the fear of floating was. In Meltzer, *A History of the Federal Reserve, Volume 2, Book 1, 1951-1969*, 684.

eleventh hour. This chapter considers some of the short-term fixes and Chapter III analyses the actual crises in the international monetary system.

This chapter is divided into four sections. The first reviews the consequences of convertibility for the Bretton Woods system, in theory and practice. This is followed by a theoretical overview of the main debate about the international monetary system at the time. Finally, two of the patches applied to save the system are reviewed: the Gold Pool and the US swap network. These were effective until the next major crisis in 1964 which is reviewed in Chapter III.

3.1. 1958 convertibility and its consequences

With convertibility the Bretton Woods system was finally able to operate as intended. The 'real' Bretton Woods put to the test the ideas elaborated in 1944 at the Mount Washington Hotel, Bretton Woods. Theory was meeting practice. Convertibility was a seamless process; it did not trigger a crisis, but changed the structure of the whole international system. Convertibility put an end to parallel markets; it made arbitrage unnecessary and removed the different types of sterling presented in Chapter I, section 3. Transferable sterling became redundant and was merged with official sterling, while Swiss markets no longer offered opportunities for profitable arbitrage. Here, I analyse the direct effect of convertibility on the currency market. Using new data on both exchange rate spreads and alternative exchange rates, I show how this important institutional change had little effect on the day-to-day functioning of the currency market. It changed, however, how governments would manage their economies.

Recall that the trilemma forces policy-makers to choose two of the following three policies: free capital flows; a fixed exchange rate; and monetary policy independence. Before convertibility, the UK had relative control of capital flows and fixed exchange rates, and the

government could set its monetary policy somewhat independently. Convertibility brought freer capital flows and, consequently, the UK had to choose between leaving the Bretton Woods fixed exchange rate system or relinquishing the right to set its own monetary policy.[342] They wanted neither. Leaving the Bretton Woods system and floating was only briefly considered in the ROBOT and collective approach schemes which never saw the light of day. Prime Minister Harold Wilson (1964–70) explained what fixed exchange rates and free capital flows meant for the government: 'every action we took had to be considered against a background of the confidence factor, particularly against our assessment of what speculators might do'.[343] Wilson's speculators were overseas sterling holders pondering whether to sell their sterling before a possible devaluation.

3.1.1. What is convertibility?

After restrictions from the war years were lifted, the Exchange Control Act formalised capital controls and divided the world into four sterling regions as we have seen: the sterling area, the dollar area, the transferable account countries and the bilateral countries. Many, but not all, of the controls introduced in 1947 were lifted in 1958 and the relevance of the different sterling regions diminished. The world would be divided only into the sterling area (the UK and its former colonies) and the non-sterling area (the rest of the world).[344] Investors from Europe, the US and many other non-sterling area countries could now freely move sterling in and out of the sterling area. Residents of the sterling area were not allowed to convert sterling into dollars or any other currency.

[342] Many controls on capital flows remain, most of which survived until the 1980s. The trilemma simplifies reality.
[343] Harold Wilson, *Labour Government, 1964–70: A Personal Record* (London: Michael Joseph, 1971), 32–3.
[344] To have an exact breakdown of the countries within the sterling area, Chapter I, Figure 1.

After a long negotiation to coordinate the move with a French devaluation, convertibility was finally agreed at the end of 1958.[345] When the French devaluation was carried through on 26 December 1958, the UK was free to follow suit by unifying transferable and official sterling and make non-resident sterling transferable anywhere. The unification of transferable and official sterling meant that there would no longer be two prices for sterling: one in London, the other in other trading places such as Zurich and New York. On Saturday, 27 December 1958 the UK Treasury issued the following statement: 'From 9 a. m. on Monday, December 29th, sterling held or acquired by non-residents of the sterling area will be freely transferable throughout the world. As a consequence, all non-resident sterling will be convertible into dollars at the official rate of exchange.'[346] Non-residents of the sterling area were now allowed to transfer sterling, say from New York to London. Sterling area residents were still not allowed to convert their sterling abroad without a valid reason (for example, for import/export or for travel). Convertibility meant that businesses and individuals could buy goods abroad without limit. The aim was to facilitate trade within Europe and with the United States.

Convertibility was a European move. The BIS explained that the reason behind this new setting was 'to promote genuine economic integration'.[347] The new framework forced 'each country to keep its domestic monetary policy more closely in line with that of other countries, for no country can embark alone on an inflationary policy if it wishes to maintain convertibility'.[348] What sounded like a good thing to the BIS was a major concern to national governments, as expressed by Wilson later when he complained about having to factor in 'what

[345] Fforde, *The Bank of England and Public Policy, 1941–1958*, 566–606.
[346] As explained in Chapter I, section 2, sterling was divided into different types and resident sterling was the currency held by residents of the sterling area. See 'Exchange Control Retained', *Manchester Guardian*, 29 December 1958, 5.
[347] BIS, Annual Report 1959, 8 June 1959, 27.
[348] Ibid.

speculators might do'.[349] Overall the press was enthusiastic. The *Manchester Guardian* explained: 'The currency changes by the leading European countries were regarded yesterday in many parts of the world as a sign of complete economic recovery in the nations concerned.'[350] But with this recovery came more pressure on European currencies, starting with sterling.

3.1.2. The politics of convertibility in Europe

Convertibility was a condition of Marshall Aid just after the war. As we have seen, in 1947 the US wanted to establish European currency convertibility, not only to have an economically strong Europe opposing the Soviet Bloc, but also to make it a strong trading partner.[351] Negotiations for convertibility took place within the framework of the Organisation for European Economic Co-operation (OEEC), the predecessor of the Organisation for Economic Co-operation and Development (OECD). The organisation was set up to implement the Marshall Plan. The *Manchester Guardian* explained: 'Negotiations about this week-end's changes in international currency relations began, in fact, at the O.E.E.C. meeting a fortnight ago, when the wreck of the plan for a Free Trade Area caused an ugly outburst of Anglo-French ill-feeling.'[352] The negotiations were mainly among three leading European countries as the *Guardian* noted: 'It ought to be made clear that the new policy was discussed between the French, British and German Governments and then submitted to the other members of the O.E.E.C.'[353]

Once convertibility was established, European countries were divided into two groups: 'Weak-currency countries lobbied for more generous IMF quotas and increases in international

[349] Wilson, *Labour Government, 1964–70*, 32–3.
[350] 'A Sign of Full Recovery: How the Changes are Regarded', *Manchester Guardian*, 29 December 1958, 5.
[351] See Chapter I, section 1.
[352] 'Europe in Concert', *Manchester Guardian*, 29 December 1958, 4.
[353] Ibid.

reserves. Strong currency countries objected that additional credits encouraged deficit countries to live beyond their means.'[354] Britain was in the weak-currency group and was the most successful country in receiving international aid. This was mainly because of the importance of sterling. Germany, on the other hand, would have lobbied for more rigour and smaller quotas but after the war the country was under the control of the US. It was the 'poster child' of US policy in Europe and one of its strongest allies. France, another strong-currency country in the early 1960s, was lobbying for more rigour in the international system. President de Gaulle's claims to go back to gold were made in this spirit; the French wanted a more rigorous international system.

The IMF was a strong proponent of convertibility as it was one of the reasons for its existence. The Article of Agreements, Article I, section 4 stipulated that the purpose of the Fund was to 'assist in the establishment of a multilateral system of payments in respect of current transactions between members and in the elimination of foreign exchange restrictions which hamper the growth of world trade'.[355]

3.1.3. The consequences of convertibility and the end of parallel markets

Convertibility offers a unique example of capital controls being lifted suddenly. With this sudden shock, exchange rates were disrupted. I study the effect of this disruption using new exchange rate data. The new data show that parallel and offshore markets became obsolete. Sterling became both fungible and transferable; therefore, there was no reason to have different prices in different places. Leland Yeager argues that convertibility 'unified and broadened the

[354] Barry Eichengreen, *Globalizing Capital: A History of the International Monetary System*, second edition (Princeton, NJ: Princeton University Press, 2008), 112.
[355] Bretton Woods Conference, Final Act, Washington, Archive of the IMF (hereafter IMF), 22 July 1944, GD-48, 8329, 1944, 21.

markets in spot and forward exchange, made competition in them more keen, narrowed the spreads between buying and selling quotations'.[356] On the market the transition to convertibility was smooth and did not trigger an immediate crisis as might have been expected with more capital flowing in and out of London. The Bank of England dealers' report of 29 December 1958 noted that the 'first day of convertibility found markets a little confused at the start but later there was considerable activity here [in London] especially in dollars, French Francs and Swiss Francs'.[357] There was no major crisis or speculation against a specific currency as convertibility was seen as the harbinger of recovery in Europe.

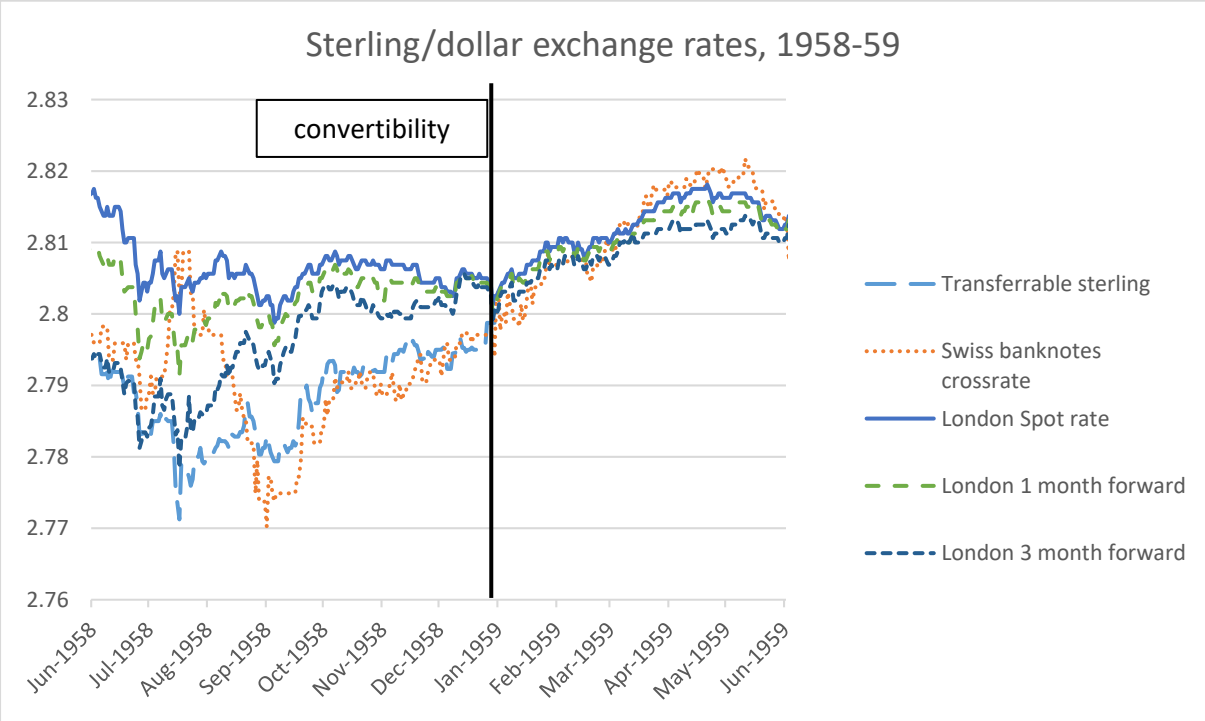

Figure 32 Parallel sterling/dollar exchange rates

Source: Accominotti et al., Swiss National Bank Archives and Bank of England dealers' reports (see text and data discussion in the introduction for details).

[356] Yeager, *International Monetary Relations*, 376.
[357] 'Dealers' report', 29 December 1958, London, archive of the Bank of England, C8.

Figure 32 highlights the effect of convertibility on five sterling/dollar exchange rates: the London spot rate; two forward rates (one and three months); a Swiss offshore rate; and transferable sterling. The data for transferable rates and the Swiss cross-rate have been collected from manuscript ledgers in the archives of the Swiss National Bank and the Bank of England. Forward and spot data come from Accominotti et al.[358] Transferable sterling ceased to exist with convertibility. All other exchange rates exhibited a smaller discount against the official rate. Convertibility unified the different sterling rates, reducing the scope for arbitrage.

The forward premia for both one and three months forward decreased quite significantly. When looking at the average daily forward rate 90 days before and after convertibility, discounts decreased 63% for one-month forward (from -0.06% to -0.04%) and 67% for three-month forward (from -0.15% to -0.09%). There is little evidence that the exchange risk diminished after convertibility as the risk of a sterling devaluation was just as high as before convertibility, if not higher. The lower discount came from the more liquid market with more arbitrage possibilities in Europe and New York.

The Swiss banknote rate is a cross-rate, calculated from the £/CHF and $/CHF rate. Before convertibility this rate offered the biggest discount relative to the spot sterling-dollar rate as it was a truly free market, without any central bank intervention.[359] This market was partly fuelled by speculators travelling to Switzerland to convert money illegally. This activity became less profitable with convertibility. Non-sterling area residents no longer needed to travel to Zurich with a suitcase full of cash to convert their unwanted sterling, reducing the arbitrage through this market.

[358] Ibid.
[359] As seen in Chapter I, section 4.

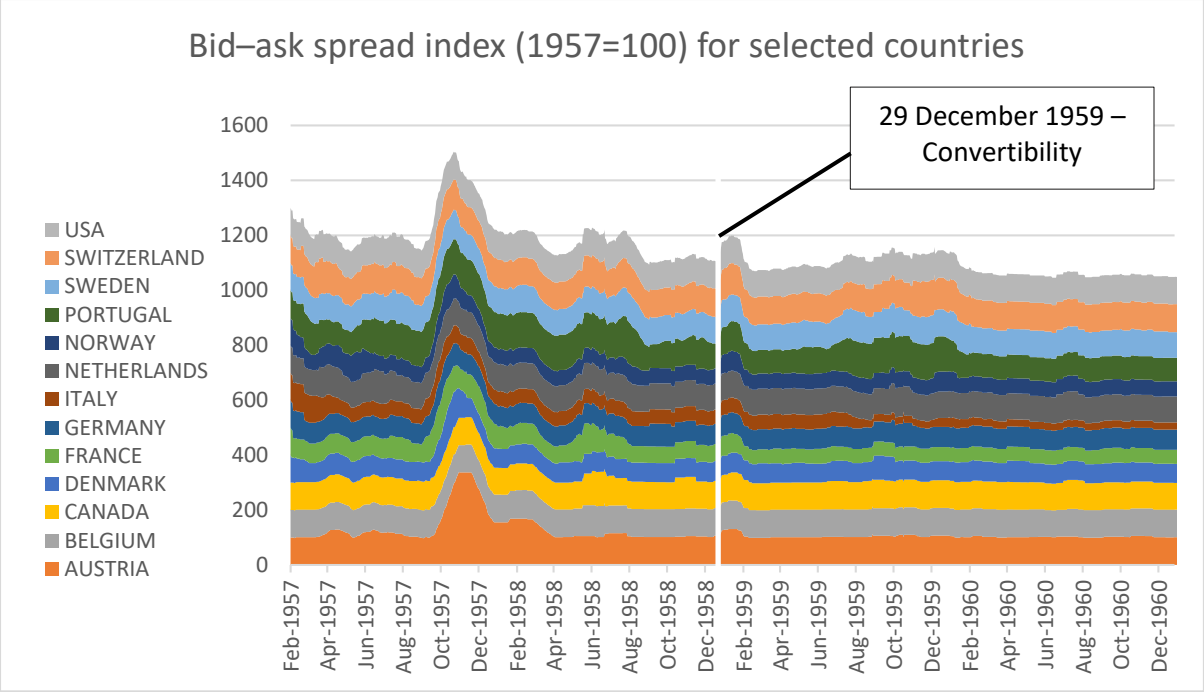

Figure 33 Thirty days' moving average data for 1957–60

Source: Accominotti et al.; computation by the author.

Note: The index is based on spreads before convertibility (February 1957 =100).

Foreign exchange markets across the world became far more integrated. But convertibility also had an impact on the London foreign exchange market. Just as in 1951, it would be reasonable to expect spreads to diminish as the market become more liquid and more integrated into markets abroad. But evidence of spread reduction is not as marked as in 1951. I use the same bid–ask spread index as I employed in Chapter I, section 3. Bid–ask spreads in the two years leading up to convertibility were, on average, 9.5% higher than after convertibility, but it is unclear whether this was mainly driven by convertibility alone. Figure 33 presents data from Accominotti et al. which has never been presented at such a disaggregated level.[360] The figure highlights that spreads experienced a slight increase just after convertibility, before settling at a lower level. The decrease in spreads, however, is not comparable with the spot market reopening in 1951. The reopening then had a decisive impact

[360] Accominotti et al., 'Currency Regimes and the Carry Trade'.

on spreads.[361] In 1951 spreads decreased by 70% between December 1951 and December 1953. Convertibility, on the other hand, had a limited effect on spreads; dealers did not change their behaviour.

Why did spreads not decrease significantly? In theory, convertibility increased the turnover and a more liquid market should have led to lower spreads. However, this ignores the different forces at play. Lyons has shown that the foreign exchange market today (and this applies also to the 1950s) is dominated by few players and a decentralised structure.[362] Higher turnover did not increase competition as the main market participants (large commercial and investment banks) did not change and the number of market participants remained the same. This explains the relatively stable spreads at this point.

In summary, convertibility was a quite smooth process; it did not trigger a run on sterling, as might have been expected with capital flow liberalisation. Convertibility did not make spreads diminish significantly, as did the 1951 market reopening. What it did was to reduce the discount of alternative markets when compared with the London spot market. If convertibility took place quite smoothly in terms of the market reaction, its consequences for the monetary authorities were profound. This is analysed in the following sections.

3.2. The theoretical debate at the time: Triffin versus the 'minority view'

For the Bank of England, Bretton Woods was a practical matter: How to make things work; how to maintain the peg. The solutions were technical: How to intervene, at what time and with which strategy. The Federal Reserve, on the other hand, played a more international role and

[361] See Chapter I, section 3, Figure 21.
[362] Richard K. Lyons, *The Microstructure Approach to Exchange Rates* (Cambridge, MA: MIT, 2006).

was worried about the stability of the international monetary system. This forced the Federal Reserve to explore theoretical questions and listen to economists. Both central banks were involved as their national currency was used as an international reserve currency. Sterling's role as a reserve currency, however, was more of the order of a legacy being used mainly by countries under British influence or in its former colonies. The Fed was printing the currency that was widely used for trade, investment and central bank reserves.

I argue that the Fed was better informed about the state of the international monetary system than the Bank of England, which was less interested in the ongoing debate. This explains why the Fed took such an interest in sterling, as they understood the key role of the secondary reserve currency for the stability of the international monetary system. The Bank of England and the British government took advantage of this position and leveraged support from the US while not having to impose tighter monetary policy at home. This echoes Schenk who argues that the UK convinced other governments of sterling's importance and therefore managed to 'attract considerable support for managing its retreat'.[363] But what Schenk's argument misses is that the Federal Reserve did not need much convincing. Indeed, the opposite is true, as the Federal Reserve did everything possible to avoid a sterling devaluation. New archives from the Federal Reserve show that it was aware of the threat sterling posed and wanted to defend the British currency even when the British government wanted to surrender it. Clearly, sterling played an absolutely central role in the stability of the system.

3.2.1. Triffin versus Despres, Kindleberger and Salant

The fundamental question of Bretton Woods was how to provide international liquidity (as contemporaries called it) that the global economy needed if it was to grow. Or, in more modern

[363] Schenk, *The Decline of Sterling*, summary page.

terms, how to provide a safe asset for central banks and global businesses to use. The Federal Reserve of New York summarised the issue in an internal memorandum: 'The method of providing international liquidity to meet the long-term growth needs of the world economy is haphazard, being based primarily on the rates at which gold is mined and is absorbed for nonmonetary purposes and on the position of the United States balance of payments.'[364] The supply of a global and stable international value-storing instrument was constrained by both the world supply of gold and the US's willingness to run a balance of payments deficit. Faced with this issue, contemporaries started to look for a solution, turning first to Triffin.

The dollar was the global currency, but in 1960 US foreign monetary liabilities exceeded US gold reserves.[365] This raised questions about the credibility of the dollar and, in 1963, the major central banks had more dollars in their vaults than the US could exchange for gold.[366] If all central banks went to the gold window, the US would quickly run out of gold and be forced to devalue the dollar. Therefore, the US put pressure on other countries not to use the gold window.[367] It was not clear if the dollar would be credible if the US did not hold gold in sufficient quantity. This is the case today, as the dollar is the main reserve currency without substantial gold backing; however, at the time this was not obvious.

Current literature likes to reduce the debate on Bretton Woods to two main viewpoints:[368] the 'mainstream' view, defended by Triffin; and the 'minority' view espoused

[364] 'Recent Proposal for the Reform of the International Financial System', internal memorandum from Clarke and Kotsonis to Holmes and 38 others, 19 July 1963, New York, Archives of the Federal Reserve, box 618606.
[365] Eichengreen, *Globalizing Capital*, 114.
[366] Ibid.
[367] Francis J. Gavin, *Gold, Dollars, and Power: The Politics of International Monetary Relations, 1958–1971* (Chapel Hill, NC: University of North Carolina Press, 2007).
[368] A good example can be found in Emmanuel Farhi and Matteo Maggiori, 'A Model of the International Monetary System', working paper (National Bureau of Economic Research, May 2016).

by Despres, Kindleberger and Salant.[369] The main difference between the two was whether the dollar could survive the Bretton Woods system if gold reserves at the Fed did run low.

Triffin first flagged issues with the Bretton Woods system in 1947.[370] He wrote about the issues of the international monetary system until well after the Bretton Woods system had collapsed. He is remembered for the 'Triffin dilemma' which stipulates that the US had an interest in providing dollars to the global economy to foster growth. Yet, by supplying dollars to the world economy, US policy-makers eroded confidence in their currency by making their commitment to convert dollars into gold less credible. By formulating the issue well ahead of time, Triffin inaugurated an important debate and offered a solution to the problem. Instead of using national currencies as central bank reserves, central banks should pool their reserves at the IMF more than they had done in the past to create liquidity for the international system. His solution would eventually be implemented in the form of Special Drawing Rights (SDRs) at the IMF. Other economists at the time offered alternative solutions.

One of these was the 'minority' view. Others had similar ideas at the time but Despres and his co-authors were famously the first to present their main point in a 1966 article in the *Economist* entitled 'The Dollar and World Liquidity: A Minority View', as well as in a more complete article.[371] The US long-term investments abroad did not mean the dollar was threatened, as would be the case if the US ran a trade deficit. One function of the dollar was to provide reserves for foreign central banks. This would hold whether the US had enough gold or not, as other countries would trust the currency. Reserve accumulation by foreign central

[369] Emile Despres, Charles Poor Kindleberger and Walter S. Salant, *The Dollar and World Liquidity: A Minority View* (Washington, DC: Brookings Institution, 1966).
[370] Barry Eichengreen, *Exorbitant Privilege: The Rise and Fall of the Dollar* (Oxford: Oxford University Press, 2012), 52.
[371] Despres, Kindleberger and Salant, *The Dollar and World Liquidity*; Emile Despres, Charles Kindleberger and Walter Salant, 'The Dollar and World Liquidity: A Minority View', *Economist*, 5 February 1966, 526–9.

banks meant that the dollar was credible and the balance of payments deficits need to be understood in this light.

The US, Despres et al. argue, was simply borrowing short and lending long. It was the world's banker, providing dollars to the world economy. This was all made possible because the actual US balance of payments deficit hid a trading surplus, coupled with a capital account deficit created by US investments abroad.

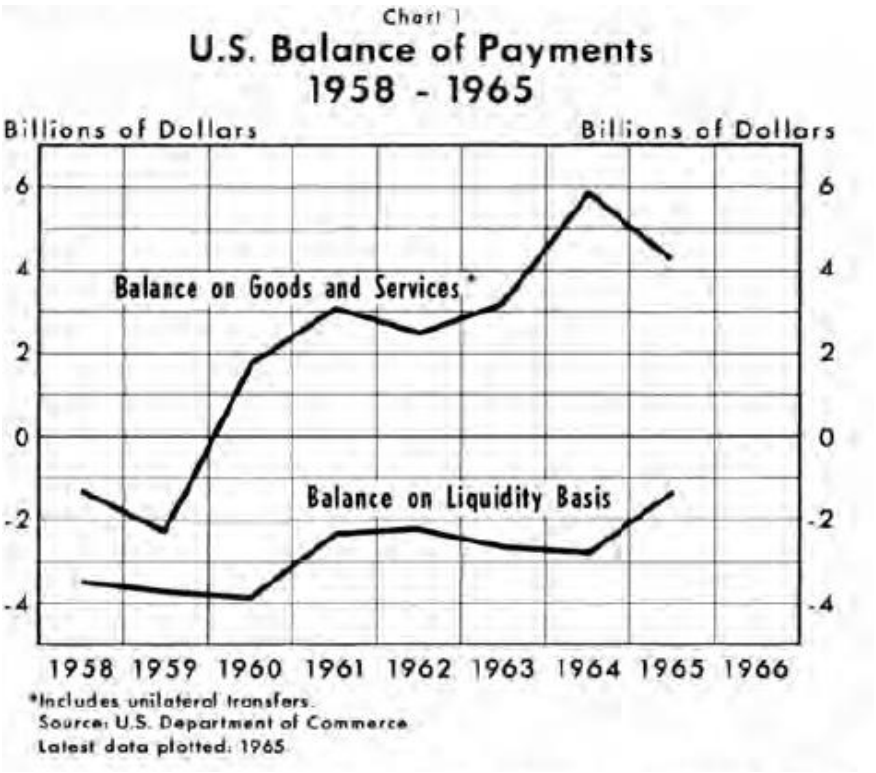

Figure 34 US Balance of Payments decomposed

Source: 'The United States as World Banker', Federal Reserve of St. Louis, September 1966, 6.

Figure 34, reproduced from a BIS annual report, shows that the US was exporting more than it was importing. However, because of investment and its role as banker to the world, it was running a deficit. This deficit, Despres et al. argue, was sustainable and they would eventually be proved correct as after Bretton Woods the US continuously ran deficits without

its currency being substantially devalued. 'It must be recognised that trading in financial assets with the United States means a United States "deficit"; United States capital provides not only goods and services, but liquid assets to Europe, which means holding dollars.'[372] The US was able to fulfil the function better than any other state not only because of its economic power, but also because it had a more developed financial centre and a currency offering cheaper intermediation.

A limitation to Despres et al.'s view was that despite the US having foreign assets in the form of overseas investments, as well as foreign liabilities in the form of dollars held abroad, they ignored the maturity mismatch.[373] Just as a solvent bank can fail if there is an irrational run on its reserves, the US, despite not having an inherent structural balance of payments deficit, would have to devalue if all central banks demanded repayment of their dollars in gold immediately at the Fed gold window. This could happen at any point, for example, if US inflationary policy cast doubt on its commitment to maintaining the gold parity. Beyond these opposing views, many other ideas were circulating at the time, some of which are presented in the next section.

3.2.2. The view of the Federal Reserve

The Fed, I argue, had a clear understanding of the international monetary system and its risks. It also understood how the sterling balances and continuous sterling crisis were a threat to US interests. Schenk has suggested that the UK was 'able to convince other governments that sterling's international role was critical for the stability of the international economy' and therefore attract foreign support.[374] I conclude, however, that the Fed, thanks to its in-depth

[372] Emile Despres, Charles Kindleberger and Walter Salant, 'The Dollar and World Liquidity: A Minority View', *Economist*, 5 February 1966, 528.
[373] Eichengreen, *Globalizing Capital*, 115.
[374] Schenk, *The Decline of Sterling*, summary page.

economic analysis, arrived at this view on its own. It did not need persuading and was convincing the US government that supporting sterling was very much in its own interest. The Bank of England, on the other hand, was mainly hoping for a dollar devaluation. This was unrealistic as the US had become a superpower and was unlikely to defer to other countries.

Here I show how the Fed perceived Triffin, as well as alternative solutions to the problems of the Bretton Woods system, at a time when it was starting to become clear that solutions would have to be found. The Federal Reserve spent a considerable amount of time and resources on questions involving the international monetary system. As early as 1959, there is evidence of research memoranda in reply to Triffin's publications.[375] The Fed was vehemently opposed to him. They saw him and his writings as a direct attack on their approach to the international monetary system. In a memorandum about the work of Professor Angell (another economist working on the topic), the Federal Reserve qualified Angell's research as a 'careful and dispassionate piece of analysis', in 'striking contrast to Triffin's pamphleteering'.[376]

In 1963, the Fed's research team summarised the latest research in a memorandum entitled 'Recent Proposals for the Reform of the International Financial System'.[377] This memorandum was sent to 38 staff members, including president Hayes and vice president Coombs. It summarised various reforms for the international monetary system proposed by economists and policy-makers.

[375] Robert Triffin, *The Future of the European Payments System* (Almqvist & Wiksell, 1958); Robert Triffin, *Europe and the Money Muddle: From Bilateralism to near-Convertibility, 1947–1956* (New Haven, CT: Yale University Press, 1957); Robert Triffin, 'The Return to Convertibility: 1926-1931 and 1958? Or Convertibility and the Morning After?', *Banca Nazionale Del Lavoro*, 1959; Robert Triffin, *Gold and the Dollar Crisis: The Future of Convertibility* (New Haven, CT: Yale University Press, 1961).
[376] 'Professor Angell's Article on the Reorganisation of the International Monetary System', Peter Fousek to Charles Coombs/Alfred Hayes, 12 March 1962, New York, Archives of the Federal Reserve, box 618606, 1.
[377] 'Recent Proposal for the Reform of the International Financial System', internal memorandum from Clarke and Kotsonis to Holmes and 38 others, 19 July 1963, New York, Archives of the Federal Reserve, box 618606.

The proposals included those by two British policy-makers: the then leader of the Labour opposition, Harold Wilson, and the Conservative Reginald Maudling, Chancellor of the Exchequer (1962–4). The inclusion of two British politicians along with international economists is noteworthy. It emphasises the main argument of this dissertation, namely, that the Federal Reserve saw the UK, and hence sterling, as a major player, and British proposals for the international monetary system were taken seriously. The other proposals were by the economists Robert Triffin, Roy Harrod, Maxwell Stamp, James Angell and Suardus Posthuma, a director at the Nederlandsche Bank.[378] Despres et al. are not mentioned as they had not yet published their proposal.

Posthuma's plan was closer to a return to the Gold Standard as 'Central banks would agree to a uniform ratio of gold to international reserves (say 60%)'.[379] Maudling was suggesting that the IMF 'operate a special Mutual Currency Account (MCA)' for which membership would be limited to 'major countries'.[380] Stamp, Wilson and Harrod all suggested the creation of an IMF currency (or SDR, a name that would be adopted later). The amounts of currency to be created varied widely from $2 billion (Maudling's proposal) to $60 billion (Harrod's). Both Triffin's and Harrod's suggestions were summarised by the Federal Reserve as to 'change IMF into a world central bank'.[381]

The Federal Reserve formulated 'Major Economic Criticisms' of the different proposals. Overall, it was sceptical of several of the plans which suggested the IMF should create liquidity through SDRs or something similar for three main reasons. First, the IMF-

[378] Roy Harrod, *Alternative Methods for Increasing International Liquidity* (London: Robbins, 1961); Stamp's suggestions are mainly expressed in Maxwell Stamp, 'The Fund and the Future', *Lloyds Bank Review*, 1958; Maxwell Stamp, 'Changes in the World's Payments System', *Moorgate and Wall Street*, 1961; James W. Angell, 'The Reorganisation of the International Monetary System: An Alternative Proposal', *The Economic Journal* 71, 284 (1961), 691–708.
[379] 'Recent Proposal for the Reform of the international Financial System, internal memorandum from Clarke and Kotsonis to Holmes and 38 others', 19 July 1963, New York, Archives of the Federal Reserve, box 618606.
[380] Ibid.
[381] Ibid.

issued currency would 'allow deficit countries to avoid difficult adjustment problems and to require the surplus countries either to undertake the burden of adjustment or to finance deficits'.[382] In other words, it would allow the UK to run constant deficits without any adjustment of fundamental economic variables at the cost of the US. And this is exactly how the 1960s unfolded. The absence of conditionality on loans was a matter for the Federal Reserve to contend with. Second, a new international currency would create a 'potentially inferior currency media that would tend to increase the instability of the international financial system'.[383] SDRs could lose credibility thereby producing a run on gold, which would be even more destabilising. Third, the Fed thought that these plans 'contain considerable inflationary potential'.[384] This applied to various plans, including Triffin's suggestion that the IMF should increase deposits by 3–5% a year. The IMF as world banker would simply be issuing fiat currency without gold backing.

3.2.3. The view of the Bank of England

The structure of the Bank of England in the 1960s was different from the Fed's. If the Fed resembled a modern central bank with a focus on research, the Bank of England was more like a private bank. This makes sense as the institution was not nationalised until 1946. William Allen argues that in the 1950s the 'paucity of external communication went in parallel with a paucity of internal discussion'.[385] Allen also notes that during the investigations of the Radcliffe Committee, Governor Cobbold argued that 'the Bank of England must be a Bank and not a study group'.[386] The situation improved in the 1960s but any comparison of the Bank

[382] Ibid., 12.
[383] Ibid.
[384] Ibid.
[385] William Allen, *Monetary Policy and Financial Repression in Britain, 1951-59* (New York: Palgrave Macmillan, 2014), 205.
[386] Ibid., 206. Allen quotes from The [Radcliffe] Committee on the Working of the Monetary System, Principal Memoranda of Evidence, volume 1 (London: HMSO, 1960), 52.

with the Fed shows that it was not a research institution and struggled to approach questions of the international monetary system in a non-dogmatic and systematic manner. Its solution to the international liquidity problem was to increase the price of gold by forcing the US to devalue the dollar. Though this solution was logical and implied devaluing only one currency as opposed to most other overvalued currencies including sterling, it was not politically viable. It meant the US voluntarily undertaking a devaluation that would be unpopular with the electorate.

As seen in Chapter I and above, economic theory was not the Bank's forte during the Bretton Woods period. The Bank saw its role as more pragmatic. The main intellectual and operational international currencies figure at the Bank was Roy Bridge.[387] Here, I present previously unused archives on Bridge's personal ideas about the international monetary system. Bridge joined the Bank at the age of 18 and was employed there for 40 years. Archival records show that he was one of the key players on questions of foreign exchange markets during the Bretton Woods period.[388] Capie called him 'the master of foreign exchange but also a considerable character'.[389] He was a pragmatic individual, putting the interests of the Bank first but with a keen political sensibility.[390]

In a secret internal draft memorandum in 1961, Bridge summarised his understanding of the problem: 'Triffin is right that the present system cannot survive and that something must be done about the reserve currencies. But, as in the past, he is right too soon.'[391] Bridge stood with Triffin and did not believe the dollar could survive on confidence alone. It needed gold backing. This could be done by adjusting the price of gold, something he thought was not only

[387] Capie, *The Bank of England*, 158.
[388] Most of the archives either mention him, are notes to his attention or are notes written by him.
[389] Capie, *The Bank of England*, 404.
[390] This is my own assessment after reading hundreds of his memoranda and telephone transcripts.
[391] 'The Fundamentals', top secret draft, Roy Bridge, 22 September 1961, London, Archives of the Bank of England, C20/3.

‘inevitable’ but also ‘desirable or even essential in order to provide a sound base for a durable international system’.[392] An SDR-like solution, as Triffin was suggesting at the time, was needed in the short term but would not be a long-term solution, Bridge wrote. Therefore, the strategic goal of the Bank was twofold: ‘a) to encourage fundamental thinking in regards to reserve currencies’ and ‘b) to work towards [a rise in the international gold price] taking place as a co-ordinated step rather than in conditions of confusion’.[393] On the latter point, Bridge thought that the ‘chances of success are pretty slender’, foreseeing, correctly, that the rise of the price of gold would happen as an emergency measure rather than a planned move.[394] In 1961, Bridge’s approach was pragmatic. He did not want to lead efforts to find a solution but thought the solution would arise once the system was close to collapse. By this point the Federal Reserve had a clear overview of the theoretical literature on the topic and was planning scenarios. Bridge, on the other hand, seemed more optimistic of a solution increasing the price of gold, which would have been a difficult political move in the US.

In 1961, writing about Triffin’s reserve pooling proposal, the *Economist* reflected this lack of understanding: ‘the British, of all people, still appear to be sniffing suspiciously at the most radical features of this idea, instead of seizing on them with delight’.[395] The journal was pleased to note that ‘Macmillan did remark, encouragingly, that ideally there should be a central banking system for all the countries of the free world’ but ‘his thoughts do not yet seem to have been translated into practical policy in the Treasury and Bank of England’.[396] The Bank was behind on thinking about ways to increase liquidity without changing the price of gold, but was still hoping for an increase in the price of gold which would mean a dollar devaluation.

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[392] Ibid.
[393] Ibid.
[394] Indeed, when the gold market was abruptly closed and the Gold Pool disbanded in March 1968, the rise of the price of gold was uncontrolled and the result of a crisis. See The Fundamentals, top secret draft, Roy Bridge, 22 September 1961, London, Archives of the Bank of England, C20/3.
[395] ‘Sniffing at Triffin’, *Economist*, 15 April 1961, 208.
[396] Ibid.

The Fed, on the other hand, was opposed to a dollar devaluation as it would benefit both the USSR and South Africa, something that was 'politically unacceptable'.[397]

3.2.4. Triffin and the debate on the stability of the international monetary system

At Bretton Woods conference in 1944 there were calls for an international currency. John Maynard Keynes' unsuccessful bancor is one such example.[398] Once the Bretton Woods system started to operate, the search for a new international currency ceased as most nations were satisfied with the new international monetary framework. This honeymoon period lasted for the first few years of the system, and then Triffin decided to become involved. He initiated the debate on the stability of the international monetary system, acted as a whistleblower and remained at the heart of the debate well after the Bretton Woods period ended. Even today, he is frequently quoted in the debates on the international monetary system.[399] Robert Solomon, chief international economist at the Federal Reserve Board, described Triffin as 'an incisive analyst and theorist, a prolific author, and an indefatigable reformer of international monetary arrangements'[400] and the *Economist* shared this view when mentioning that 'Professor Robert Triffin, perhaps the most interesting name of all' in the context of an OEEC conference.[401]

So, what was Triffin's influence in the 1950s and 1960s? One simple way to quantify Triffin's impact is to turn to newspaper articles mentioning his name: this is likely to give a

[397] Capie, *The Bank of England*, 187.
[398] The bancor was proposed by Keynes at the Bretton Woods conference. It was meant to facilitate trade among nations. Current account deficits and surpluses were meant to be converted into bancors which were fixed to gold and in terms of national currency. Calls for an international currency go back to Keynes's plan for an international clearing union (CU) which he first put forward in September 1941.
[399] For a review of the debate, see, for example, Michael D. Bordo and Robert N. McCauley, 'Triffin: Dilemma or Myth?', BIS working paper 684 (19 December 2017).
[400] Robert Solomon, 'Potential Gains from and Obstacles to International Policy Co-ordination', in *Evolution of the International and Regional Monetary Systems: Essays in Honour of Robert Triffin*, ed. Alfred Steinherr and Daniel Weiserbs (Basingstoke: Palgrave Macmillan, 1991), 26.
[401] 'Sniffing at Triffin', 208.

broader picture of the importance of the debate Triffin initiated. Modern online newspaper databases allow one to search for articles containing a keyword. In this instance the chosen keyword is 'Triffin'. This is a good choice as his family name is unusual and less likely to generate false hits (as, say, searching for 'Johnson' would). The search not only gives an idea of Triffin's own influence but is likely to give an idea of the debates on the international monetary system. Unlike other authors, Triffin's principal focus was the international monetary system and the 'Triffin dilemma'. Most of his bibliography at the time has a single theme, as can be seen by the list of his main books published during the period (see Figure 35, which also gives the number of newspaper articles mentioning him by name).

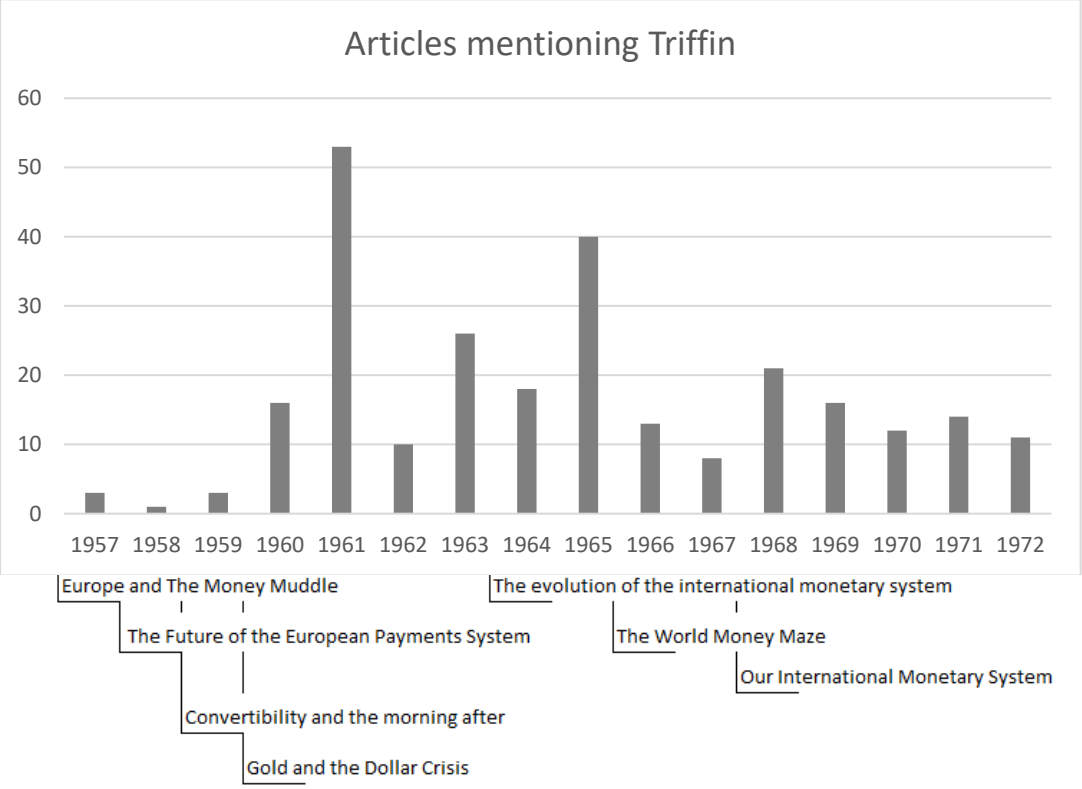

Figure 35 Articles in the *Washington Post, New York Times, Guardian, Observer* and *Economist*

Source: Data for all newspapers and journals other than the *Economist*, ProQuest's online database. Data for the *Economist*, the digital archive.

Figure 35 shows that Triffin's popularity with the press peaked in 1961 and again in 1965. Before 1960, Triffin was barely mentioned, with an average of just over two mentions a year in the selected sample from 1947 to 1959. With convertibility and increased pressure on US gold reserves, his analysis became more interesting to central bankers and the general press. In that sense, Bridge was right when he wrote that Triffin was 'right too soon'.[402]

3.3. The creation of the Gold Pool[403]

After looking at the theoretical question of convertibility and the stability in the international monetary system, this section turns to the practical issues of the Bretton Woods system. To redress the fundamental flaws described in the previous section, policy-makers put in place short-term fixes. Two of these, the Gold Pool and the international swap network, are analysed in this and the following sections.

The Gold Pool was a buying and selling syndicate created in 1961 to manage the price of gold in London. It was intended to support the London gold price, reinforce the stability of the international monetary system and allow the US to maintain its commitment to keep the price of gold at $35 an ounce. The Gold Pool started as a gentleman's agreement managed during monthly meetings of central bankers at the Bank for International Settlements. The Gold Pool is one of the most ambitious examples of central bank cooperation ever: it involved the pooling of reserves, the sharing of profits and losses, and constant information-sharing among central banks.

[402] 'The Fundamentals', top secret draft, Roy Bridge, 22 September 1961, London, Archives of the Bank of England, C20/3.
[403] This section is in part based on joint work with Michael Bordo and Eric Monnet. The section, however, contains new data and information not presented in the joint work, and the text has also been substantially revisited. See Michael D. Bordo, Eric Monnet and Alain Naef, 'The Gold Pool (1961–1968) and the Fall of Bretton Woods. Lessons for Central Bank Cooperation', *National Bureau of Economic Research Working Paper*, 24016 (2017).

Recall that after the opening of the gold market in 1954, the gold price was kept under control by the Bank of England.[404] Convertibility, however, changed everything. The London gold market was no longer immune to outside pressure as capital controls were lifted. A steady gold price was important to the Bank of England, but even more important to the Federal Reserve as the guarantor of the official gold price. The question of who would bear the cost of selling gold in London when there was excess demand arose. Initially, the Federal Reserve worked directly with the Bank of England before involving other European countries under the umbrella of the Gold Pool.

I argue that the gold crisis of 1961 was the first test for the 'real' Bretton Woods system with freer capital flows. The rise of the gold price made the Bank of England understand that the cost of maintaining the price at around $35 an ounce could become extremely high. The Bank started to question the role of the UK in maintaining the gold price. Negotiations with the Federal Reserve opened. If Bretton Woods was about cooperation, as Toniolo and others claim, this is where cooperation started to assume centre stage.[405] Practical questions now arose: What information was the Bank willing to share with the Fed? Who should one call at 4 am in New York if there was a run on gold? I show how the Bank of England was often reluctant to cooperate, even though it was constantly pushed to do so by the Federal Reserve. If US–UK cooperation started slowly and grew progressively, cooperation with other European powers took even longer. France felt sidelined from the start and progressively followed its own path, suggesting an alternative monetary system, one that was closer to the gold standard and more rigorous, as it had constantly been doing since the interwar years.[406]

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[404] See Chapter I, section 5.
[405] Toniolo and Clement, *Central Bank Cooperation*.
[406] Eric Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', in *Global Perspective on the Conference and the Post-War World Order*, ed. Gilles Scott-Smith and Simon Rofe (Basingstoke: Palgrave Macmillan, 2017); Michael D. Bordo, Eugene N. White and Dominique Simard, 'France and the Breakdown of the Bretton Woods International Monetary System', in *International Monetary Systems in Historical Perspective*, ed. Jaime Reis (New York: St Martin's Press, 1995); Eichengreen, *Globalizing Capital*, 113–14.

This section gives a detailed overview of how the Gold Pool was created. Earlier literature mentions the creation of the Gold Pool, but mainly using secondary literature. This is the first detailed analysis, which draws on the Bank of England, New York Fed and BIS archives.[407] I give a detailed historical analysis of the daily movements in the London gold price for the first time here. It also gives a detailed overview of cooperation between the Fed and the Bank. The literature simply takes for granted that Bretton Woods was a period of cooperation; this section gives a detailed overview of how that cooperation slowly evolved.

The Gold Pool was initially a covert scheme, but its existence soon leaked to the public. It made the link between the credibility of the US dollar and the London gold market apparent to all. This was an endorsement by the US of the London gold price as a barometer of the health of the international monetary system. And once that was made public, there was no going back. Gold Pool members supporting the gold price would have to unite or abandon the Bretton Woods agreement altogether.

3.3.1. The London gold price, a global responsibility? Cooperation between the Federal Reserve and the Bank of England

The 1961 US presidential election put a strain on the gold price and forced the Bank of England who was responsible for monitoring the London market alone since 1954 to cooperate with the Fed. As I showed in Chapter I, section 5, the cost of maintaining this market was around $2 million a month, which meant that the Bank sold that amount of gold to the market every month.[408] This was a reasonable cost, considering all the advantages the market gave both the City and sterling. After convertibility, pressure started to rise, as did the cost of intervening in

[407] For a description based on secondary sources, see, for example, Barry Eichengreen, *Global Imbalances and the Lessons of Bretton Woods* (MIT Press, 2007). The creation of the Gold Pool is also described in Toniolo and Clement, *Central Bank Cooperation*.

[408] This was not an actual cost the Bank was obliged to pay, but the price it decided to spend to avoid 'undue fluctuation' in the market. This mission was something the Bank thought was necessary.

the market. In late August 1960, in the run-up to the US presidential election, gold gained value in London as speculators feared the dollar was going to be devalued. The presidential candidate, John F. Kennedy, had delayed his commitment to keep the official $35 an ounce price of gold until the end of October 1960. Coombs noted that for that reason many central banks – the Bank of Italy especially – were buying large quantities of gold in London.[409] However, they were reluctant to speculate openly against the dollar by going to the US gold window, as this would have been politically damaging. Even if London gold was more expensive than gold at the US gold window, it allowed central banks to remain anonymous buyers and avoid pressure from US.

In the September 1960 IMF meeting, the Bank of England informed the Fed of the situation 'having assumed some responsibility for selling gold to maintain orderly market conditions' Coombs later wrote.[410] The Bank was essentially doing the Fed's job and 'was in the awkward position of being squeezed out of the market by other central bank buyers whenever gold became available'.[411] Because of heavy central bank buying, the Bank had to stay out of the market to avoid the price from rising too much. On 13 September 1960, as the gold market started to heat up, the Bank of England contacted the Fed to inform them of a rise in the 'international price of gold' as the Bank worded it.[412] The word 'international' hinted that it was not the sole responsibility of the Bank of England. The Bank warned that the price had reached '$35.15, the highest level since the London market was reopened in 1954'.[413] Figure 36 illustrates the price reaching $35.20 in early September 1960.[414] The Bank identified four main causes: the Bank of Italy buying gold; few sales from other central banks; 'tension

[409] Coombs, *The Arena*, 49–50.
[410] Ibid., 50.
[411] Ibid.
[412] 'Letter from H. C. B. Mynors to Alfred Hayes', 13 September 1960, London, Archives of the Bank of England, C43/420.
[413] Ibid.
[414] $35.20 was the price at which it was profitable for central banks to buy gold at the Fed and sell it in the London gold market.

in the international situation, i.e. Cuba, Congo, Berlin'; and demand 'from the Middle East' growing after 'the assassination of the Jordanian Prime Minister'.[415]

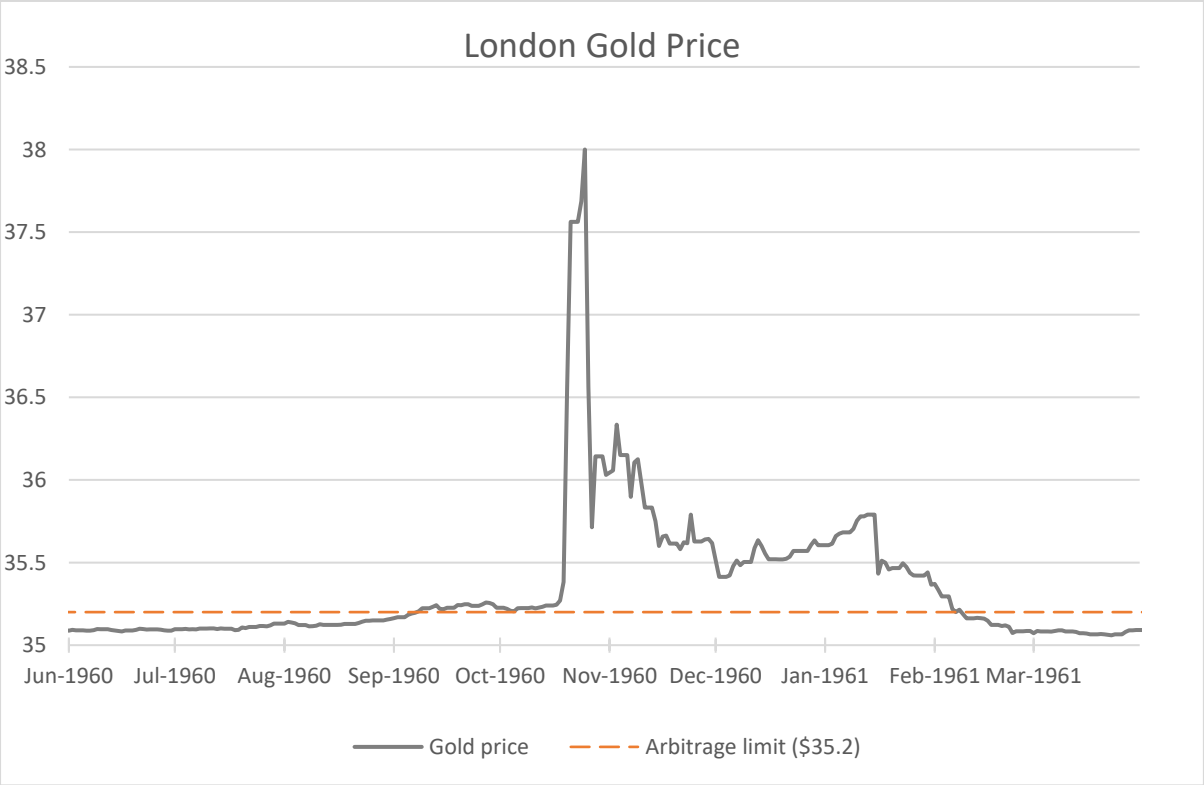

Figure 36 Daily London gold price (11 am fixing) and gold price arbitrage limit

Source: Dealers' reports (C8).

In October 1960, the intra-day gold price reached $40/oz with the 11 am fixing setting as high as $38. Bridge commented, 'this was the really rough period during which turnover was very large and the price surpassed $40 on Thursday, 20th October.'[416] The run in October is best explained by an insider, E. E. Mocatta, a dealer and descendant of the Mocatta who

[415] In Cuba Fidel Castro had just taken power, thereby increasing US concerns; in Congo (later renamed Zaire) Sese Seko Mobutu gained to power; in Berlin the idea of a wall was making its way after a five-day ban on West Germans entering East on 1 September; and in Jordan Prime Minister Hazza' Barakat al-Majali, who had taken power in 1959, was assassinated. The quotes are from letter from H. C. B. Mynors to Alfred Hayes, 13 September 1960, London, Archives of the Bank of England, C43/420.

[416] 'Roy Bridge to Charles Coombs', 24 November 1960, London, Archives of the Bank of England, C43/320.

founded the London gold market in 1671.[417] He was replying to questions from the New York Federal Reserve:

> I feel that the week-end of the 14th October was the turning point in the gold market. During that week-end the Continent and, in particular, Switzerland, as well as Canada, seem to have decided that Senator Kennedy was going to be elected with a good majority. They considered that this would bring about more inflation in your Country [the US] and, as a result, your balance of payments would suffer further. They considered, therefore, that a devaluation of the dollar in the first half of next year was a real possibility, and done soon, it could be blamed on the former Republican administration.[418]

Table 13 summarises the destination of gold purchases on the London market during the October run. It is likely that the majority of these went exclusively to private customers in the countries listed.[419] Most of the purchases in question went to Switzerland, Canada and the US. Most of the Canadian sales and around 20% of the Swiss sales went to private US speculators, according to Mocatta: 'We feel, however, that the majority of the Canadian sales were ultimately being purchased by citizens of the United States, and a proportion of the Swiss ones also.'[420] This would mean that a third to half of the sales during the run went to US private citizens speculating on Kennedy winning the election and a potential devaluation of the dollar.[421] The rest was probably speculators operating through Switzerland, or Swiss nationals. Central banks did not seem to be the principal buyers. For the whole of 1961, estimates by the Bank of England show that of the $1600 million of new gold placed on the London gold market, 37.5% went to central banks and 62.5% to 'hoarders, Industry and the Arts'.[422]

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[417] See Chapter I, section 5.
[418] 'Draft letter from Mocatta (gold dealer) to Roche (FRBNY) held at the Bank of England for information', 22 November 1960, London, Archives of the Bank of England, C43/320.
[419] Even if it were possible that some of the orders were passed by central banks through private banks in their respective countries, this is certainly not the case for US transactions and probably not for the Swiss and Canadian either. Bank secrecy meant that, in theory, the end buyer was unknown to the London dealers (and to the Bank of England) but in practice this information always leaked to the public.
[420] Draft letter from Mocatta (gold dealer) to Roche (FRBNY) held at the Bank of England for information, 22 November 1960, London, Archives of the Bank of England, C43/320.
[421] Actually, 29%–47%. This is computed from Mocatta's estimate, who guessed that 20% of Swiss sales went to the US.
[422] 'L. T. G. P. to Bridge', 17 April 1962, London, Archives of the Bank of England, C43/320.

Sales to…. (In gold bars)	Week ending 22 October 1960	Week ending 29 October 1960
Switzerland	2180	1245
Canada	240	488
U.S.A.	145	269
France	68	
Germany	47	23
Middle East	40	20
Far East	37	77
Paraguay	20	
Italy	20	
Belgium	4	7
Argentina		9
TOTAL	2801	2138
Total turnover	$39	$31

Table 13 Gold sales by country

Source: Letter from Preston to Roche, 1 November 1960, London, Archives of the Bank of England, C43/320.

After circulating a copy of the estimates (see Table 13), Preston wrote to Parsons of the Bank of England to express his concern about sharing information with the New York Federal Reserve: 'If we were to give new production as well as the other figures our own operations could be calculated.'[423] Arguably, his concern sprang from the different activities of the Bank as both seller for South Africa and buyer for the EEA (see Chapter I, section 5). Briefly put, the Bank had privileged access to South African gold and did not want the US to know how it used this privilege as the Bank was not obliged to reveal the scale of its operations on behalf of South Africa. It was important to the Bank not to lose its South African business to Swiss competitors, something that eventually happened in 1968.

Increased market pressure would soon force the Bank to be more cooperative and transparent. The US was willing to help, but needed to know how much the Bank of England was spending on intervention. On 16 November 1960, Coombs and Roche gave their private

[423] 'Letter from Preston to Parsons', 3 November 1960, London, Archives of the Bank of England, C43/320. A typo in the original text has been amended (replacing 'are' by 'our').

telephone numbers to the Bank of England. They wanted to be available 'out of normal telephone contact' at the Federal Reserve.[424] This shows how seriously the New York Federal Reserve took the price of gold in London at that time, as Coombs asserted.

A few days later, in November 1960, Bridge wrote to Coombs to report on the crisis over the past weeks. From 26 October to 2 November, Bridge reported: 'Demand continued but we managed to introduce some stability into the market around 256s. [£12.16] and $36 at a cost which we did not regard as exorbitant.'[425] At this point the Bank of England was still bearing the cost of intervention alone, while continuing to lobby for US support.[426]

The following week (3–9 November), Bridge had to intervene heavily: 'So on the Thursday we decided to get all our weapons out in an endeavour to get a grip on a market which we were afraid might otherwise again run out of control as it had done two weeks before.'[427] But the pressure was too strong: 'As we expected, there was pretty heavy buying; we had to let the price up to around $36 3/8, and to give a good deal of gold to prevent it from going up much farther.'[428]As Chapter I argued, this was the Bank's strategy – defending the price, but not at any cost. Once the pressure was too great they would let the price rise before attempting to push it down again.

Speculation was the main issue, not increased demand from industry, the arts or foreign central banks. As an illustration of this frenetic speculation, Bridge reported an anecdote of a 'fellow' who flew overnight from Chicago to buy five bars of gold before travelling by 'car to the airport and flew straight home again!'[429] In reaction to increased speculation, on 14 January 1961 the US introduced a ban on US citizens holding gold outside of the country. Holding gold

[424] 'Note from Preston to Bridge and Parsons on information and emergency contacts', 16 November 1960, London, Archives of the Bank of England, reference C43/320.
[425] 'Roy Bridge to Charles Coombs', 24 November 1960, London, Archives of the Bank of England, C43/320.
[426] Coombs, *The Arena*, 51–2.
[427] 'Roy Bridge to Charles Coombs', 24 November 1960, London, Archives of the Bank of England, C43/320.
[428] Ibid.
[429] Ibid.

within the US was already illegal for most citizens under the Gold Reserve Act 1934. Private gold ownership was allowed under certain conditions, for example, for coins with 'sentimental or collectors' value' and uses for the industry.[430] The new interdiction against holding gold abroad was a consequence of the outflows during the October 1960 run.

In February 1961, Roche queried whether the Bank of England knew of any central banks buying and selling on the market.[431] This was forbidden under the rules of the Gold Pool, but before the Pool was set up, the Federal Reserve had justified suspicions that the Italians were buying gold in London, thereby propping up the price.[432] In reply the Bank official told Roche in a telephone conversation that they were 'not free to discuss the details of business transacted with the Bank's customers'.[433] Customers could buy and sell gold without having their identity revealed, as is the case of private banking today. Roche was 'obviously embarrassed' and 'then said that it was hoped in the Federal [Reserve] that in view of the closer relations now existing we would tell him when we sold gold to central banks'.[434] The Fed was more liberal with such information, openly discussing the operation of the Bank of Canada on behalf of the Bank of England.[435] However, the Bank of England did not seem ready to cooperate fully with the Federal Reserve at this stage, despite trying to make a case for US support to maintain the price of gold. The Bank feared that revealing too much would lead the Americans to cut the British privileged access to South African gold, or worse, have South

[430] This information comes from an article in the *Wall Street Journal*: 'Back in "Circulation": The $20 Gold Piece, Now Selling for $70', *Wall Street Journal*, 18 March 1968, 6.
[431] Hand-signed note to Bridge and Parsons, 28 February 1961, London, Archives of the Bank of England, C43/320.
[432] In a memorandum, Assistant Secretary of State for Policy Planning Smith wrote that more international monetary coordination 'might have been instrumental in dissuading the Italians from converting their dollar reserves into gold', Glenn W. LaFantasie, ed., *Foreign Relations of the United States, 1958–1960, Foreign Economic Policy, Volume IV. Office of the Historian* (Washington, DC: United States Government Printing Office, 1992).
[433] 'Hand-signed note to Bridge and Parsons', 28 February 1961, London, Archives of the Bank of England, C43/320.
[434] Ibid.
[435] As shown in Chapter I, section 4.

Africa move its business to Zurich. At the same time, the burden of supporting the gold price in London was rising and help was needed.

In August 1961 pressure on the gold market mounted again. Bridge reported that it was 'probably the biggest day since January' and that there had been 'some central bank buying' but also heavy demand from Berlin.[436] Bridge shared his concerns with the Federal Reserve that 'unless there was a detente on the political front, demand was expected to continue and I personally saw little prospect of holding the price below $35.20 for long, short of selling very large amounts.'[437] This was a clear threat: Bridge would let the price of gold increase, knowing very well that this would have negative consequences for the credibility of the dollar. Sanford offered to earmark $40 million of gold in New York for the Bank of England's account. This meant in effect that the Federal Reserve was paying for the Bank of England's intervention in the London gold market. At this point the Gold Pool became a solution. Instead of losing gold on the London gold market, central banks could pool reserves with other countries. The next section, therefore, examines the politics of setting up the Gold Pool at the BIS.

3.3.2. The politics of the Gold Pool creation

The Gold Pool was a project between the US and most of the European nations, all participating with different quotas. The proposal was first made by France at the end of 1960 but was rejected in Basle.[438] Later, the US made a similar proposal, as it realised that this would be necessary to keep its commitment to convert dollars into gold at $35/oz at the gold window. In autumn 1960, British officials approached the US to ask whether the Fed would assist the Bank in

[436] 'Telephone record', Bridge to Sanford, 30 August 1961, London, Archives of the Bank of England, C43/320.
[437] Ibid.
[438] Eric Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts'; Eric Monnet, 'Une Coopération à La Française. La France, Le Dollar et Le Système de Bretton Woods, 1960–1965', *Histoire@Politique. Politique, Culture, Société* 19 (2013).

monitoring the London gold market.[439] However, until the Gold Pool was formally settled it would take almost another year, during which the Bank of England continued to manage the gold market with some financial support from the Federal Reserve as we just saw. The BIS took a leading role in facilitating talks on the creation of the Gold Pool and providing a venue for discussion.

Negotiations took place at plenum meetings at the BIS and in bilateral negotiations. After the October 1960 spike in the gold price, France suggested in a BIS meeting that they should 'coordinate central bank interventions on the gold market at the international level by means of a gentlemen's agreement, and to reactivate the 1936 Tripartite agreement'.[440] The Bank of England opposed this. It believed that coordinated intervention would threaten the role of sterling as a reserve currency; the Federal Reserve, for its part, opposed any return to a tripartite agreement as it would have 'opened the door to a potential devaluation of the dollar'.[441]

In a private meeting with BIS officials, Alfred Hayes, president of the New York Federal Reserve, explained that he would sell gold only for reasons pertaining to monetary stability. Gold in the London market would eventually 'flow into hoarding channels'.[442] This would be unfair to US citizens, who were not allowed to buy gold. The US did not want to take part in an official scheme that would potentially supply gold to hoarders, but was willing to operate anonymously on the gold market with the Bank of England. The French leveraged the

[439] Coombs, *The Arena*, 51–2.
[440] Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', 2017.
[441] Ibid.
[442] Extract of minutes from visit to New York, meeting between Hayes, Holtrop, Roosa, Sanford, Guindey and Mandel, H. H. Mandel, 3 October 1960, Basle, BIS Archives, BISA 2/1, vol. 4.

fact that the US and UK intervened alone in the market as proof that 'the international monetary system was used by the United States and the United Kingdom for their own policy objectives'.[443]

In January 1960, the BIS issued a memorandum evaluating what at the time was called the gold club. At this early stage, members of the club would not have to pay 1% tax for buying gold at the Federal Reserve. The memorandum mentioned the possibility of the Federal Reserve intervening in London: 'If the Federal [Reserve] should decide to supply gold loco [located in] New York at $35 for shipment to London to feed the London Market, it should be easily possible to reduce the price of gold in the latter centre.'[444] However, the BIS was still sceptical of putting such a club together. McDonald of the BIS banking department wrote that he was unsure whether the club was 'a good thing or equally favourable to all participants' and even that 'direct interests of the B.I.S. [could] suffer'.[445]

3.3.3. How the Gold Pool worked

The Gold Pool started operating informally and was piloted by the international expert commission on gold and foreign exchange at the BIS. This was a meeting of the heads of the foreign exchanges of the member central banks every two months. Operations of the Pool started before final quotas were set in a spirit of cooperation and informality characteristic of the Basle meetings of the BIS. The scheme started as an experiment that could be disbanded at any point. It was expected to be temporary in nature but actually ran from 1961 to 1968. This was impressive for such a scheme; the Gold Pool had no formal enforcement mechanism and it relied on the good faith of its members to commit not to buy gold on the London market.

[443] Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', 2017.
[444] 'The Gold Club', internal note signed Donald H. McDonald, 11 January 1962, Basle, Archives of the Bank for International Settlements, BISA 7.18 (15), HAL2, 1.
[445] Ibid.

Yet, the Bank of England was generally informed of the origin of the transactions, and no central bank would have risked being noticed buying gold in London.

The Gold Pool comprised two syndicates, one a gold-buying syndicate, the other a gold-selling syndicate. Initially, the Pool started as a gold-selling syndicate to prevent the price of gold from rising. The buying syndicate was later set up to allow central banks to buy gold in London at a competitive price and without adding pressure to the London market price. The Bank of England had discretion on how to manage the market, and Bridge and his team of dealers were in charge of operations to avoid any purchases upsetting the price.

Gold Pool initial quotas

	Per cent	Million US$
United States	50%	135
Germany	11%	30
United Kingdom	9%	25
Italy	9%	25
France	9%	25
Switzerland	4%	10
The Netherlands	4%	10
Belgium	4%	10
Total		**270**

Table 14 Respective quota by member and initial share

Contrary to what contemporary literature on intervention suggests, member central banks elected to keep the existence and operations of the gold syndicate secret.[446] However, on 8 March 1962, the scheme was leaked to the press.[447] Publicity probably worked in favour of

[446] Lucio Sarno and Mark P. Taylor, 'Official Intervention in the Foreign Exchange Market: Is it Effective and, If so, How Does it Work?', *Journal of Economic Literature* 39, 3 (2001), 839–68.
[447] 'Clip of an article published in the *Journal de Genève*', sent to Roy Bridge, 8 March 1962, London, Archive of the Bank of England, C20/3.

the Pool as no single speculator was willing to gamble against all the western central banks combined. Single intervention operations were not communicated to the public.

Members had different quotas, representing their initial contribution to the scheme. The quota was also important at the end of each month when the Pool settled its accounts, to decide how much each country was entitled to purchase from the Pool surpluses. The US was the main contributor, followed by Germany, which was sympathetic to US efforts after the war. Thus, if the syndicate purchased $100 million in a month when the gold price was low, Belgium, for example, could choose to take up to 4% or $4 million (see Table 14).

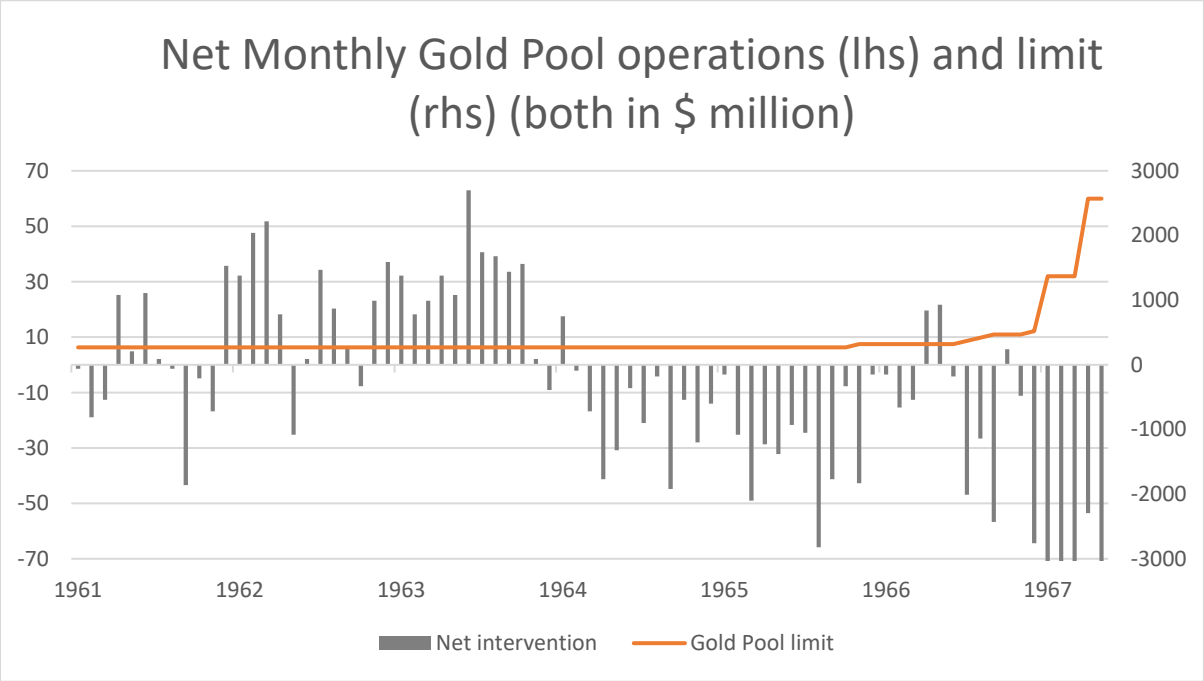

Figure 37 Bank of England net monthly operations on the London gold market and upper limit of the Gold Pool, November 1961–March 1968

Source: Dealer's reports for gold intervention (C8).

Note: Most of these operations would have been done on behalf of the Gold Pool.

The original limit for the gold-selling syndicate was set at $270 million. That was the maximum the Bank of England could spend to support gold. Periodically, from 1965 onward, the limit was increased (see Figure 37). When the Gold Pool closed in March 1968, the limit

had reached $2570 million, close to ten times the initial amount. Figure 37 shows the Bank of England's net monthly interventions during the Gold Pool period. After its creation in 1961 the syndicate was mostly involved in accumulating gold but started losing gold to the market from 1964 onwards. As discussed in Chapter III, section 1, this reversal was partly linked to troubles with sterling and the dollar.

3.3.4. The creation of the Gold Pool and the global price of gold

How successful was the Gold Pool? Two events stand out that highlight the effect of the Gold Pool on the market. First is the date the selling syndicate was created: 6 November 1961.[448] On that day, central banks brought reserves together to maintain the price of gold, but more importantly, they committed not to buy gold on the London gold market, easing the pressure. Without central banks buying gold, the demand side of the market would drop and the price likely decrease. It is impossible to know the exact amounts the central banks were purchasing directly in London so this is not quantifiable. The syndicate, however, was still secret, so it had no signalling value to private market participants. On this date, the expectation would be to see the price fall if many central banks withdrew from the market, or remain steady if central banks were not buying heavily before their commitment to stay out of the market.

The second key date is the day the existence of the Gold Pool was leaked: 8 March 1962. This signalled to the market that most western countries were now united behind a gold price of $35.20. Operationally, gold operations were still the same, with the Bank of England dealers trying to avoid sharp rises in price. The only difference is that they now operated on behalf of the Gold Pool and no longer on behalf of the Bank of England with some support from the US.

[448] At this point, France and Belgium had not officially joined, but it is unlikely that they bought gold on the London market at this stage.

It would be reasonable to expect the gold price to fall after the creation of the Pool and after the leak, showing that the Gold Pool was having a positive effect. Looking at the gold price only on these two dates provides little evidence of the Pool having a significant effect. The creation of the Gold Pool was followed by a fall in the gold price (see Figure 38). It is unclear whether or not this was a direct consequence of intervention. Equally, the leak might have caused a slight downward trend in the price, but the effect is not obvious.

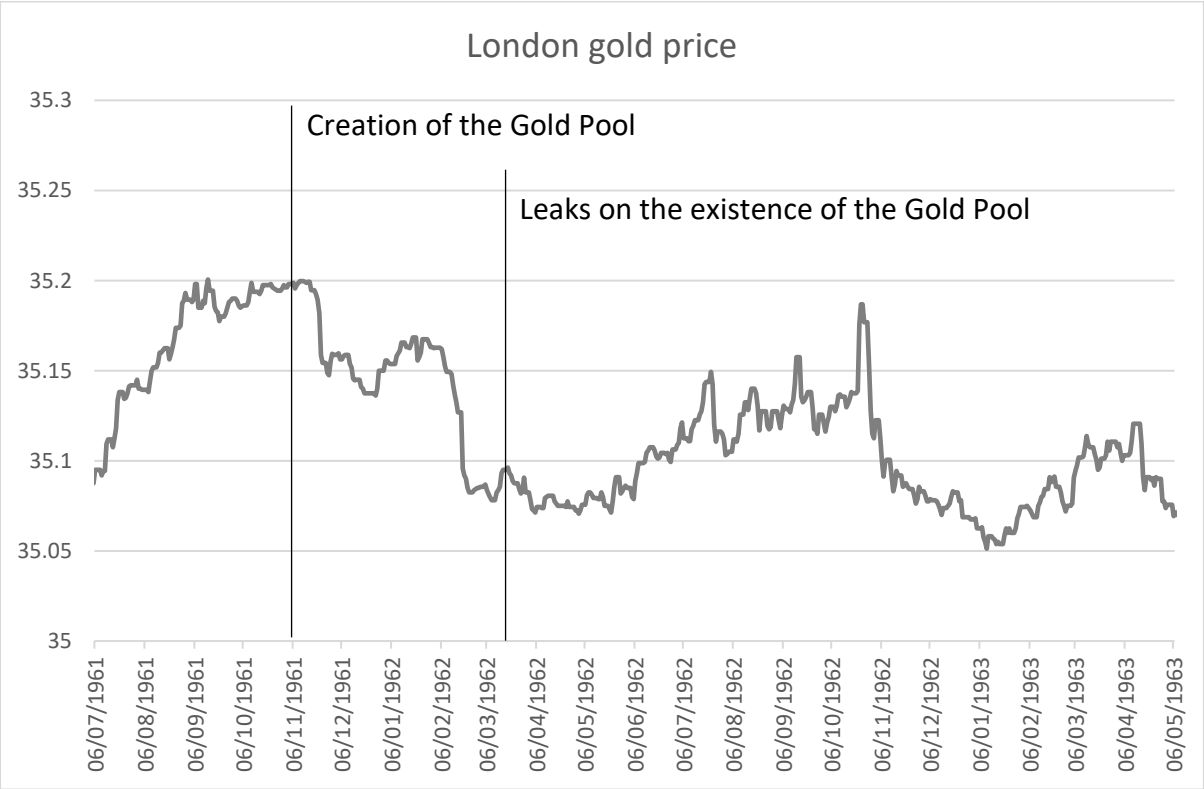

Figure 38 London gold price around two key dates

Source: Dealers' reports (C8).

What is more difficult to demonstrate is the counter-factual; if the Gold Pool had not been created and central banks had bought gold on the London market in a disorderly fashion, what effect would this have had on the price of gold? This is, of course, impossible to answer,

but it would have been unlikely for central banks to purchase large quantities of gold in London without any coordination or without triggering political intervention by the US.

It might not be surprising that the Gold Pool had a limited effect on the gold price once put in place in November 1961, as the Bank of England continued to intervene as before. The gold reserves of the Bank at that time were $1.3 billion (with backing of $17 billion from the US) compared with the $270 million in the initial Gold Pool.[449] Before November 1961, the Bank was defending the price of gold on its own account with support from the Federal Reserve. After the creation of the Gold Pool the same dealers were operating, the only difference being that the funds now also came from European countries and central banks did not operate in the London gold market directly.

3.4. Cooperation and the Fed swap network

The Gold Pool was the first palliative put in place after the introduction of convertibility. The second palliative was the US swap network. Swaps refer to one central bank exchanging domestic currency against foreign currency with another central bank. For example, the Bank of England could exchange sterling against dollars with the Fed. The two central banks would decide to reverse the transaction at an agreed forward exchange rate. The goal of these swaps was to provide foreign currency when needed. The main swap partner for the Bank of England during the Bretton Woods period was the US. Bordo et al. estimated that almost 57% of all the $15.3 billion swap contracts of the Federal Reserve between 1962 and 1971 were with the Bank of England.[450] The Bank was the Federal Reserve's biggest customer when it came to swaps. The benefits of swaps were mutual, as Capie stressed: 'The essence of the swap network that

[449] UK reserve figure from the 'EEA ledgers', 6 November 1961, London, Archives of the Bank of England, 2A141/13. US reserve figures from FRED, M1476CUSM144NNBR for November 1961.
[450] Bordo, Humpage and Schwartz, *Strained Relations*.

revolved in the main around the Federal Reserve was to provide, in the case of the Bank, dollars for intervention purposes and the Fed with sterling with which it could purchase dollars that otherwise might be converted into gold.'[451]

This section argues that the Federal Reserve international swap network was initially designed to ease the pressure on US gold reserves within the US commitment to the Bretton Woods Agreement. Swaps ended up being mainly a tool for managing sterling. The Bank agreed to join the network as a favour to the Federal Reserve, but within a few years, swaps had become the centrepiece of British foreign exchange management. They were part of a complex network of loans put in place to help to maintain the fixed exchange rate of the pound. This loan network was the joint effort of the US and the UK and the two countries often ended up negotiating further loan agreements with the rest of Europe.

Why was the US so keen to grant the UK access to loans? US policy-makers recognised that sterling was the dollar's first line of defence. A sterling crash would trigger a run on the dollar as it would reveal the weakness of sterling as an international currency and investors would in turn fear for the stability of the other international currency, the dollar. Under normal circumstances, it would be reasonable to expect that a depreciation of sterling would lead to an appreciation of the dollar. However, this mechanism did not apply as, in the context of the Bretton Woods system, the two currencies had a similar function and it was clear to investors that if sterling fell, the dollar would come under pressure. The US wanted to avoid a run on the dollar at all costs.

This section shows how the Bank was in a position where it needed help and this led to a warmer relationship with the Federal Reserve, unlike in the early 1950s. The Bank and the Fed were in contact by telephone every day. I am the first to examine the records of these

[451] Capie, *The Bank of England*, 228.

conversations in order to trace the evolving relationship. The swap network enhanced the stability of the international monetary system, but only in the short term. The long-run 'liquidity problem' raised by Triffin remained. As some observers at the time noted, the dollar and sterling supporting each other were inherently prone to instability as both currencies were liable to speculative attacks, which made the Bretton Woods system more unstable.

3.4.1. The Bank of England's use of swaps

The 1960s marked the rediscovery of swaps by central bankers in Europe who had used them in the 1920s.[452] Swaps re-emerged when the Swiss National Bank suggested that the Federal Reserve establish a swap line because the Swiss Bank was experiencing large dollar inflows and the Federal Reserve did not want these dollars converted into gold. The Federal Reserve then established a swap network with most European central banks to act as a buffer for its gold reserves.[453] The Fed wanted to avoid these banks using the gold window to convert their dollars into gold. The Fed could use the swap line to borrow in a European currency and buy dollars back from a European central bank which had accumulated them. The US would also put political pressure on European countries to hold a larger proportion of their reserves in dollars. The aim was to avoid too heavy a gold drain from the US, which would undermine the credibility of the dollar. From 1962 onward, swap lines were key to the US policy to defend gold and provided dollar liquidity to European central banks.[454]

The Federal Reserve took the initiative in creating its first swap line with the Bank of England. The Bank though only agreed as a gesture of good faith and did not see any advantage in taking part in the network. Soon, however, swap contracts would become the pound's

[452] Capie, *The Bank of England*; Richhild Moessner and William A. Allen, 'Banking Crises and the International Monetary System in the Great Depression and Now', *BIS Working Papers*, 333 (December 2010), 25.
[453] Coombs, *The Arena*.
[454] Bordo, Humpage, and Schwartz, *Strained Relations*, 149.

lifeline. Since the fate of the pound and the dollar were interlinked, the Federal Reserve provided this support with the aim of avoiding a crisis contaminating the dollar. The Bank of England first agreed to a $50 million swap line with the Fed, which was later increased to $500 million. A note from the governor in March 1962 about a discussion with Sir Denis Rickett from the British Treasury reads: 'Sir Denis agreed that there was no merit in this but that it might be necessary to go along with the American proposal as a symbol of international co-operation.'[455]

In million dollars	BoE drawing % of all countries drawing	BoE drawing	All countries drawing
1962	**0%**	0	0
1963	**0%**	0	50
1964	**88%**	1370	1550
1965	**100%**	1765	1765
1966	**69%**	625	910
1967	**66%**	1650	2487
1968	**58%**	2045	3503
1969	**46%**	795	1719
1970	**22%**	400	1834
1971	**0%**	0	30
1972	**0%**	0	19

Table 15 Bank of England drawing on US swap networks

Source: Bordo, Humpage and Schwartz, Strained Relations. Calculations by the author.

Note: The table does not show US drawings from other countries.

Despite early reluctance for their use, swap agreements became the centrepiece of British exchange rate policy in the 1960s. After a small drawing by the Federal Reserve on the $/£ swap line in 1962–3, the credit instrument became solely a tool for the Bank of England to acquire dollars until 1971. Table 15 presents annual drawings by the Bank of England. It

[455] 'Extract from the governor's note dated 21 March 1962 on a talk with Sir Denis Rickett', 21 March 1962, London, Archive of the Bank of England, C43/742.

highlights the relative importance of the UK when compared with the other 14 participants in the network (Austria, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Mexico, the Netherlands, Norway, Sweden, Switzerland and the BIS). From 1964 to 1967, the UK constituted on average 80% of the Federal Reserve dollar lending of the 15 nations able to draw from the Federal Reserve loan facility.

The use of swap lines and the creation of the Gold Pool led to a warmer relationship between the Federal Reserve and the Bank. As described in Chapter I, section 4 in the 1950s the Bank had been reluctant to share information on foreign exchange market intervention or to use the services of the Federal Reserve for intervention in New York. The two institutions had always been in close contact, but the Bank had been unwilling to share too much information. This changed in the 1960s and even more so when the Bank started to use the swap network to support sterling. In 1964, with more telephone conversations with the Fed, the Bank was more willing to share information on its intervention strategy and pass intervention orders to the Fed, leaving its discretionary power on operations.[456] The Bank would give the Federal Reserve a limit and leave operations to the discretion of the latter. An extract of a telephone conversation memorandum best exemplifies this shift. Fousek, of the New York Fed, reported on a conversation with Preston of the Bank:

> ‘Preston called to say that he will be sending us an order to buy for their account up to £5 million at 2.7900. They hope they will have some beneficial effect from the announcement coming out of London (incomes policy). Should the spot rate move up, they would like us to use this opportunity and push up the 3 month forwards. For that reason, he is giving us a discretionary order for £10 million, value March 18, between 2.7714-25. If spot should start moving, depending on the situation, by moving up the forwards a little further, we

[456] These observations come from the various daily telephone conversation records at the Federal Reserve from 1964 onwards (New York, archive of the Federal Reserve, box 617015).

might thereby get a beneficial effect for the spot rate. Should the spot really start moving, Blackler should be informed at home after 2:30 our time.'[457]

In this telephone call the Bank delivered instructions for operations to be done overnight in New York. The Bank left the Fed discretion but gave permission for Blackler to be called at home if the situation became extremely worrying. In the 1950s the Federal Reserve could intervene only at the $2.78 lower band when things were going badly. In this quote, there is an order for $2.79 on the spot market and the operations are left to the discretion of the Fed. The Bank shared its strategy to try to benefit from good news and push the pound up. On the forward market the Federal Reserve was given discretion over £10 million, with the goal of improving the forward market with expected positive spillover effects on the spot market, which was the Bank of England's main focus. The total discretion of over £15 million is quite substantial, as the average daily intervention (including in New York and London) in 1964 was £6.4 million. The Federal Reserve had discretion to spend double the average daily intervention if it felt the situation required it. This unique example is only anecdotal but is representative of changes in the daily telephone conversations between the two central banks from 1962–3 onwards, as reflected in many similar memoranda. The Federal Reserve was given both more discretion and more information about the intentions and activities of the Bank of England. Capie mentions that the 1964 Bank Rate rise was the first time that the Bank consulted the Fed in advance.[458]

On a daily basis, agreements to swap currencies were made informally and quickly. For example, on 11 September 1964, Fousek reported that Blackler 'informed [him] that he will be needing $15 or 20 million for Tuesday and will send us a cable on Monday. (This will be

[457] 'Telephone conversation with Mr. Preston of the Bank of England', Fousek to files, 16 December 1964, New York, Archives of the Federal Reserve, box 617015.
[458] Capie, *The Bank of England*, 193.

another swap drawing.)'[459] Fousek wrote in his note that he was 'informed' that the Bank needed swaps giving the impression that such a request was never denied. Once the limit was agreed, the swap lines were an easy facility for the Bank of England to use. Amounts were agreed by telephone and confirmed via telegraph, making it easy for the Bank to obtain dollars within a day or sometimes less. The Federal Reserve noted in a 1964 memorandum that 'undrawn amounts under swap arrangements with [the Bank of England, the German Federal Bank and the Netherlands Bank] may be considered available without prior consultation.'[460] Therefore, swaps became one of the Bank's preferred ways of accessing dollar credit.

Swaps were almost risk-free for the two parties as they included a collateral in currency backed by the other country. From the point of view of the Federal Reserve the swaps were not only repayable in dollars (and hence did not bear any currency risk), but were also backed by a collateral in pounds. If the Bank of England were to devalue while swap lines were still open, there was no risk to the Federal Reserve as the repayment would be in the original dollar amount; and in the unlikely event of a default, the Fed would still hold sterling as a collateral. The low risk associated with swap contracts explains the low interest rates. Bordo et al. explain how interest payments worked: 'The creditor central bank invested the foreign currency that it acquired from the debtor central bank for the term of the swap in a time deposit or in some other interest-earning asset. (The debtor would do likewise with any unused balances.)'[461] In addition to bearing little interest, the unused balances could be reinvested, offsetting part of the interest payment.

Swaps between central banks were off-market accounting operations; they were a simple trade of IOUs and so had no impact on the foreign exchange market. They did not affect

[459] 'Telephone conversation between Fousek and Blackler', Fousek to files, 11 September August 1964, New York, Archives of the Federal Reserve, box 617015
[460] 'Market offers of foreign currencies in case of emergency', B. E. MacLaury to file with copy to Coombs, Sanford, Fousek and Roche, 5 March 1964, New York, Archive of the Federal Reserve, box 616110.
[461] Bordo, Humpage and Schwartz, *Strained Relations*, 151.

the money supply in either country opening a swap line or drawing on it (as long as the funds were not used). The Bank of England could then decide to use the money drawn from the swap line to intervene in the foreign exchange market, and this would influence exchange rates and the money in circulation. But until the funds were used to intervene or pay a third party, swaps remained purely theoretical operations and bore no consequences in the real world. This changed if the Bank decided to communicate the opening of a new swap line, which was the case in some rescue packages in the 1960s. The purpose of these rescue packages was to communicate to the market the willingness of the Bank of England to defend the pound. Otherwise, swaps were simply international reserves created 'out of thin air' as Coombs described it.[462]

3.4.2. Swap contracts as a short-term liquidity solution?

Swap contracts provided dollar liquidity to the Bank to defend the pound. They were designed as a short-term solution to temporary imbalances. Swap contracts were issued for three months but could be rolled over, as they often were. Table 16 highlights that, between 1964 and 1968, the Bank drew close to $1.5 billion on average every year, giving it a large dollar-denominated debt. This was not temporary as the Bank constantly rolled over swap contracts. The press was aware of the short-term nature of the swap facilities. In 1963, the New York Federal Reserve reported comments in the British press: 'the agreement increases only short-term liquidity, and that it should be followed by greater Anglo-American cooperation in permanently increasing world liquidity.'[463]

[462] Coombs, *The Arena*, 76.
[463] 'Foreign Press Comment on the Dollar-Sterling Swap', memorandum from Kotsonis and Serex to Coombs and 35 others, 5 June 1963, New York, Archives of the Federal Reserve, box 617015.

In million dollars	Swap line limit	Bank of England drawing	Bank of England Repayment	Outstanding debt to the Federal Reserve System
1962	50	0	0	0
1963	500	0	0	0
1964	750	1370	1170	200
1965	750	1765	1490	475
1966	1350	625	750	350
1967	1500	1650	950	1050
1968	2000	2045	1945	1150
1969	2000	795	1295	650
1970	2000	400	1050	0
1971	2000	0	0	0
1972	2000	0	0	0

Table 16 Annual summary of swap limits, drawings, repayments and outstanding debt

Source: Bordo, Humpage and Schwartz, *Strained Relations.*

Table 16 demonstrates that the Bank of England had an outstanding swap position with the Federal Reserve in most years. From 1964 to 1969, the average outstanding was $646 million. During the same period the Bank's dollar reserves were $476 million on average and total reserves were $1479 million on average, so that 43% of the Bank's reserves were short-term swap borrowings.[464] Almost half of the reserves the Bank owned during that period were short-term US credit. Swaps thus came to be much more than a temporary liquidity facility; they were an inherent part of British reserves. The UK was treated favourably as Table 15 highlights and this demonstrates the importance of sterling for the Federal Reserve.

The confusion on the maturity of swap credit lines was such that in 1966, even the UK government, in pretence or in fact, did not know that these instruments were temporary. On January 1966, James Callaghan, Chancellor of the Exchequer, met Coombs. According to a note, he 'tended to assume that the Fed. swap could be rolled over beyond six months'.[465] The Chancellor had only recently learnt that 'the concept of the swap was that it should be for three

[464] Data are computed using daily figures from the EEA. See sources in the introduction.
[465] 'Note for the Record', I. P. Bancroft to the record, with copy to Walker, Rickett, Goldman and Galpin, 7 January 1966, London, Archive of the Bank of England, C43/49.

months in the first instance with one extension of a further three months'.[466] This highlights the privileged position of the UK when it came to swaps. The strategic importance of the pound meant that US policy-makers, and especially Coombs, were extremely lenient when it came to dollar credit. The Chancellor's surprise that these facilities were short-term reflects the extent to which these instruments gave the government breathing space. Efforts to improve the balance of payments and balance the budget could easily be deferred if there was an unlimited supply of cheap dollars. This meant that the UK had to make less sacrifices on fiscal and monetary policies than other countries and was still able to maintain its Bretton Woods parity.

Swaps were more than a short-term liquidity solution for the UK, they were a feature of the Bretton Woods system. Did this enhance the stability of the international monetary system? Certainly, it helped avoid immediate crises, as Chapter III argues. But did it improve the inherent stability of the Bretton Woods system? This is unclear. Contemporary observers noticed how it could increase the instability of the international monetary system. In a press review, the Federal Reserve noted how the UK Labour Party, before gaining power in 1964, was critical of swaps. The memorandum noted that the press was echoing 'Labour's reservation about the effectiveness of the [swap] agreement on the ground that it "placed us in a position in which two currencies, both liable to attack, were trying to support each other"'.[467] The dollar was inherently weak and prone to attack, as Triffin and others revealed. The dollar was then used to support sterling. In turn, a weak sterling could trigger attacks on the dollar. Swap networks certainly were a useful short-term fix, but they did little to increase the long-term stability of the international monetary system.

[466] Ibid.
[467] 'Foreign Press Comment on the Dollar–Sterling Swap', memorandum from Kotsonis and Serex to Coombs and 35 others, 5 June 1963, New York, Archives of the Federal Reserve, box 617015.

3.4.3. Other forms of credit

Swaps with the Federal Reserve quickly became the Bank's preferred credit instrument. Swaps were not communicated to the public, did not involve conditionality and could be agreed quickly and informally. This section explores the different sources of foreign exchange (mainly in dollars) available to the Bank of England and what their advantages and drawbacks were. Table 17 presents the sources of foreign currency at the disposal of the Bank of England. Privacy was a major concern for the Bank which wanted to avoid communicating any losses or emergency loans unless they were significant enough to reassure the market.

	Own reserves	Federal Reserve swaps	BIS facilities or 'Basle Arrangements'	IMF facilities (SBA, GAB and SDRs)	Private loans
Amount available (1960-1971)	Up to reserve amount (average $1,773 million)	$50-$2000 million	$200-$2000 million	Up to $2000 million	Up to third party's willingness to lend
Conditionality	None	None	None	None in the early 1960s but progressive introduction of conditionality	None
Process	Internal	Telephone call and written confirmation	Request at Basle meeting or directly to members	Formal process	Private or through Eurodollar syndicate
Availability	Instantaneous	One day or less	Relatively quickly	Longer process	Relatively quickly
Public/private	Published every 3 months in the Quarterly Bulletin	Drawings completely private	Private or communicated when needed	Public or often disclosed/leaked to the public	Often leaked or public
Term	No term	3 months renewable	Short-term	Medium to long-term	Negotiable
Cost/Interest	None or interest-bearing for US Treasury bills	Close to Treasury bills	Negotiated on ad hoc basis	1.5% per year on SDR	Market rates (usually higher than other forms of credit)

Table 17 Schematic view of the Bank of England's foreign currency credit instruments

Credit sources in Table 17 are classified from left to right in order of increasing term (the short-term instruments are on the left, longer term instruments on the right). The Bank had reserves that were immediately available, but they were both limited and published regularly (see Chapter III, section 3). Publication meant that any change would be noted by the market and had the potential to trigger a run on sterling. Therefore, using most of the Bank's reserves, even to successfully defend sterling, was pointless as it would eventually bite back when reserves were published showing serious losses.

Swaps were favoured for their convenience (they were one telephone call away) and their total privacy. The Federal Reserve would communicate to the public only the limit of the swap line with the Bank of England and never the amount drawn. This meant that a swap could be raised without the market being informed.

The third dollar credit instrument shown in Table 17 was BIS agreements, otherwise known as Basle Arrangements. These were first used by Britain in March 1961 when sterling came under stress after a revaluation of the German mark and Dutch guilder of 5%.[468] It started as a short-term loan agreement which was to be repaid by 'the reflux of speculative funds or, if the reflux did not occur reasonably quickly, by recourse to the IMF'. These loan facilities were the last step before having to publicly apply for funds at the IMF. In addition to the Basle Arrangements, the UK also had access from 1965 to a Basle Group Arrangement. This special facility was intended to counter the effect of the conversion of sterling balances held overseas. The facility took the form of a swap agreement between the UK and the central banks of Austria, Belgium, Canada, Germany, Italy, Japan, the Netherlands, Sweden and Switzerland, as well as the BIS.

[468] F. T. Blackaby et al., *British Economic Policy 1960–74: Demand Management*, second edition (Cambridge: Cambridge University Press, 1979), 12.

The IMF was the lender of last resort and the UK approached the institution only when strictly necessary, generally alongside other measures. The Fund offered various lending facilities that the Bank used: the Stand-By Arrangement (SBA) from 1952; the General Arrangement to Borrow (GAB) from 1961; and Special Drawing Rights (SDRs) from 1969. The SBA was available quite quickly and stood at $1 billion in 1964.[469] The GAB offered a lending facility of $6 billion.[470] SDRs were created to expand international liquidity. They were one of the Bank's least favourite credit tools. Because they involved a lengthy process, they could only be used as pre-emptive measures. The Bank had to request help from the IMF, which then needed to find a counter-party willing to provide dollars against SDRs. The counter-party was notified of the identity of the requestor. When used during a crisis, they would intensify the run against sterling by publicly admitting a position of weakness.

Private loans were at the disposal of the UK. They were not used frequently in the Bretton Woods period but used more frequently in the 1970s and 1980s. They were issued by banking syndicates on the Eurodollar market (a dollar lending market) in London in the late 1960s. In theory, they had the advantage of being private and secret. However, in regard to the amounts borrowed, they were usually subscribed through a syndicate of private banks on the Eurodollar lending market. Schenk mentions the British government borrowing $2.5 billion from a syndicate including Chase Manhattan Bank in April 1974.[471] Schenk adds that public sector borrowers, including other countries, 'raised $44.4 billion on the Eurobond market between 1963 and 1980'.[472] In 1964, Governor Cromer shared his intention to approach the private market for a loan with New York Fed President Alfred Hayes. 'Lord Cromer also mentioned the fact that Mr. John M. Meyer, Jr., Executive Vice President, Morgan Guaranty

[469] Scott Newton, 'The Two Sterling Crises of 1964 and the Decision Not to Devalue', *The Economic History Review* 62, 1 (2009), 76–7.
[470] Bordo, Humpage and Schwartz, *Strained Relations*, 108.
[471] Schenk, *The Decline of Sterling*, 237.
[472] Ibid.

Trust Company, had just been visiting with him and proposing possible credit arrangement for the U.K. Lord Cromer had not of course informed Mr. Meyer of his earlier talks with Chase Manhattan. Lord Cromer and I agreed that while the credit idea had considerable merit, it would be well to keep it in abeyance at least for a little while longer.'[473] It is noteworthy that the governor of the Bank of England openly discussed the matter with the Federal Reserve, which at the time was another important creditor for the Bank.

[473] 'Telephone call between Cromer and Hayes', Hayes to files, 7 December 1964, New York, Archives of the Federal Reserve, box 617015.

Chapter II conclusion

This chapter has reviewed the Gold Pool and US swaps network as remedies in the wake of convertibility in 1959 to avoid international capital flows destabilising the Bretton Woods system. These solutions were put in place as the Bank of England progressively warmed to the idea of deeper cooperation with the Federal Reserve. But cooperation progressed slowly and the Bank was reluctant to share more information at each step.

At the start of the 1960s the Bank of England was not overly concerned with the issues of the global monetary system and struggled to find innovative solutions to prevent the Bretton Woods system from collapsing. The Federal Reserve, on the other hand, noticing Triffin's warnings, quickly started to search for solutions to avoid the collapse of the global fixed exchange rate system.

Increased cooperation resulting from these international efforts helped secure the future of the system for a few years and avoid international capital flows destroying the international monetary order. But these measures were always ad hoc and implemented only when the pressure of international capital flows pushed the British monetary authorities to the verge of a crisis. These quick fixes did not guarantee a long-term escape from the monetary policy trilemma. Chapter III analyses how these patches started to disintegrate in the late 1960s.

Chapter III

STERLING AND THE FALL OF THE BRETTON WOODS SYSTEM (1964–71)

‘The fate of the pound is primarily a British responsibility. Yet it is also a major problem for Europe and the rest of the world.’

Robert Triffin, *The Fate of the Pound*, 1

‘Again, sterling’s devaluation would add to the difficulties of the dollar and might dislodge the Bretton Woods system, as in fact happened when sterling was eventually devalued in 1967.’

James Callaghan, *Time and Chance* (London: HarperCollins, 1987), 160.

‘The world is at a critical juncture in its monetary affairs. No newly mined gold has of late flowed into the monetary stocks of governments and central banks, the entire output having been absorbed into private uses and holdings.’

Miroslav A. Kriz, ‘Gold: Barbarous Relic or Useful Instrument?’, *Princeton Essays in International Finance*, 60 (1967).

This chapter explores the role of sterling in the demise of the Bretton Woods system. I argue that sterling triggered, or helped trigger, most crises that arose in the international monetary system from 1964 to 1971. Inflation in the US also played a role in the eventual collapse of Bretton Woods. First, the sterling crisis of 1964–7, a four-year, almost-constant currency crisis, put a strain on the swap network. Stress on the secondary reserve currency reminded policy-makers and investors that the system was inherently unstable. Then, the 1967 devaluation of the pound triggered a run on gold. After four months and colossal losses for the international syndicate, the Gold Pool was disbanded. This marked the beginning of the end of the Bretton Woods system.

In this chaos and after a devaluation that did not meet British policy-makers’ expectations, the Bank of England increased its manipulation of foreign exchange reserve figures. On the international front, the US shifted away from international monetary cooperation as the Nixon administration started playing the blame game. Finally, both higher

inflation and higher current account deficits in the US took care of what remained of the international monetary system. In 1971, while falsely blaming Europe, President Richard Nixon brought an end to over 150 years of somewhat intermittent gold-based systems.[474] Never again would gold be used as an official international anchor. But, as Obstfeld and Rogoff put it, 'stuffing the genie of floating exchange rates back into its bottle is, however, easier said than done.'[475] After the 1971 so-called Nixon shock, flexible exchange rates became the norm for developed economies.

4.1. The 1964–7 currency crisis

'This book is the record of a Government all but a year of whose life was dominated by an inherited balance of payments problem which was nearing a crisis at the moment we took office; we lived and governed during a period when that problem made a frenetic speculative attack on Britain both easy and profitable.'[476] This is how Harold Wilson (UK prime minister 1964–70) opened his autobiography. Simultaneously with the election of the Labour Party to power in 1964 (which itself added to pressure on sterling) started a string of recurring currency crises that would not be resolved until well after the 1967 devaluation.

I argue that after the 1964 general election, the fate of sterling and gold were increasingly intertwined. I use econometric analysis to demonstrate how gold and the pound were correlated. At this stage, the link between the two reserve currencies (sterling and the dollar) became apparent, and US policy-makers started to turn their attention to protecting

[474] This calculation starts in 1821, when Britain went back on the pre-Napoleonic War parity (Michael D. Bordo and Anna J. Schwartz, *A Retrospective on the Classical Gold Standard, 1821–1931*, A Conference Report /National Bureau of Economic Research (Chicago: Chicago University Press, 1984). The system did suffer interruptions, however, in the mind of most policy-makers during this period, however, the gold standard was always the only option. This came to an end with the Nixon shock.
[475] Maurice Obstfeld and Kenneth Rogoff, 'The Mirage of Fixed Exchange Rates', *Journal of Economic Perspectives* 9, 4 (December 1995), 73.
[476] Harold Wilson, *Labour Government, 1964–70: A Personal Record* (London: Michael Joseph, 1971).

sterling. The 1964 sterling crisis highlighted the role sterling still played in the stability of the international monetary system. Aware of the systemic importance of the British currency, the US dedicated significant resources towards supporting the currency until 1967. Nevertheless, this support would eventually prove insufficient.

From 1958 to the 1964 election, the influence of sterling was not visible on the gold market as sterling was relatively stable, bar a minor sterling crisis in 1961.[477] Other international events related to the Cold War (the Cuban missile crisis and the Berlin Wall among others) took centre stage, putting pressure on both the dollar and gold. The 1964 sterling crisis would reveal that sterling still played a role in global currency markets. Starting in autumn 1964 and continuing through to 1971, pressure on gold did not abate, but was reinforced by the problem of rising inflation in the US from 1965 onwards.[478]

4.1.1. The election of the Labour Party and the 1964 crisis

When the Labour Party won the general election in October 1964, the new government was faced with fears over the devaluation of sterling. The previous administration had already been struggling with balance of payments deficits and the victory of Labour, which was 'not known for its friendliness towards the markets', made things worse.[479] Wilson himself was aware of market animosity, as he later wrote: 'we had always underestimated the power of the speculators against a Government of whose politics, policies and even personalities they did not approve.'[480] The literature is unanimous in stating that Labour did not want to be the party

[477] See Chapter II, section 4.
[478] On inflation see Michael D. Bordo and Barry J. Eichengreen, 'Bretton Woods and the Great Inflation', in *The Great Inflation: The Rebirth of Modern Central Banking*, ed. Michael D. Bordo and Athanasios Orphanides (Chicago: University of Chicago Press, 2013).
[479] Scott Newton, 'The Two Sterling Crises of 1964 and the Decision Not to Devalue', *The Economic History Review* 62, 1 (2009), 78.
[480] Wilson, *Labour Government, 1964–70*, 33.

of devaluation.[481] The party was held responsible for the 1949 devaluation and Wilson did not want the electorate to 'permanently associate economic incompetence with his beloved Labour Party'.[482] Even if, as then the Chancellor of the Exchequer, James Callaghan, wrote, there was a reason for markets to expect it: 'We had been out of office for thirteen years, and there would be speculation that our first step might be to devalue sterling.'[483] However, Callaghan, like Wilson, was against devaluation because the 'Conservatives would have crucified' the Labour Party.[484]

The US supported the decision not to devalue sterling. This meant that the UK had a strong hand in negotiating financial aid. As Schenk puts it, 'the key role of sterling in the international monetary system did allow Wilson and his Chancellors of the Exchequer to garner repeated large doses of international support for the sterling exchange rate both before and after the devaluation of 1967.'[485] This assistance was vital. When Callaghan was appointed Shadow Chancellor, he visited the New York Fed. During his visit, he heard Hayes speak 'very frankly about the strains on the dollar and [Hayes] repeated more than once his belief that the best prospect for effective action in monetary matters depended upon Britain and America working together'.[486] This was the Labour government's guarantee of US support.

This subsection engages with a debate in the literature on whether 1964 witnessed one or two sterling crises. I argue that it is pointless to divide the sterling crisis into sub-crises as all these events were closely interlinked. What becomes clear from the data is that the Labour government not only inherited a balance of payments crisis from the previous government but was also naïve in its approach to the currency market, having been out of power for so long.

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[481] Ibid., 6; Alec Cairncross and Barry Eichengreen, *Sterling in Decline* (Oxford: Wiley-Blackwell, 1983), 167; Raj Roy, 'The Battle for Bretton Woods: America, Britain and the International Financial Crisis of October 1967–March 1968', *Cold War History* 2, 2 (1 January 2002), 36; Schenk, *The Decline of Sterling*, 76.
[482] Roy, 'The Battle for Bretton Woods', 36.
[483] James Callaghan, *Time and Chance* (London: HarperCollins, 1987), 154.
[484] Ibid., 159.
[485] Schenk, *The Decline of Sterling*, 204.
[486] Callaghan, *Time and Chance*, 157.

The policy goal was to avoid a devaluation but the government struggled to improve the balance of payments, despite the National Plan which was aiming to curb spending abroad and improve productivity. In this context, US support is the only reason for sterling to have avoided devaluation from 1964 to 1967.

Newton suggests that there were two sterling crises in the autumn of 1964 and that Labour handled the first one 'efficiently'.[487] The second crisis, Newton argues, was 'provoked by speculation stemming from market expectations'.[488] According to Newton, there was one crisis 'which coincided with the election result and another one which started three weeks later'. This would place the first crisis around 15 October and the second around 5 November. I analyse these dates against new data below.

Michael Oliver wrote a reply to Newton's article.[489] Oliver posits two critiques: first, there was only one sterling crisis in the autumn of 1964; and second, the new Labour government did not display a 'textbook reaction' to the crisis but failed to react appropriately to stem speculation.[490] Using forward rates from *The Times*, Oliver argues that 'The behaviour of the 90-day forward rate suggests that sterling was not credible from September 1964'.[491] I agree with this timing. In fact, in September 1964 sterling had hit a three-year low and this was reported in the press at the time.

However, Oliver then argues that 'the daily dealers' reports from the Bank can be used to reconstruct changes in the reserves and allow a more accurate picture of reserve

[487] Newton, 'The Two Sterling Crises of 1964 and the Decision Not to Devalue', 73.
[488] Ibid.
[489] Michael J. Oliver, 'The Two Sterling Crises of 1964: A Comment on Newton', *The Economic History Review* 65, 1 (1 February 2012): 314–21.
[490] Newton, 'The Two Sterling Crises of 1964 and the Decision Not to Devalue', 88; Oliver, 'The Two Sterling Crises of 1964', 314.
[491] Oliver, 'The Two Sterling Crises of 1964', 315; Michael D. Bordo, Ronald MacDonald and Michael J. Oliver, 'Sterling in Crisis, 1964–1967', *European Review of Economic History* 13, 3 (1 December 2009), 437–59.

movements'.[492] This is problematic as Bank of England reserves were not affected by intervention recorded in the dealers' reports only, but also by many other factors, as argued in this dissertation. Nevertheless, intervention figures from the dealers' reports, if not fully informative on reserve amounts, are an excellent tool to understand the Bank's operations. Below I set out the actual reserve figures from the EEA (these were not available to Oliver) along with Oliver's intervention figures.

When looking at the sterling exchange rate in the longer term, it appears that the currency was beginning to decline in 1962 (see Figure 39).[493] This coincides with a period when the government accelerated its efforts to stimulate the economy by its fiscal and monetary policy.[494] 1964 marked an acceleration of this decline, and sterling hit its lowest point in six years (1960–6) on 26 November at $2.7806, dangerously close to the Bretton Woods official lower band ($2.78).

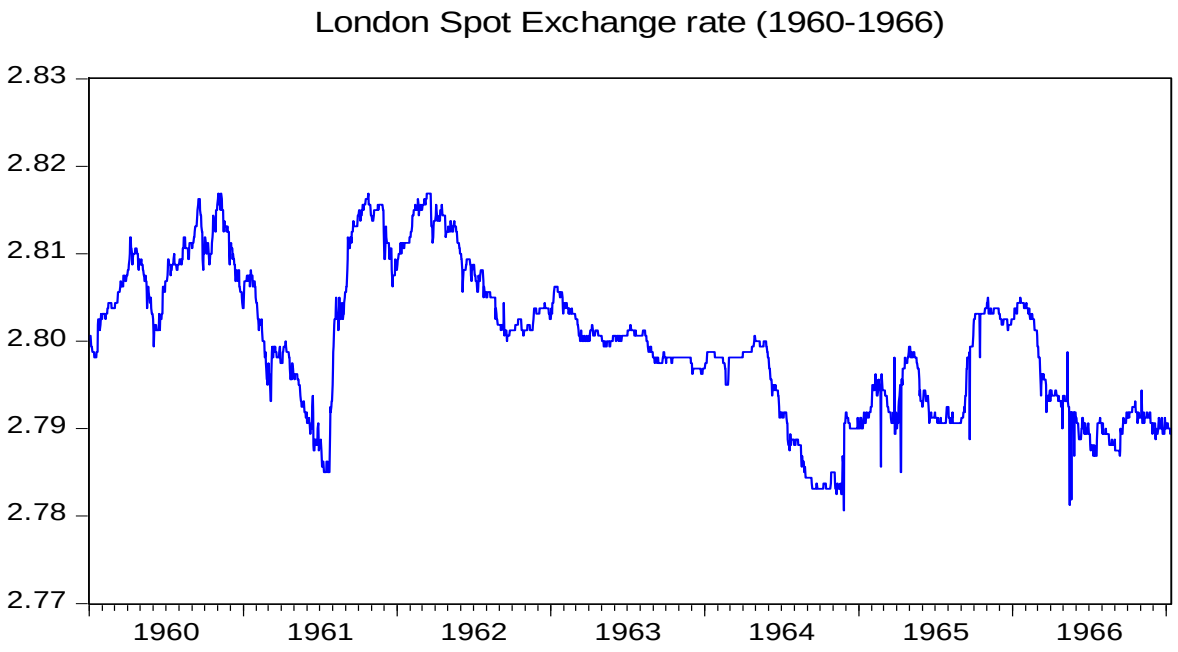

Figure 39 Spot exchange rate, 1960–6

Source: Accominotti et al., 'Currency Regimes and the Carry Trade', 2017.

[492] Oliver, 'The Two Sterling Crises of 1964', 315.
[493] The price moved from the upper band of $2.82 per sterling to the lower band of $2.78 per sterling.
[494] William A. Allen, 'The British Attempt to Manage Long-Term Interest Rates in 1962–1964', *Financial History Review* 23, 1 (April 2016), 47–70.

The underlying issue was the balance of payments, which became negative from the last quarter of 1963 and continued to worsen (see Figure 40). Yeager argues that at the beginning of 1964, 'the general picture was one of a booming home economy and weakening balance of payments.' In January 1964, the publication of an 'all-time record monthly deficit in merchandise trade' started to increase pressure on the pound.[495] This pushed the government to increase the Bank Rate from 4% to 5%. Coombs attributed the balance of payments problems to the 'overstimulative budget introduced by Chancellor Maudling'.[496]

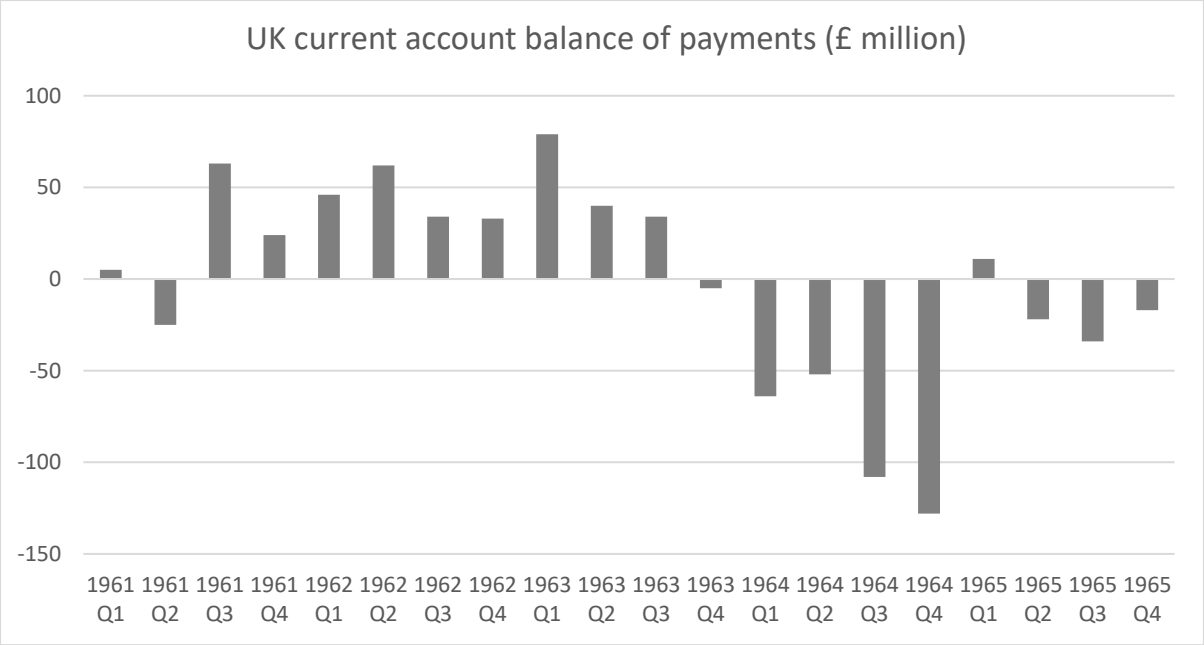

Figure 40 UK current account balance of payments (£ million)

Source: Office for National Statistics.

Articles in the *Economist* in February 1964 give a better understanding of the prevailing mood. However, the journal was still more optimistic than the actual numbers later published (compare Figure 41 with Figure 40). The journal expected a current account deficit of less than £100 million for the whole of the second half of 1964 (see Figure 41) when the balance of

[495] Yeager, *International Monetary Relations*, 392.
[496] Coombs, *The Arena*, 112.

payments deficit was much higher than that only for the last quarter of 1964, when the sterling crisis started.

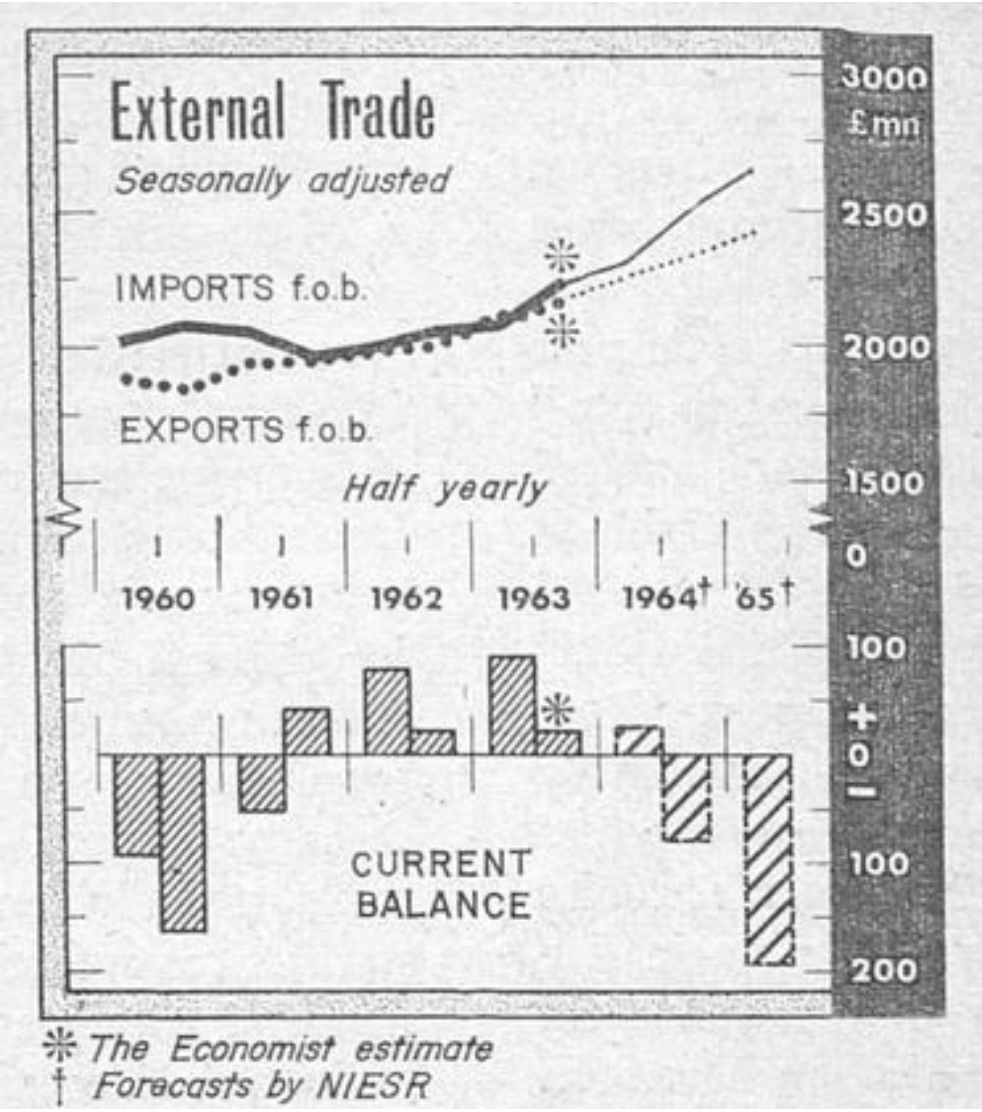

Figure 41 Trade deficit 1960–5

Source: 'How Big a Deficit?', *Economist*, 22 February 1964, 724.

Well before the 1964 election, the current and capital accounts were already deteriorating and investors had reason to expect a further decline. Figure 42 highlights sterling's downward trend starting in May 1964. The prospect of a Labour victory five months ahead was most probably not the only reason for the fall. As early as late May 1964, however,

the *Economist* seemed to be arguing that the prospect of a Labour win could have weighed on investors' expectations:

> 'The fact is that many institutional investors are remaining out of the market in the belief that despite some revival in the Conservative Party's fortunes there is going to be a Labour victory at the October election and that the best investment policy in the intervening month is to build up liquid funds.'[497]

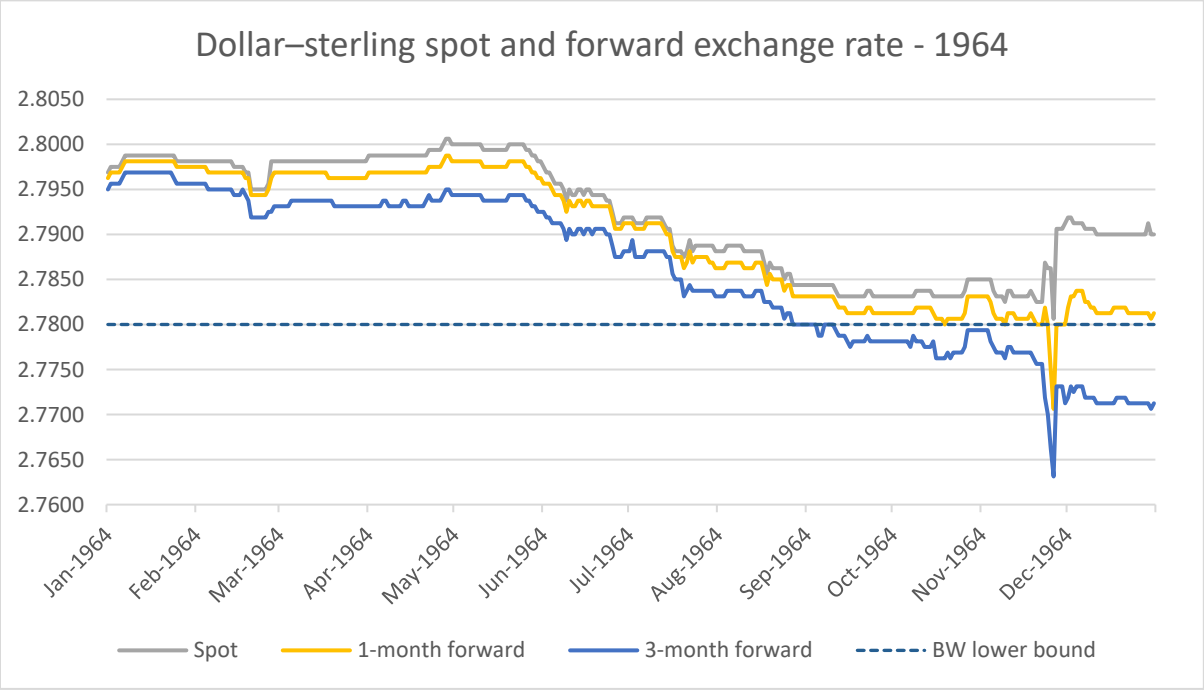

Figure 42 Sterling spot and one- and three-month forward rate, 1964
Source: Accominotti et al., 'Currency Regimes and the Carry Trade', 2017.

Even if there was little coverage of the British election in the US press, some reports in the financial press can be found. In July 1964, the *Wall Street Journal* reported that the 'worst' could happen in an article entitled 'Capitalism under Fire': 'nationalization can be expected to become an increasingly important issue. And one with highly significant overtones for the American businessman and investor' and further that 'unions have settled on an approach that

[497] 'Adverse Trade Wind', *Economist*, 23 May 1964, 867.

strongly attacks free enterprise'.[498] There are good reasons to believe that the worsening of sterling starting at the end of May may be due in part to fears of a Labour victory in the context of weak fundamentals.

Sterling weakened both because of the disappointing balance of payments figures presented in Figure 40 and the prospect of a Labour win. To take a closer look at the event, I next examine press reports from August to November 1964 to gain a better understanding of what information investors could receive. On 19 August forecasts from the National Institute of Economic and Social Research announced that the current account deficit 'could well be around £500 million', a disappointing figure.[499] The same day, the *New York Times* reported that sterling had hit a three-year low.[500] Sterling would again hit a new three-year low a few days later, as reported in the *Wall Street Journal*.[501] At this point, sterling was under stress, with negative press reports published on most days. Most simply mention pressure on sterling but rarely link this with the election campaign.

On 18 September more negative trade figures were published, though these did not trigger a noticeable market reaction.[502] The weak state of the economy started to put pressure on Labour, which would have to deal with the consequences if elected (which was the most likely outcome). Wilson had to 'present the country with a more grim financial picture' to avoid taking full blame for a possible currency crisis if elected. [503]

When Labour did win on 15 October it did not have much of an impact on the foreign exchange market as the market had already factored this in. The Bank of England dealers

[498] Ray Vicker, 'Capitalism under Fire: British Unions, Sensing a Labor Victory, Mount Attack', *Wall Street Journal*, 2 July 1964, 10.
[499] 'Deficit of £500 m. Forecast: Sterling Drops Again', *Guardian*, 19 August 1964, 11.
[500] 'Pound Continues Slump in London: Sterling Declines to Lowest Level in Three Years', *New York Times*, 19 August 1964, 51.
[501] 'Sterling Rate Steadies after Fall to $2.7847, Lowest in Three Years', *Wall Street Journal*, 26 August 1964.
[502] Clyde H. Farnsworth, 'Britain's Deficit in Trade Deepens', *New York Times*, 18 September 1964, 45.
[503] Nora Beloff, 'Wilson Pressed to Sound Crisis Alarm', *Observer*, 27 September 1964, 2.

reported dollar sales of $10.24 million on the Friday following the election, around 2.5 times the average intervention of previous years.[504] A few days later, however, on 23 October, dealers at the Bank had to intervene for $31.5 million, eight times the average intervention. Overall, however, there seemed not to have been a major crisis, showing that the election of Labour was indeed factored into the market price of sterling.

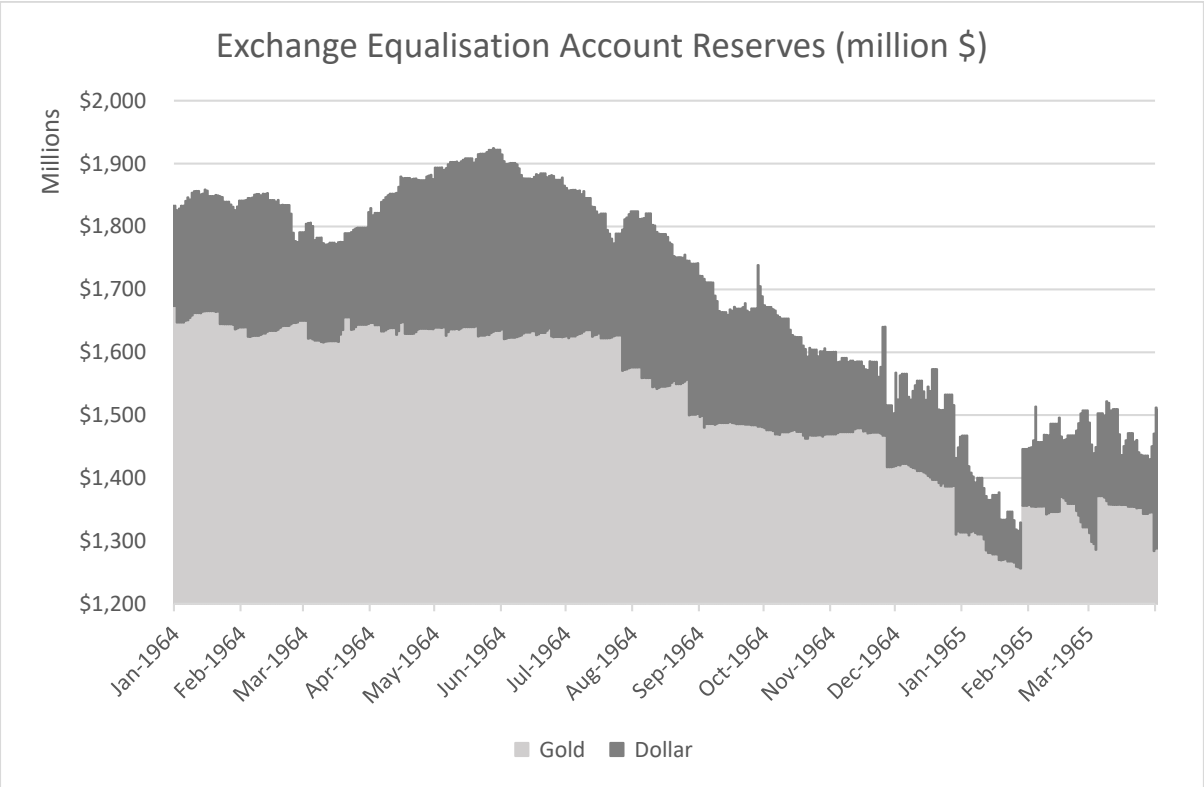

Figure 43 EEA gold and dollar reserves

Source: EEA ledgers.

Note: Scale starts at $1200 million.

The period between the election and early November (the point when Newton sees a second sterling crisis) was a quieter period. This lends some support to his thesis of two distinct sterling crises, especially since the exchange stayed steady albeit close to the lower band.

[504] The comparison is with the average for 1952 (when the sample starts) to 15 October 1964.

However, when looking at reserve figures from the EEA (see Figure 43), which are presented here at a daily frequency for the first time, it appears clearly that British reserves were continuously worsening. This reveals constant pressure on the Bank of England, which lost reserves from June 1964 onward. Sterling was effectively in crisis from late August 1964 to the 1967 devaluation, and even beyond that. Wilson echoed this when he later wrote: 'It is difficult to describe what it meant to live against a background of this persistent speculation, speculation in the main made possible only by the balance of payments deficit. Indeed it virtually disappeared as a threat once we moved into strong surplus some five years later.'[505] Sterling was consistently close to the $2.78 lower band with the government lurching from one rescue package to another.

What happened in Newton's 'second crisis'? Wilson mentions a 'run on sterling which began, following the Chancellor's Ways and Means statement on 11th November'.[506] The run, according to Wilson, was 'easy to explain': international companies in London feared devaluation because of the balance of payments deficit and therefore decided to move their sterling into safer currencies (mainly the dollar). This led to a run on sterling, leading to additional pressure. Wilson argued that market did not like a 'Government concerned, even at a difficult time, with payments of the old-age pensioners and others in need, concerned to provide charitable largesse which our foreign critics felt Britain could not afford.'[507] Wilson's explanation is somewhat simplistic if not tautological for it describes the channel speculators took and not why they feared for their assets, other than the state of the balance of payments. Furthermore, by pursuing an expansionary domestic policy while still wanting to maintain a fixed exchange rate, the government was violating the macroeconomic trilemma. Beyond the

[505] Wilson, *Labour Government, 1964–70*, 32.
[506] Ibid., 33.
[507] Ibid., 34.

deficit, it appears that the market did not trust the Chancellor's plans expressed on 11 November. This matches the timing of the 'second crisis' posited by Newton.

The press was critical of Chancellor Callaghan's budget. The *Wall Street Journal* reported the 'initial reaction to the special budget from businessmen was that it isn't likely to help much in solving the nation's most pressing problem, the serious deficit in the international balance of payments'.[508] This fell short of the currency market's expectations which hoped more drastic changes would be introduced to redress the situation.

Callaghan himself admitted that his handling of the City was a learning process: 'I did not learn the ways of the City until I had held the post for some time, and consequently made mistakes.'[509] One of his first mistakes was made on 11 November. The City was sceptical of his ability and Callaghan did nothing to alleviate their doubts in his Ways and Means speech. His emergency budget, which was intended to calm the markets, contained few fundamental reforms for this purpose, apart from a new tax on petrol, which would raise £93 million. Most measures proposed were to take effect much later. The *Economist* noted: 'A disturbing point about Mr Callaghan's first emergency budget is that it contains an unduly large proportion of just such post-dated measures.'[510]

This subsection has demonstrated how the crisis, even if it started before Labour took office, became strongly accentuated in the run-up to the general election by fears of the party's victory. Once elected, the government failed to solve the crisis until well after the 1967 devaluation. Dividing the crisis into sub-crises does not help us make sense of the events. This unbroken currency crisis put a strain on the economy, but what is not well known is that the crisis also put pressure on the dollar, as the next subsection shows. In Callaghan's words:

[508] 'Britain's Budget Raises Benefits and Income Taxes', *Wall Street Journal*, 12 November 1964, 6.
[509] Callaghan, *Time and Chance*, 153.
[510] 'Labour's Tanner', *Economist*, 14 November 1964, 671.

‘Sterling’s devaluation would add to the difficulties of the dollar and might dislodge the Bretton Woods system, as in fact happened when sterling was eventually devalued in 1967.’[511]

4.1.2. The 1964 gold crisis and the impact of sterling[512]

1964 marked the beginning of a four-year crisis for the London gold market, which would only end with the creation of a two-tier gold market in March 1968. In September 1964, the Gold Pool stopped accumulating gold and the gold price started to rise (see Figure 44). Three factors played a major role here: first, the US election followed by fears of inflation in the US; second, the French attitude, discrediting the international monetary system; and third, the crisis in the secondary reserve currency, sterling.

The start of the gold crisis coincides with both the US and UK elections. It is difficult to disentangle the effect of the 15 October 1964 UK general election from the influence of the 3 November US presidential election. Both played a role in the worsening of the London gold price. The market feared a sterling devaluation and Lyndon Johnson’s campaign for a ‘Great Society’ could lead to inflation which could have led to pressure on gold–dollar parity. To make matters worse, in February 1965, French President Charles de Gaulle delivered a speech attacking the foundation of the international monetary system.

I argue that the 1964 sterling crisis exacerbated the contagion from sterling to the dollar and that sterling is an important explanatory factor in the gold crisis. This does not mean that the US election (and later US inflation in the context of the Vietnam War) and French calls for reform played no role, but the timing of the events presented here seems to give more importance to the role of sterling than previously assumed. The sterling crisis needs to be

[511] Callaghan, *Time and Chance*, 160.
[512] This subsection draws heavily on joint work with Bordo and Monnet: see Michael D. Bordo, Eric Monnet and Alain Naef, ‘The Gold Pool (1961–1968) and the Fall of Bretton Woods. Lessons for Central Bank Cooperation’, *National Bureau of Economic Research Working Paper*, 24016 (2017).

reconsidered as an important explanation for the increase in the gold price starting in 1964. The literature has focused on both US and French influences, but the role of sterling has not yet been examined by economic historians in detail. This is what I do here.

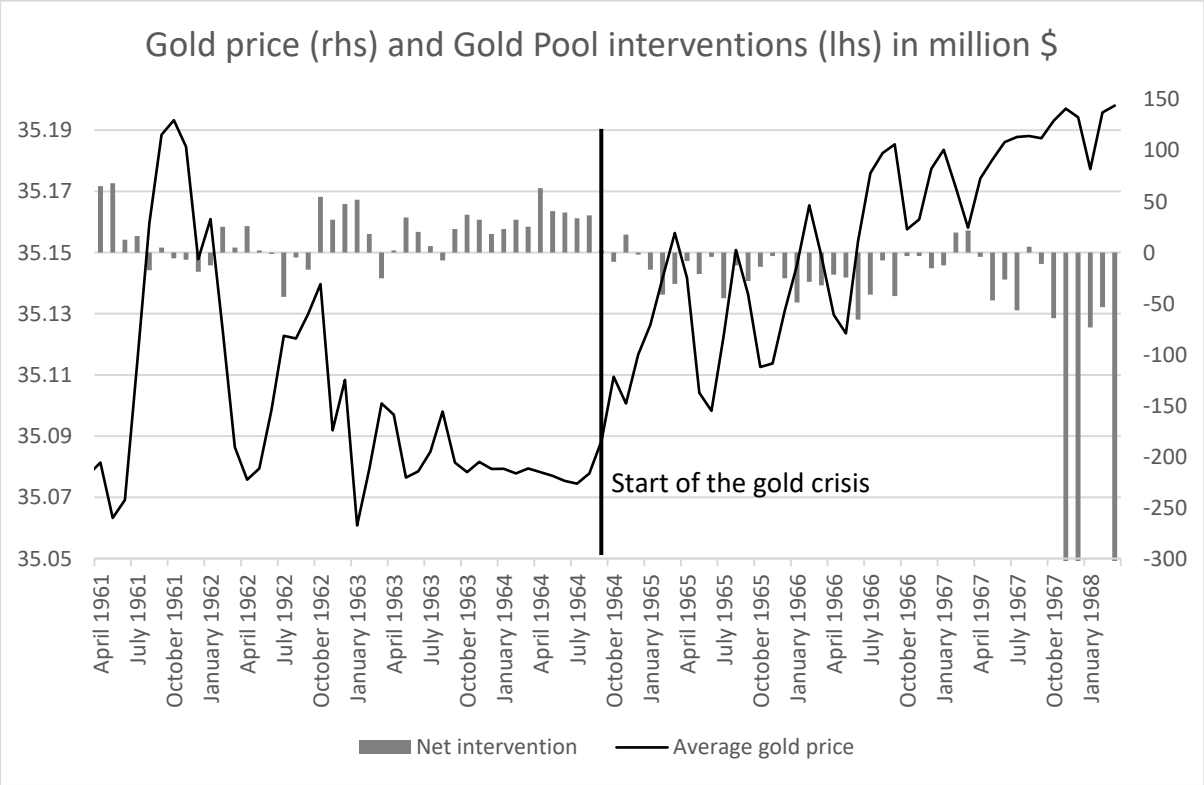

Figure 44 Average monthly gold prices and net monthly intervention

Source: Dealers' reports (C8) and author's calculations.

If 1961 to 1964 witnessed crises for the dollar emanating from the Cold War, 1964–7 were crisis years for sterling and this affected the dollar indirectly. Here I review the timing of the contagion from sterling to gold and determine the impact of the sterling crises on the Gold Pool. Normally, a depreciation of sterling, the second most important reserve currency, should have led to an appreciation of the dollar. Investors would normally move from one reserve currency to another when faced with a fall in sterling. However, on this occasion they did not. Econometric evidence presented in the next subsection shows the opposite. When sterling

depreciated, the dollar lost value against gold. More pressure on sterling meant that the gold price rose against the dollar and the Gold Pool had to invest more resources to defend it. This is interpreted as contagion from sterling, the secondary reserve currency, to the dollar, the main reserve currency.

The argument is not new as in 1964 Coombs warned the Federal Open Market Committee (FOMC) of the disastrous consequences of a sterling devaluation. He used the fear of a global collapse to persuade the Committee to lend more funds to the Bank of England: 'the British might decide to devalue sterling. This would probably precipitate an international financial crisis of the first magnitude. He [Coombs] would expect to see a major speculative drive on the London gold market and sooner or later an even more dangerous attack on the US dollar.'[513]

Despite Britain not devaluing sterling, as Coombs had feared, in parallel to the run-up to the 1964 sterling crisis, the situation of the London gold market worsened. After the initial crisis of September–October 1964, sterling experienced almost continuous downward pressure until the 1967 devaluation. This had an impact on the international monetary system. The Pool's losses, which started in autumn 1964, caused fundamental disagreements among Gold Pool members on the goals of the syndicate. Toniolo and Clement note at the March 1965 gold experts' meeting at the BIS, the French and Belgian delegates 'did not join their colleagues in giving solemn assurances as to the medium-term continuation of Gold Pool operations2019.[514] And in November 1964, Coombs reported that central bankers across Europe and the US were worried about the impact of sterling on the international monetary system. At the November 1964 BIS meeting Coombs reported: 'In private conversations all the foreign department men from European central banks I met that weekend felt that we faced an explosive situation in

[513] Coombs, *The Arena*, 118.
[514] Toniolo and Clement, *Central Bank Cooperation*, 411.

both the gold and foreign exchange markets. They were particularly fearful that a massive speculative attack on sterling would react back on the dollar as well.'[515]

The pressure on the gold market was visible in two indicators: the price of gold and the cost of intervention. The more the Bank of England had to intervene to keep the price of gold under control, the more pressure there was. The Bank could either let the price rise or waste reserves and intervene to keep it in check. These two indicators can be combined to form a rudimentary Exchange Market Pressure (EMP) index for gold.[516] EMPs help give a more detailed idea of the market pressure. However, they can be sensitive to calibration and yield a picture which can be biased by the choice of variables. Instead of using daily intervention figures, the index is computed by using the cumulative intervention of the amount of gold bought or sold by the Gold Pool. This shows trends rather than noisy daily changes and helps identify trends and breaks in trends. The index is plotted in Figure 45, where the average values for 1961 are set at 100. Higher values indicate more pressure on the gold market.

The index shows declining pressure at the end of 1962 (the lower the index, the lesser the pressure) until September 1964. A downward trend indicates both that the price of gold was not rising and that the Gold Pool was able to accumulate gold for its members. The Gold Pool was successful in keeping the gold market under control during the early years of the syndicate. Figure 45, however, presents a clear reversal of the trend in September 1964. At this stage the Gold Pool started selling more gold than it was accumulating and the gold price tended to rise as pressure on the market was mounting. What prompted this sudden reversal? Both the US election and speculation against sterling increased pressure on the London gold market. These

[515] Coombs, *The Arena*, 114.
[516] EMPs usually have an interest rate component, but because this index is not for a currency, but for gold, there is no interest rate. For literature on EMPs, see Barry Eichengreen, Andrew K. Rose and Charles Wyplosz, 'Speculative Attacks on Pegged Exchange Rates: An Empirical Exploration with Special Reference to the European Monetary System', *The New Transatlantic Economy*, ed. Matthew Canzoneri, Paul Mason and Vittorio Grilli (Cambridge: Cambridge University Press, 1995); Barry Eichengreen and Poonam Gupta, 'Tapering Talk: The Impact of Expectations of Reduced Federal Reserve Security Purchases on Emerging Markets', *Emerging Markets Review* 25 (December 2015), 1–15.

factors increased in 1964–5, progressively putting pressure on the gold price and threatening the stability of the international monetary system.

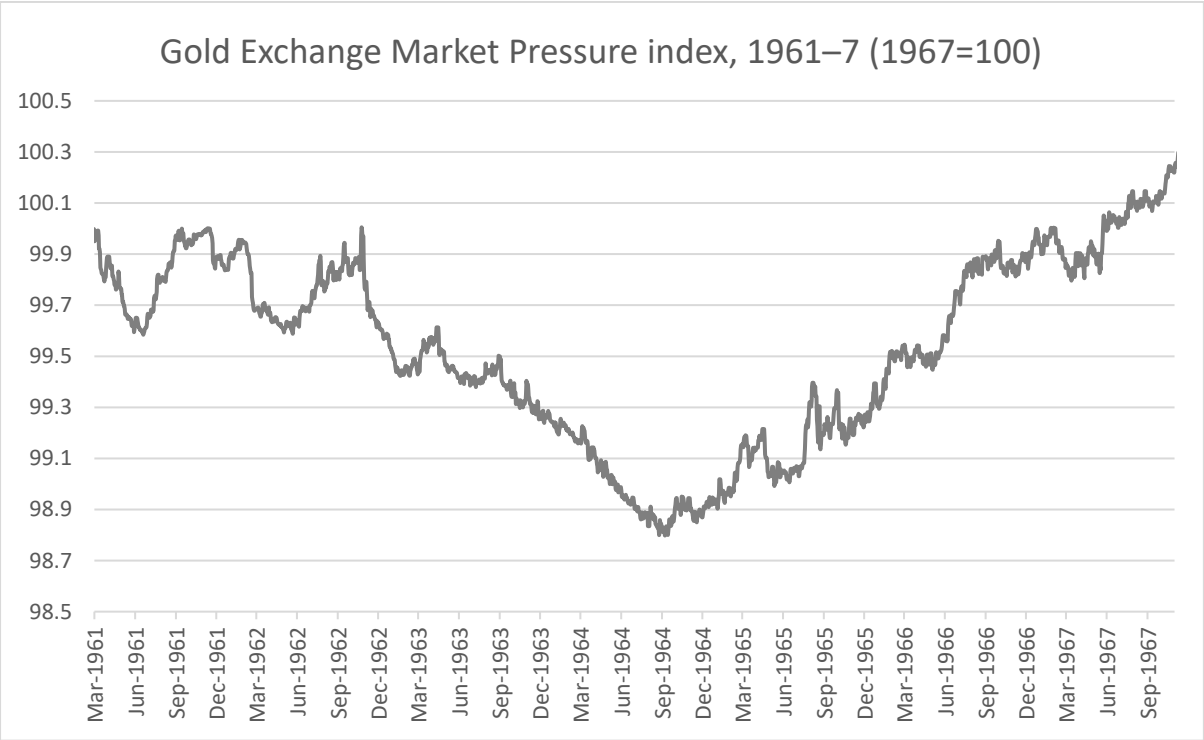

Figure 45 Exchange Market Pressure (EMP) index for gold

Source: Dealers' reports (C8) for the gold price and gold interventions.

Investors were influenced by the press and therefore press reports at the beginning of the gold crisis provide partial answers. The trend of the EMP in Figure 45 reversed on 14 September 1964 and the trend for the gold price alone reversed on 25 August.[517] On 25 August, the *Wall Street Journal* published an article entitled 'Sterling Rate Steadies after Fall to $2.7847, Lowest in Three Years'.[518] This is clearly visible in Figure 46. The *Wall Street Journal* attributed the fall to 'the mounting British trade deficit, the prospect of future

[517] Reversal here is chosen as the troughs (or low points) which are never reached again for the rest of the sample.

[518] 'Sterling Rate Steadies after Fall to $2.7847, Lowest in Three Years', *Wall Street Journal*, 26 August 1964.

deterioration in the international balance of payments and uncertainties caused by the upcoming parliamentary election'.[519]

Figure 46 Sterling spot exchange rate, May 1961–November 1964

Source: Accominotti et al., 'Currency Regimes and Carry Trade'.

On the same day that sterling hit a three-year low, the gold price started its continuous climb from 25 August to September 1969. This analysis does not exclude other explanations, such as US inflation or French pressure, but demonstrates that negative news about sterling are most probably linked to an increase in the gold price. The situation in the US certainly also played a role. For example, on 15 August the *Economist* reported that the London gold market was exposed to 'uncertainties over the Vietnam crisis which had carried the price to a five-month high'.[520] After this announcement, however, the gold price recovered rapidly.

[519] Ibid.
[520] 'Money and Exchanges', *Economist*, 15 August 1964, 686.

Mounting pressure on the gold market was, though, not clear to the Bank of England at the time. On several occasions the Bank told the Fed by telephone that 'the demand of gold was … still in good volume' because of 'the long weekend because of the holiday in New York' (8 October 1964) or 'reflecting the usual Thursday demand and the long weekend because of the holiday here on Monday' (3 September 1964). The reasons for the increase were not clear to Bridge, who also attributed the 'gold buying to the situation in Vietnam' (27 August 1964).[521] However, it seems much more likely that the change of trend in August 1964 was due to more fundamental changes than a succession of bank holidays shuffling demand for one day. The Vietnam War certainly put pressure on the gold price, but it was not clear why this started in August 1964.

After taking office, the new Labour government was advised by the Bank to raise interest rates to support the pound. The new government, however, delayed this until Monday, 23 November when it imposed a sharp 2% hike. This increase took place on a Monday instead of the usual Thursday, something that informed the market that the situation was serious.[522] Sterling recovered on the morning of the rate rise, but by midday panic had returned.[523] The rate hike had consequences not only in the UK; it also prompted a rate increase in the US. According to the Federal Reserve, the rate hike was agreed on 'to maintain the international strength of the dollar'.[524] Chairman Martin admitted that 'If it hadn't been for the British action, the Federal Reserve Board wouldn't have increased the discount rate at this time.'[525] For the New York Fed, the British move triggered an 'emergency session' of its directors and it was the 'first increase in 30 years that didn't come at a regularly scheduled directors' meeting.'[526]

[521] All the quotes in this paragraph and the next are from telephone records for various dates, 1964, New York, Archives of the Federal Reserve, box 617015.
[522] Johnson, 'The Sterling Crisis of 1967 and the Gold Rush of 1968', 6.
[523] Coombs, *The Arena*, 115.
[524] 'Discount Rate in 5 Districts Lifted to 4% After Britain Boosts Bank Rate to 7%', *Wall Street Journal*, 24 November 1964, 3.
[525] Ibid.
[526] Ibid.

If a 2% increase in the UK had been expected to trigger a reaction in the US, the last-minute and dramatic nature of the US's reaction shows the influence of sterling on the dollar. This certainly did not reassure investors and helps explain their flight out of sterling and also out of the dollar into gold.

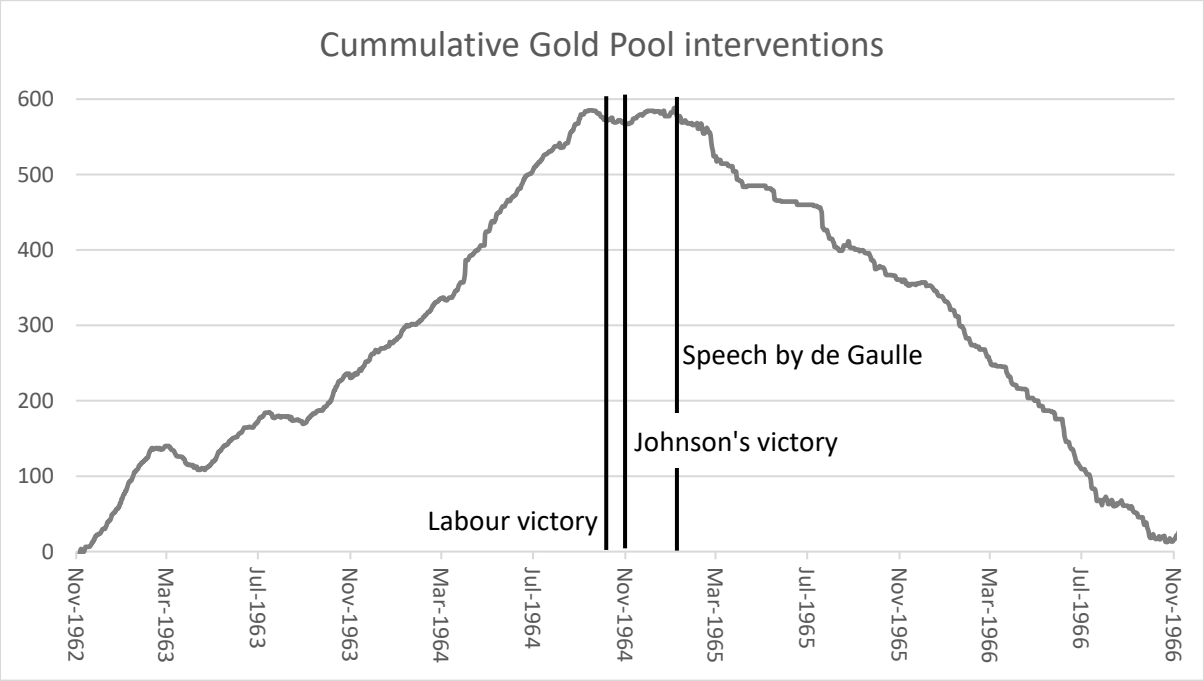

Figure 47 Cumulative Gold Pool interventions in million dollars from the creation of the Pool (6 November 1961) to November 1966

Source: Dealers' reports (C8)

After showing the impact of sterling, Figure 47 offers an overview of cumulative Gold Pool intervention. When the figure increases, it means that the Gold Pool is faced with mild market conditions and is able to buy gold. A decrease means more pressure on the gold market. The figure also highlights key dates in the three possible causes of the gold crisis starting in 1964.

As the EMP (see Figure 45) illustrates, the gold market started to worsen in mid-September. In a first sequence, from around September 1964 to January 1965, interventions

were limited while the price was increasing. Hence, the cumulative surplus of the Pool stabilised, but was not yet starting to decrease (see Figure 47). In other words, the Gold Pool was no longer able to buy gold without upsetting the price, but was not yet forced to sell gold to the market. From the sterling crisis onward, the cumulative surplus of the Gold Pool decreased so that members increasingly had to contribute to the Gold Pool instead of simply being allowed to buy the excess gold.

De Gaulle's speech undoubtedly worsened the situation in February 1965. On 4 February, he declared that France would systematically convert excess dollar reserves into gold at the Fed Window. This speech was followed by France's conversion of dollars into gold at the Fed, with French conversions concentrated from early 1965 to mid-1966.[527] After 1966, France had run out of dollars to convert into gold, but remained a member of the Gold Pool.

The Bank of England dealers were unimpressed by the speech at best. Their daily report reads: 'The statement on the gold exchange standard by General de Gaulle did not create any fresh activity in the gold market; it came after effective dealing hours for Continental operators.'[528] The next day, despite noting that 'buying was rather heavy' on the gold market, the dealers also noted that 'General de Gaulle's discourse had little effect upon the exchange market although there was at first a disposition for dollars to be offered in Switzerland.'[529]

A closer look at the London gold price and the intervention operations by the Bank of England in 1965 lead to a similar conclusion. While the speech was followed by one month of general gold price increases, interventions during this time do not seem to show that the Gold Pool was in distress. Furthermore, it is difficult to disentangle the effects of events in the US and UK from de Gaulle's speech. The French announcement happened on an upward trend in

[527] This is analysed in more detail in Figure 52 below.
[528] Daily dealers' reports, 4 February 1965, London, Archives of the Bank of England, C8/29.
[529] Daily dealers' reports, 5 February 1965, London, Archives of the Bank of England, C8/29.

the gold price. One month after the speech, the Bank of England spent $54.6 million on behalf of the Gold Pool, whereas the month before it spent $7.7 million. The effect was only short-lived as the net losses of the Pool were $18.2 million during the three months before and $19.2 million during the three months after de Gaulle's speech. Finally, from late 1965 onward, Gold Pool operations suffered from the worsening of the US balance of payments and the rise in US inflation.[530]

This subsection has provided further evidence of the role sterling played in the gold crisis. It is not possible to disentangle quantitatively the exact contribution of sterling from the worsening conditions in the US and the attacks by the French president. All three factors certainly played a role in the gold crisis but the contribution of this subsection has been to highlight the role of sterling which has been underestimated in previous literature. The following subsection presents econometric evidence of the link between sterling and the gold price.

4.1.3. How sterling affected the London gold price[531]

This subsection econometrically demonstrates contagion from sterling to gold. These two prices were linked, but the relationship is different from what might have been expected. A shock to the price of sterling tended to make gold appreciate against the dollar. A shock to sterling led to global instability and investors withdrawing from the dollar and investing in gold, which was seen to be a safe haven. This in turn put pressure on US gold reserves, adding

[530] Bordo and Eichengreen, 'Bretton Woods and the Great Inflation'; Francis J. Gavin, *Gold, Dollars, and Power: The Politics of International Monetary Relations, 1958–1971* (Chapel Hill, NC: University of North Carolina Press, 2007).
[531] This subsection draws heavily on joint work with Bordo and Monnet: Bordo, Monnet and Naef, 'The Gold Pool'.

to the crisis. This subsection is the first to provide econometric evidence of this link, which had been described and understood by some, but not all, contemporaries.[532]

From the 1964 crisis to the 1967 devaluation, there is a negative correlation between the three-month sterling forward rate and the gold price in dollars. Forward rates show the situation of sterling and offer a better proxy than spot rates as they were less subject to intervention by the Bank of England.[533] They also present more volatility, which helps the interpretation. In Figure 48 the relationship seems to show that the lower the three-month forward sterling rate, the higher the London gold price. Troubles for sterling with larger forward discounts seem to affect the gold market negatively. This is most apparent after the election of Labour at the end of 1964, marking the beginning of a volatile period for sterling and sustained pressure on the London gold market. It also appears in 1962 and 1963, although variations then were more modest.[534] Starting in June 1967, the gold price stabilised near its maximum and reached a ceiling of $35.20 (the level at which the Pool intervened constantly) while the sterling forward rate continued to depreciate.

Before going further into the empirical analysis, it is useful to make clear why a negative correlation between the two series can be interpreted as evidence of contagion between the two reserve currencies. During Bretton Woods, currencies were all subject to one-way speculation. If a currency was under stress, shorting that currency involved practically no risk as it could only be devalued or stay at the existing parity. There was no risk of sudden appreciation making shorting a risk-free bet. And sterling and the dollar were the two most traded currencies at the time. Therefore, it is normal to expect that rumours of devaluation on sterling would lead to a flight out of sterling into the dollar. Equally, when rumours of a dollar

[532] Coombs often mentioned the risk of contagion from the pound to the dollar through the London gold market. See Coombs, *The Arena*.
[533] As seen in Chapter I, section 4.
[534] When running the regressions yearly, 1962 and 1963 also show a negative coefficient, but not 1961.

devaluation were circulating, investors would sell dollars and seek refuge in the second largest currency, sterling. If this does not happen, however, it means that investors running out of sterling do not see the dollar as a safe enough currency and that there is contagion from sterling to the dollar.

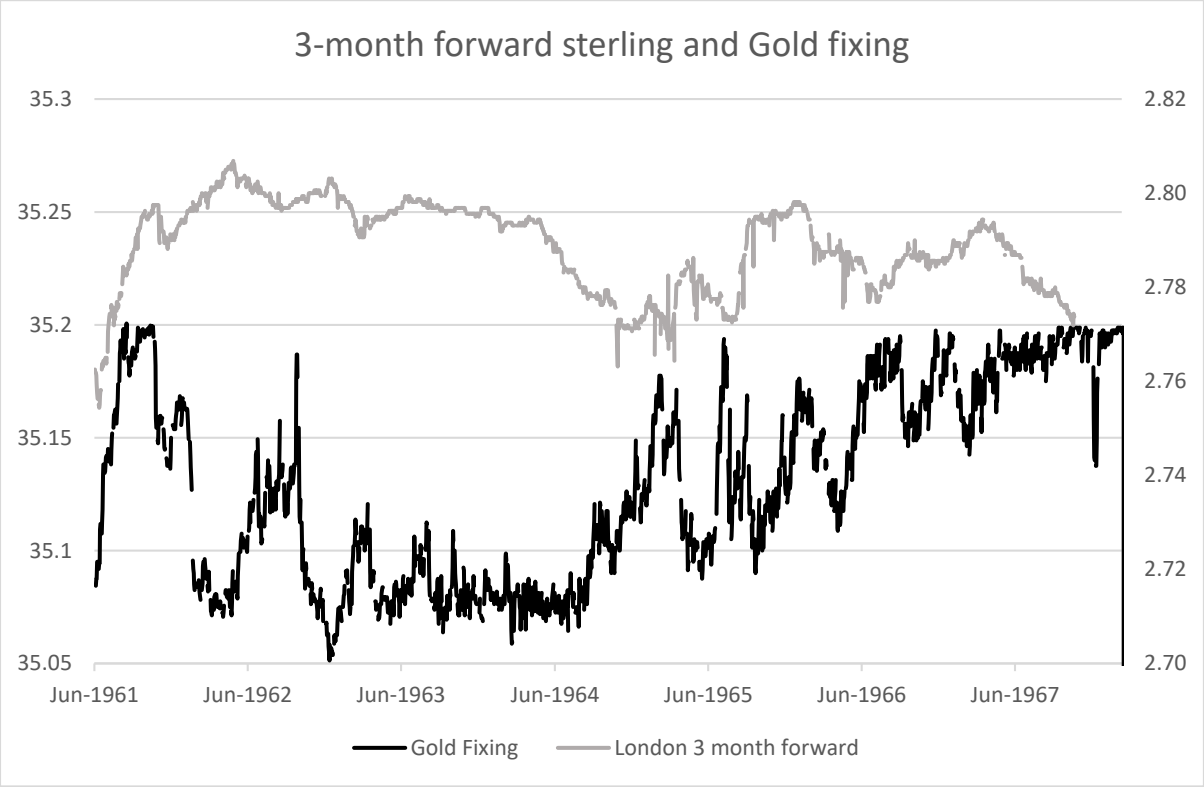

Figure 48 Gold fixing price at 11 am and London dollar/sterling three-month forward rate
Source: Forward data Accominotti et al., 'Currency Regimes and the Carry Trade'.

Does the negative correlation between the gold price and the sterling forward rate hold in the data? To test this, I regress the London price of gold on the forward sterling rate with a one-period lag. Data are daily, the gold price come from the Bank of England archives and the forward rates from Accominotti et al.[535] Using a lag is a way to cope with the fact that the value

[535] Accominotti et al., 'Currency Regimes and the Carry Trade'; 'Dealers' reports', London, Archives of the Bank of England, C8.

of the exchange rate is determined at the end of the day, whereas fixing the gold price takes place in the morning. The estimated equation includes a constant, which I correct for auto-correlation using the Huber-White procedure. Over the full sample (January 1961 to November 1967 or March 1968), the London price of gold is stationary. I use the data in levels in the estimation and not as a difference. I have checked that there is no co-integration relationship between the two variables. The first estimation sample excludes the 1967 devaluation and stops on 15 November 1967. It yields a coefficient of -0.58, which means that when the forward exchange rate depreciates by one basis point, the gold price increases by approximately 0.6 basis points. Put differently, a decrease in the forward exchange rate from 2.8 to 2.75 is associated with an increase in the price of gold from 35.08 to 35.11. The second column in Table 18 shows that the coefficient is smaller when December 1967 to March 1968 is included. During this period, despite large variations in the sterling exchange rate, the gold price was kept constant at the upper band thanks to Gold Pool interventions.

Dependent variable: London gold price (fixing)

	January 1961 – November 1967	*January 1961 – March 1968*	*January 1961 – October 1964*	*September 1964 – November 1967*
Sterling forward rate (-1)	-0.58***(0.17)	-0.16***(0.02)	0.64**(0.31)	-0.89***(0.09)
Trend				0.01***(0.01)
Constant	36.75***(0.48)	35.57***(0.05)	37.10***(0.26)	37.10***(0.26)
Adjusted R-square	0.01	0.04	0.01	0.12
No. observations	1708	1788	790	919

Table 18 The relationship between the gold price and the sterling forward rate (daily data)

*** signifies statistical significance at the 1% level; ** signifies statistical significance at the 5% level; * signifies statistical significance at the 10% level.

I look at different sub-samples in order to determine whether this relationship was constant over time. This raises an econometric issue, however, as the price of gold was not

trend-stationary over 1964–6 when the Gold Pool allowed a continuous increase until it reached the upper bound of $35.20. The Augmented Dickey-Fuller Unit root test confirms that the series is trend stationary between the October 1964 sterling crisis and the November 1967 sterling devaluation. For this sub-sample I account for this linear trend in the estimation (labelled trend in Table 18). The negative relationship holds and is still significant over 1964–7 but not over the previous sub-sample (January 1961–October 1964). The period 1961–3 is not uneventful, but sterling troubles in 1961 and 1963 are short-lived. Furthermore, as argued above, the period was marked by international political crises which did not foster contagion between dollar and sterling. The sterling effect on the gold-dollar price only really emerges with the 1964 sterling crisis.

4.2. The 1967 Devaluation and the Fall of the Gold Pool[536]

The 1967 devaluation triggered the collapse of the Gold Pool, setting the stage for the demise of Bretton Woods. Policy-makers at the time feared that a sterling devaluation would have consequences for the stability of the international monetary system, but they did not expect the strength of the run on gold that followed. The devaluation, more than anything else, was the main cause of the run on gold starting at the end of November 1967. Less than four months later, the Gold Pool was disbanded. Subsequently, US policies were more isolationist. It was the first clear breach in the Bretton Woods system and would end some 150 years of (sometimes interrupted) gold-backed systems. If the gold standard started with Britain in 1821, here I argue that it ended in Britain with the 1967 devaluation. US inflation and external imbalances played an important role in the end of the Bretton Woods system, but the 1967 devaluation was the

[536] This section draws heavily on joint work with Bordo and Monnet: Bordo, Monnet and Naef, 'The Gold Pool'.

spark that triggered it. Economist Harry Johnson argued in 1968 that if the sterling devaluation had occurred in 1964-65 or even in 1966, it might not have triggered a run on gold.[537] In 1967, however, inflation in the US was growing rapidly and therefore the 1967 devaluation did trigger a run on gold. And 'The immediate source of the gold rush was the belief that, like the pound, the dollar was overvalued and would have to be devalued'.[538]

In this section I demonstrate econometrically the link between sterling devaluation and the disbanding of the Gold Pool. I also show the minor role France played, contrary to the claims made in earlier literature.[539] This is facilitated by the use of daily Gold Pool intervention figures as well as data on operations in the Fed gold window. These data are withheld in the archives of the New York Fed. Yet, documents from the BIS allowed the reconstruction of operations at the Fed gold window, offering a new story. Finally, relying on the press at the time, this section gives a clearer overview of the precise timing of the run on gold.

4.2.1. The 1967 devaluation as a trigger for the run on gold

Existing literature mentions the link between the run on gold and the 1967 devaluation, but this dissertation is the first to focus on this link and provide econometric evidence for it. Gavin cites a study by the Federal Reserve in the summer of 1966 that anticipated that a sterling devaluation of 15% would produce 'serious market uncertainties about the viability of other exchange rates, including those of the dollar'.[540] This fear was shared by policy-makers such as Secretary of the US Treasury Henry Fowler, who stated a few weeks before the devaluation that 'if sterling falls, there will be great monetary unrest. The dollar will be affected strongly.'[541]

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[537] Johnson, 'The Sterling Crisis of 1967 and the Gold Rush of 1968', 10.
[538] Ibid., 15.
[539] Allan H. Meltzer, 'U.S. Policy in the Bretton Woods Era – Review – St. Louis Fed', *Federal Reserve Bank of St. Louis Review*, 73 (May/June) (1991), 54–83; Barry Eichengreen, *Global Imbalances and the Lessons of Bretton Woods* (Cambridge, MA: MIT, 2007).
[540] Gavin, *Gold, Dollars, and Power*, 168.
[541] Ibid., 171.

In its 1968 annual report, the Federal Reserve noted that the 'devaluation of the pound sterling on November 18th, 1967 was a major shock to the world's financial system', and that a week after the devaluation, 'the private demand for gold surged to record levels in the London and other foreign markets, as confidence in exchange parities was badly shaken'. In 1968, the economist Harry Johnson noted that 'purchase of gold for private use was rising rapidly in the period up to immediately before the speculation associated with the devaluation of sterling'.[542] Bordo, Simard and White remarked that the dollar started to weaken after the sterling devaluation.[543] Bordo notes mounting pressure on the dollar 'via the London gold market'.[544] Schenk observes that Gold Pool losses in the wake of the devaluation put the syndicate under stress, even though they released a joint statement on November 26th in support of the $35 an ounce price.[545] Eichengreen also writes that, after the Middle East crisis of early 1967, the 'devaluation of sterling in November then further undermined confidence in the remaining reserve currency, the dollar'.[546] Figure 49 is an editorial cartoon from a few days after the devaluation which illustrates the view that once sterling parity 'died', the dollar would be next in line.

[542] Harry G. Johnson, 'The Gold Rush of 1968 in Retrospect and Prospect', *The American Economic Review* 59, 2 (1969), 346.
[543] Michael D. Bordo, Eugene N. White and Dominique Simard, 'France and the Breakdown of the Bretton Woods International Monetary System', in *International Monetary Systems in Historical Perspective*, ed. Jaime Reis (New York: St. Martin's Press, 1995), 16.
[544] Bordo, 'A Historical Overview', 70.
[545] Schenk, *The Decline of Sterling*, 182.
[546] Eichengreen, *Global Imbalances*, 57.

Figure 49 Cartoon depicting the death of sterling and the dollar

Source: 'Bullion Demand at Highest Peak in Living Memory', *Guardian*, 23 November 1967, 1.

The US authorities anticipated that the sterling devaluation would be a shock to the gold-dollar market, although they did not prepare enough to absorb this shock fully or overestimated their ability to handle the situation. That the 1967 devaluation would cause instability in the international monetary system was clear to contemporaries. What was not clear was how this contagion would take place.

The impact of the sterling devaluation on Gold Pool operations can be seen clearly in Figure 50. After the devaluation, the Gold Pool lost in excess of $1238 million over just a few months, according to the dealers' reports.

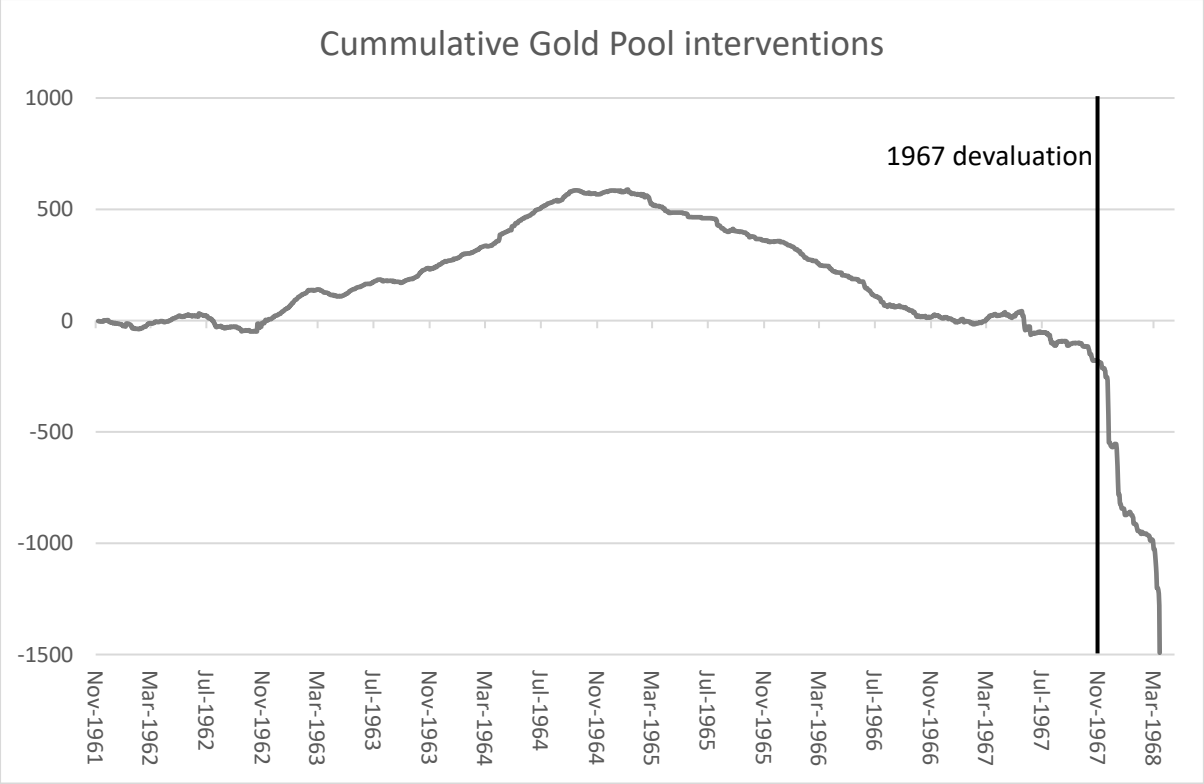

Figure 50 Cumulative Gold Pool intervention in million dollars from the creation of the Pool (6 November 1961) to its fall (14 March 1968)

Source: Dealers' reports (C8).

The increase in Gold Pool interventions after the sterling devaluation is associated with a decrease of an unprecedented scale in US reserves. Using a Bai-Perron autoregressive test on monthly US monetary gold reserves, a clear break can be found in December 1967, the month following the sterling devaluation.[547] The results are robust whether the sample covers the whole Bretton Woods period (1944–71) or only the 1960s.[548] Figure 51 is an illustration of the Bai-Perron break in December 1967. The red line is US gold reserves, the green line is lagged US monetary gold and the blue line shows the differential between the two. The red vertical line shows the significant break.

[547] Using a sample from 1960–70. The break is robust in many different settings (trimming: 10–25%, significance:1%, maximum breaks: 1–5).
[548] The break is also found in the 1947–70 specification (trimming 10%, maximum breaks: 2-5, and 5% significance).

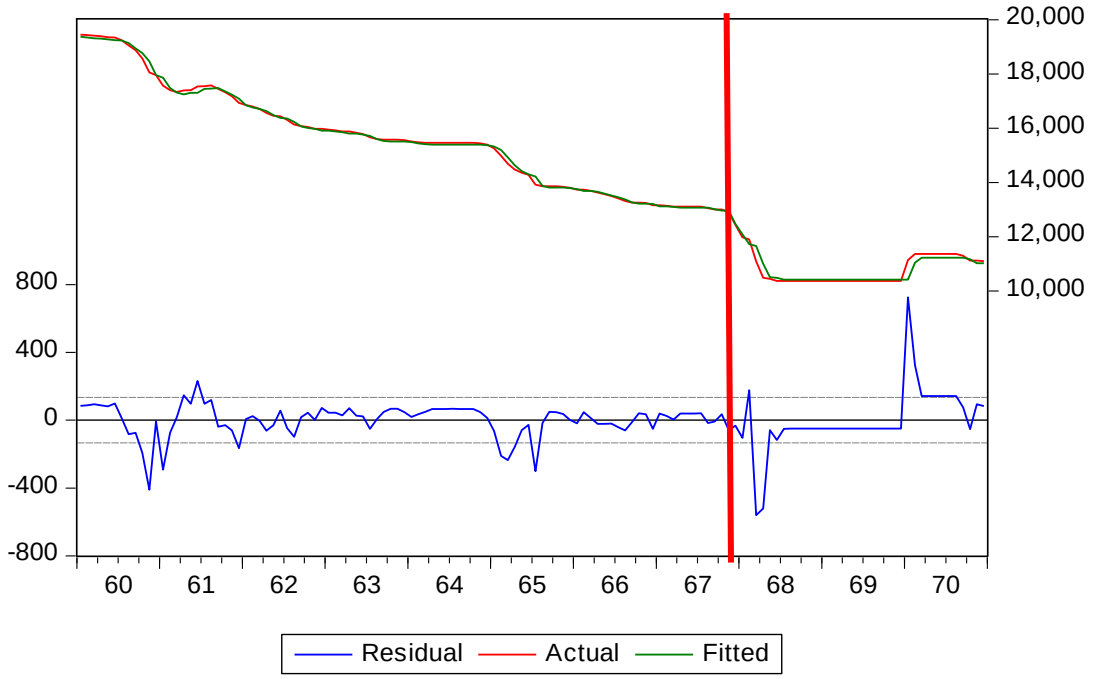

Figure 51 Bai-Perron break in December 1967

4.2.2. The role of France and sterling in the disbanding of the Gold Pool

After seeing the importance of sterling, what role did France play? The consensus is that France played a substantial part in the fall of the Gold Pool. I argue that France's role was minor at best compared with the impact of the 1967 devaluation. If de Gaulle's 1965 speech had an impact on the Gold Pool, by 1967 France had little influence on the international monetary system. The contribution of this subsection is to overturn commonly held beliefs in the literature that France was instrumental in the fall of the Gold Pool. I present new data on the activity of central banks at the Federal Reserve gold window and demonstrate that France only played a role until 1966 and not in 1967 when the Gold Pool started to lose significant amounts of gold. The French gave the Gold Pool bad press on occasions, but never threatened the institution. Based on my archival work at the Bank of France, the French stayed in the Pool until the end and even voluntarily avoided any action that would have directly endangered the syndicate.

The literature mentions the role of France in the fall of the Gold Pool without giving a clear indication of how the country affected the gold syndicate. Coombs mentions the 'Gaullist attack on the dollar and sterling' as one of the causes of the fall of the Gold Pool.[549] Eichengreen mentions the attack by the French president as one of many contributing factors to a deteriorating situation after 1964.[550] Meltzer argues that '1967 is the peak for France's accumulation of gold'.[551] This claim is contradicted by new data Meltzer did not have access to. The French themselves were eager to claim that what they did was powerful enough to shape the destiny of the international monetary system.[552]

Let us first see how the gold window worked. Only central banks had access to the Federal Reserve gold window, not private customers. It gave central bankers access directly to US gold stocks at $35 an ounce. The window avoided central banks buying gold directly in private gold markets such as the London gold market. By keeping central banks out of the market, gold window operations left the gold price unaffected. However, this facility also directly depleted US gold stocks. And as the US was guaranteeing the price of gold in the Bretton Woods system, if US gold stocks ran low there was a risk of a run on US gold, just as depositors would precipitate a run on a bank if they believed it did not have enough capital. This explains why, when de Gaulle announced in 1965 that France would convert its dollar holdings at the Fed gold window instead of holding them as reserves, it put pressure on the US. What was never established in the literature, because the data were kept secret, is when the French converted dollars into gold at the gold window and what the magnitude of their purchases amounted to.

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[549] Coombs, *The Arena*, 155.
[550] Barry Eichengreen, *Globalizing Capital: A History of the International Monetary System*, second edition (Princeton, NJ: Princeton University Press, 2008), 52.
[551] Meltzer, 'U.S. Policy in the Bretton Woods Era – Review – St. Louis Fed', 63.
[552] Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', 2017.

Hence I gathered data on the Fed gold window from two indirect sources of institutions which both collected the information from the New York Fed. The Fed is still unable to share these data 52 years after the events, highlighting their sensitive nature.[553] The first and main source of the quarterly numbers is a report on gold consumption and production from the Bank for International Settlements (BIS).[554] This report was first written in 1962 and new data were added yearly. The second source is the minutes that the Bank of France kept of the gold experts' meetings in Basle. Recall that the Gold Pool was mainly managed by a group of experts from participating central banks during monthly meetings in Basle. During these meetings, the state of US gold reserves was occasionally discussed. The Bank of France kept detailed minutes of these meetings and occasionally reported gold window operations. The data for the last quarter of 1966 are, however, missing from both these sources.

Figure 52 presents the Fed gold window data. Positive numbers indicate a foreign central bank selling gold to the Fed and receiving US dollars in exchange. This is expected, other things held constant, to have a positive effect on the confidence in the US as it increases its gold reserves. Negative numbers indicate a foreign central bank buying gold from the US, diminishing US gold reserves. For the case of the UK, most of the values come from Gold Pool operations which were managed by the Bank of England on behalf of the syndicate.

[553] The Fed was very helpful but, for legal reasons, unable to share anything that relates to gold transactions with foreign central banks unless they received explicit consent from the given institution. They confirmed that even through a request invoking the Freedom of Information Act (FOIA), the data would be redacted.
[554] Report on gold consumption and production, 30 November 1962, addendum 8 February 1969, BISA 7.18 (12) DEA 20.

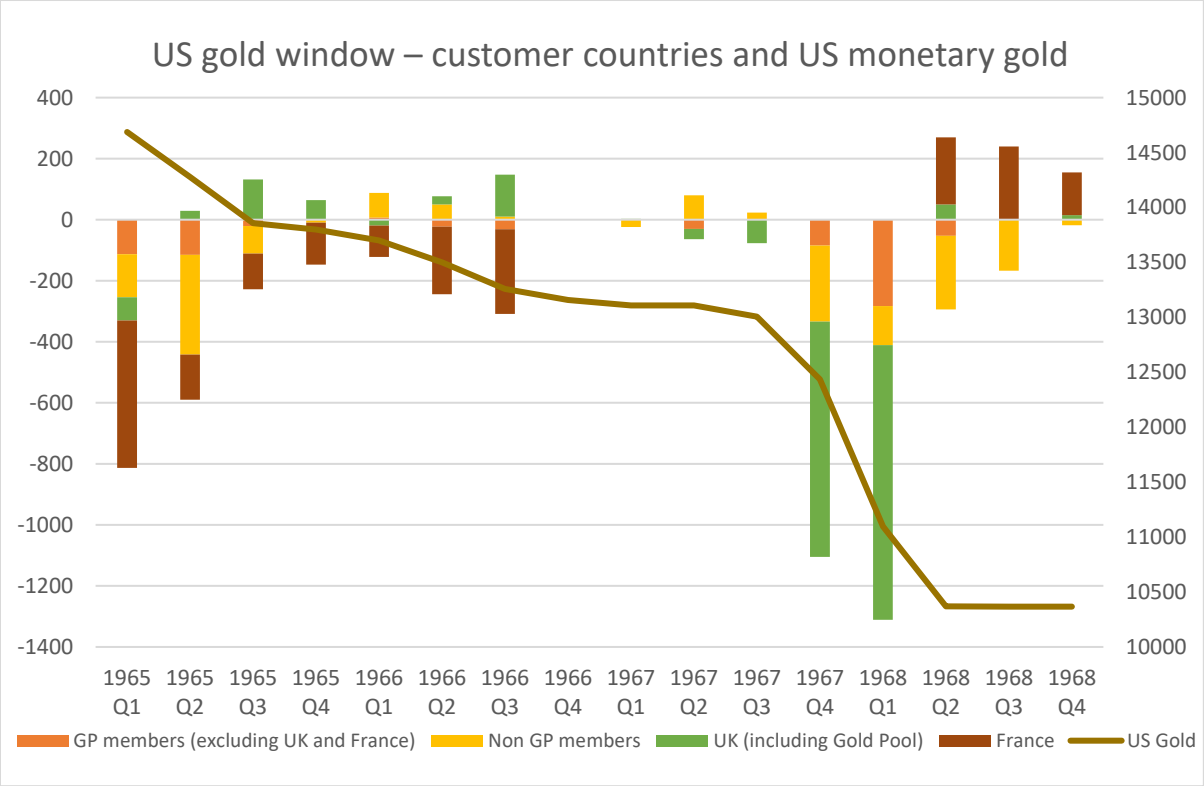

Figure 52 US gold window customer operations

Sources: gold consumption and production, Archives of the BIS, BISA 7.18 (12) DEA 20. Q3 1966 comes from the 'Minutes of the gold experts meeting', 5 November 1966, Archives of the Bank of France, 467200501-74. During the Gold Pool, sales and purchases by the UK are those of the Gold Pool.

Note: Positive values represent US purchases of gold against dollars, negative values represent US sales of gold against dollars. Data for Q4 are missing.

The data show two features: First, France played no major role in the fall of the Gold Pool in 1967 and second, most of the drain on US gold reserves during the period comes from the UK, which managed the Gold Pool. On the first point, France was accumulating gold from the Federal Reserve only until the end of 1966. After that, the French stopped buying gold from the Fed and, from the second quarter of 1968, they even started replenishing US gold reserves by exchanging French gold for US dollars. This challenges findings in the literature about France playing a significant role in the fall of the Gold Pool. It also revises claims by Meltzer about French operations at the gold window in 1967.[555] It is likely that the French stopped

[555] Meltzer did not have access to these data and there was therefore reason to believe that the French pursued their offensive on the international monetary system through gold purchases at the gold window. Meltzer, 'U.S. Policy in the Bretton Woods Era – Review – St. Louis Fed', 63.

converting dollars at the gold window simply because they had no more dollars to convert. Monnet argues that France stopped converting dollars into gold in 1966 because this policy had failed to provide France with greater power in discussions on the international monetary system. They had realised this when the French proposal to create an international reserve asset linked to gold was rejected in 1966.[556] After the demise of the Gold Pool, France became a net contributor of gold. The country needed dollars to defend the French franc in the spring of 1968, due in part to the events of May 1968. Meltzer suggests that the Paris riots forced France to sell $1.4 billion of gold between March and December 1968, part of which went to the US.[557] Between 1967 and 1968, when the US gold reserve came under stress and the gold market crisis began, France did not buy gold; nor did it contribute to US gold reserves.

The second feature that appears in the data is that the biggest drain on US gold was in the last quarter of 1967 and the first quarter of 1968. Figure 52 reveals that in Q4 1967 and Q1 1968, the principal purchaser at the US gold window was the Bank of England, which was acting on behalf of the Gold Pool. There was no central bank run on the US gold window as might have been expected if central banks feared the dollar was going to be devalued. There was little pressure on the Fed gold window before the devaluation of sterling in the fourth quarter of 1967 partly because the US was leaning on other governments not to use the gold window and partly due to a mutual understanding that such operations would be detrimental to the international monetary system. Note that Q1 1968 shows more demand from Italy, a Gold Pool member but, since figures are quarterly, it is impossible to be certain which part of the demand occurred between 15 March and 31 March, when the Gold Pool was no longer operating and which part was an actual run on gold. In any case, the amount converted by Italy

[556] Eric Monnet, 'Une Coopération à La Française. La France, Le Dollar et Le Système de Bretton Woods, 1960–1965', *Histoire@Politique. Politique, Culture, Société* 19 (2013).
[557] According to gold window data, $600 million of these sales went to the US, implying that another $800 million must have gone to private markets. Meltzer, *A History of the Federal Reserve, Volume 2, Book 1, 1951-1969*, 542.

in March 1968 is relatively trivial compared to the losses of the Gold Pool after the sterling devaluation.

During the last quarter of 1967 the largest gold demand other than the Gold Pool came from Algeria (labelled a non-GP member in Figure 52). Past literature claimed that this was an indirect operation on the part of the French but new archival evidence seems to challenge this assertion. For example, according to Solomon, the Bank of Algeria purchased $150 million in gold from the US 'presumably at French instigation'.[558] However, according to the unpublished transcripts of the General Council of the Bank of France, French authorities were not involved. The minutes explain what happened. The Bank of Algeria held French francs with French commercial banks. These francs were convertible to any currency and the Bank of Algeria, learning of international instability in the wake of the sterling devaluation, decided to convert these French francs into dollars in order to buy gold.[559] The Bank of France noted that the Algerian institution could also have bought gold directly in the Paris market, but gold at the Fed window was cheaper.[560] In these secret minutes, the governor of the Bank of France told the General Council that it was 'surprising and annoying that people could suspect the Bank of France of wanting to behave in an ill-intentioned manner'.[561] Given France's past behaviour at the US gold window, rumours were hardly surprising. However, the evidence from the transcripts of the General Council, which were kept secret, shows that France had nothing to do with the attack on the US gold reserve.

Another opportunity France had to undermine the Gold Pool occurred in the summer of 1967. At this point, France decided not to contribute to increase the Gold Pool resources

[558] Robert Solomon, *The International Monetary System, 1945–1976: An Insider's View* (New York: Harper & Row, 1977), 115 (quoted in Eichengreen, *Global Imbalances*, 57).
[559] 'Procès-verbaux du Conseil Général [General Council minutes]', 50, 14 December 1967, Paris, Archive of the Bank of France, 783–4.
[560] Ibid.
[561] The original French reads: 'il est surprenant et un peu pénible que l'on ait pu, à propos de cette opération, suspecter le comportement et les intentions de la Banque de France.', 'Procès-verbaux du Conseil Général [General Council minutes]', 50, 14 December 1967, Paris, Archive of the Bank of France, 783–4.

from $370 to $420 million. The Bank of France told other central banks that it would no longer participate in the allocation of the losses when the Pool's deficit was below the maximum amount fixed in May 1967 at $370 million.[562] This meant that France would only lose up to the share it had invested until September 1966. However, as France had only a 9% share its participation before this limit increase was only of $33.3 million. This sum would cover less than one day's Gold Pool activity at the height of the crisis and was therefore not instrumental to the success of the Pool. However, the news that France was leaving the Gold Pool could have had harmful consequences, but France did not make public that it was leaving the gold syndicate.

Why did a country that publicly attacked the international monetary system in February 1965 decide not to do so in the summer of 1967? A confidential note from the international directorate of the Banque de France on 8 June 1967 sets out the reasons why France stopped participating in the Pool without formally leaving it.[563] At that time, the syndicate's losses were not seen as a major concern since they were moderate in comparison to the previous surpluses. According to this note, the main reason for leaving the syndicate was that it would 'no longer support without limit a monetary system that works in a way that we consider unsatisfactory'.[564] Yet, the note recommended not leaving the Pool formally and publicly but instead suspending participation if the limit of resources was increased again. Leaving the Pool 'would not have been a surprise' to other participants 'given the usual reserved attitude' of France in relation to the Pool.[565] However, it would have been too strong an attack against political cooperation with its western allies. Immediately following this recommendation, the

[562] 'Historique sommaire du Gold Pool. Confidentiel [Gold Pool chronology], document completed between June 1962 and October 1967, Paris, Archives of the Bank of France, 1489200803/60.
[563] 'Convient-il pour la France de quitter le Pool de l'Or ? [Should France leave the Gold Pool?]', internal memorandum by M. Théron, 8 June 1967, Paris, Archives of the Bank of France, 146720050173.
[564] Ibid.
[565] 'Convient-il pour la France de quitter le Pool de l'Or ? [Should France leave the Gold Pool?]', internal memorandum by M. Théron, 8 June 1967, Paris, Archives of the Bank of France, 146720050173.

Bank of France suspended its participation in the Pool at the 31st meeting of the gold experts held on 11 June.

Although France had not formally left the Pool by the end of November 1967, it became clear to other members that, given the large and immediate losses following the sterling devaluation, France would never contribute to it again. In November 1967, three days after the devaluation, the French leaked the fact that they had left the Gold Pool to the press. This move is analysed in further detail in the subsection on the run on gold below. But despite this leak, they maintained their initial share in the scheme.

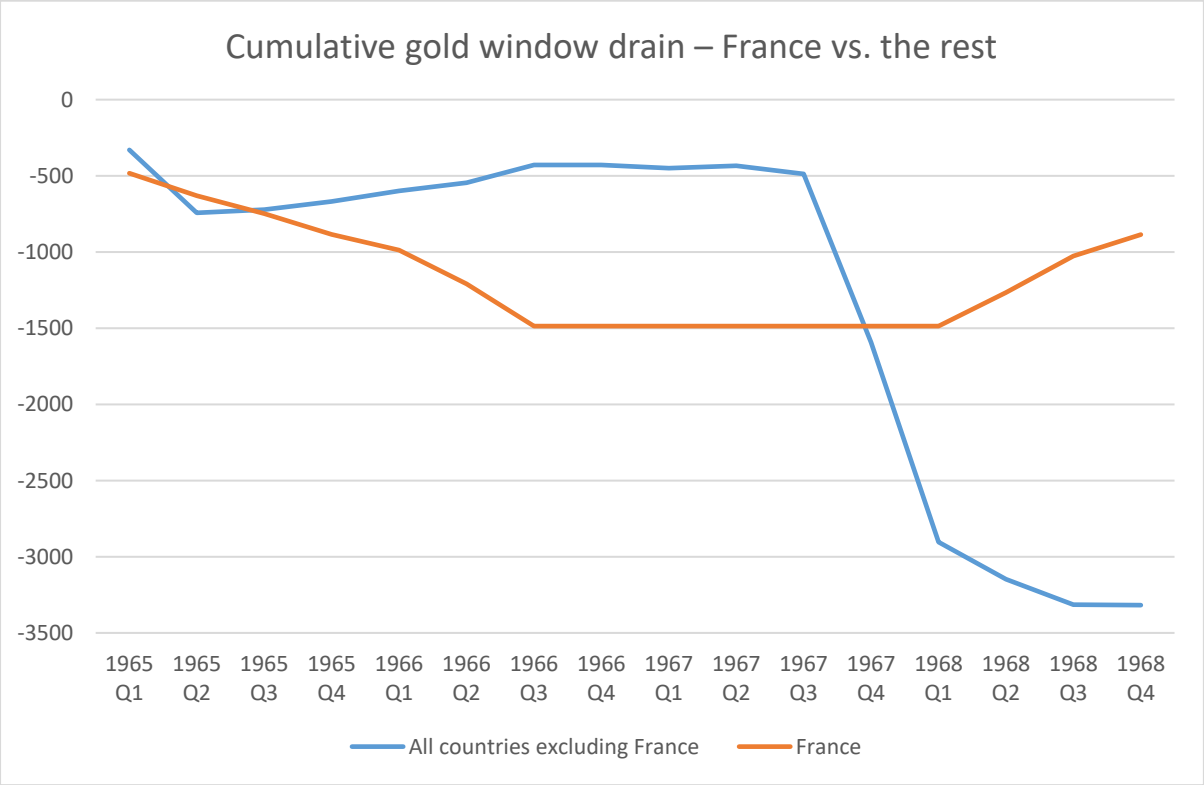

Figure 53 Cumulative gold purchases at the Fed gold window for France vs. all other countries
Source: Data as in Figure 52 with categories merged.

Contrary to the accepted view, the role of France in the fall of the Gold Pool was not instrumental. The most convincing argument comes from the gold window. For 1967 and 1968,

when the Gold Pool fell apart, France contributed $600 million to US gold reserves when the Gold Pool drained $1714 million from US reserves. Figure 53 summarises the main point, showing that in late 1967, when the Gold Pool came under attack, France no longer purchased gold from the Fed and later started contributing gold, thereby supporting the system. This does not mean that France would not have wanted the international monetary system to collapse in order to replace it with an alternative (ideally with France playing a more significant role), but the country did not take the lead in the fall of the gold syndicate as explained with new data.

4.2.3. Sterling, Gold Pool interventions and US gold reserves before the 1967 devaluation

After looking at the role of France and sterling separately, here I econometrically analyse the impact of different factors on the fall of the Gold Pool. This analysis is run with monthly data to include a broader set of macroeconomic variables. The goal of the analysis is to explain the behaviour of the Gold Pool; therefore, the explained variable is the monthly operations by the Bank of England for the Gold Pool on the London gold market. Negative values represent gold sales to defend the price of gold and positive values represent gold purchases to replenish the Pool's reserves. As explanatory variables for the interventions by the Pool, three competing explanations are tested: US domestic macroeconomic factors; French gold conversion of dollars into gold; the sterling exchange rate.

US macroeconomic factors likely to affect the credibility of the dollar are proxied by the US inflation rate, the growth rate of US gold reserves and the change in the US government deficit. Since the government deficit is available at a quarterly frequency only, the series is interpolated with a quadratic trend.[566] At a monthly frequency, the change in US gold reserves

[566] The US government deficit is the 'net operating surplus', seasonally adjusted, available from FRED (series FGOSNTQ027S). It is divided by GDP and interpolated using a quadratic interpolation to obtain a monthly series.

is the best proxy for the state of the US balance of payments. Both US series come from the St Louis Federal Reserve database (FRED).[567] The pressure of the French central bank on US gold stock is proxied by the growth rate of French gold reserves. The sterling exchange rate turmoil is proxied by the three-month dollar–sterling forward exchange rate from Accominotti et al., used previously.[568]

Since Gold Pool interventions directly and contemporaneously affected the growth rate of French and US reserves, these explanatory variables are used with a lag in the estimations. To isolate the effects of the sterling devaluation of November 1967, estimations are run on two samples: one sample (November 1961 to October 1967) does not include the devaluation, the other includes the devaluation (November 1961 to March 1968). The raw data of Gold Pool interventions are used in the estimations since they are not seasonal, the series is stationary and it does not have a unit root. The results are reported in Table 19.

French operations seem to have had no impact on Gold Pool interventions as the coefficients are not significant. France did not operate in the London gold market as agreed under the Gold Pool rules. However, France could hoard or sell gold in Paris or Zurich and could also make its mark on the system with its operation at the Fed gold window. These operations are the ones that previous literature thought were having an impact on the stability of the system. This means that when the French were hoarding or selling gold, the London gold market did not come under pressure. This does not mean that French operations did not matter during some periods, but they cannot be viewed as a major factor explaining the regular operations of the Gold Pool to stabilise the London price of gold. This is even true when not accounting for sterling, as in Table 19, regression (3).

[567] Reference FGOSNTQ027S for the government deficit and M1476CUSM144NNBR for the US gold stocks.
[568] Accominotti et al., 'Currency Regimes and the Carry Trade'.

Dependent variable: Gold Pool interventions

	(1)	(2)	(3)
	Nov.1961-Oct.1967	*Nov.1961-Mar.1968*	*Nov.1961-Mar.1968*
Growth rate of French gold (-1)	-0.11 (0.57)	-1.86 (3.56)	2.90 (4.21)
Growth rate of US monetary gold (-1)	4.58**(2.29)	-44.86***(12.00)	23.24**(10.84)
US inflation rate (-1)	-19.21***(6.42)	-40.05 (39.27)	
Sterling forward rate (-1)	355.01***(129.60)	833.93***(111.19)	
US Federal deficit (-1)	-13.74**(5.36)	-70.72**(32.77)	
Constant	-968.44***(361.35)	-2250.18***(309.38)	
Adjusted R-square	0.30	0.51	0.01
Nb of observations	72	77	77

Table 19 Determinants of Gold Pool interventions (monthly data)

Source: See text. *** signifies statistical significance at the 1% level of significance; ** signifies statistical significance at the 5% level of significance; * signifies statistical significance at the 10% level of significance.

The sterling forward rate, on the other hand, has a strong and significant effect on Gold Pool operations. The effect is much stronger after the devaluation but is also important before (compare regressions 1 and 2 in Table 19). This is in line with findings in subsection 4.1.3 showing that before the devaluation, the sterling forward rate had an impact on the gold price.

US factors also played a significant role. This is in line with traditional explanations for the fall of the Bretton Woods system such as those put forward by Bordo and Eichengreen, for example.[569] When inflation, government deficit or US gold losses increased, the Gold Pool deficit increased as the Gold Pool was forced to sell more gold. This effect of the US deficits was five times stronger when the period November 1967–March 1968 is included in the sample, which corroborates the argument that, alongside the sterling devaluation, US domestic policy, and especially the failed stabilisation plan of January 1968, was also key for explaining the US decision to close the Gold Pool in early 1968.[570]

[569] Bordo and Eichengreen, 'Bretton Woods and the Great Inflation'.
[570] On the stabilisation plan of January 1968, see Robert Solomon, *The International Monetary System, 1945–1981* (New York: Harper & Row, 1982), 117; Gavin, *Gold, Dollars, and Power*, 177–80.

To sum up, the econometric analysis shows that Gold Pool interventions were significantly determined by US domestic economic conditions and the pressure on sterling provided by its forward exchange rate. This was the case before the sterling devaluation and such effects became stronger thereafter.[571] The sterling devaluation was a trigger and led to unprecedented interventions, but the main factors influencing Gold Pool interventions were in place long before that.

4.2.4. The run on gold

In this subsection, I analyse the events surrounding the 1967 devaluation to better disentangle the different pressures on the gold market. The contribution is to give a clearer timeline of the events putting the gold market under pressure after the devaluation. New data on Gold Pool intervention allow a clearer picture of the crisis to emerge. The timing of Gold Pool losses perfectly matches the 1967 devaluation. The run on gold started after the weekend following the devaluation was announced. According to the dealers' reports at the Bank of England, gold sales were $15 million on Tuesday, $59 million on Wednesday, $93 million on Thursday and $127 million on Friday. The Friday sales represent over 38 times the average sale of $3.31 million for the period before the crisis (November 1961 to November 1967). This is 35 standard deviations from the average for the period. Therefore, the sales immediately after the weekend of the sterling devaluation clearly stand out as exceptional. This is represented graphically in Figure 54.

[571] Between 1965 and March 1968, the cumulative deficit of the Gold Pool was $3692 million (half of this was covered by the US); during the same period, the US monetary gold stock diminished by roughly a quarter from $15,258 to $11,009 million. US Gold Pool losses account for 44% of US gold stock diminution ($1846 out of a $4162 million drop). US monetary gold data are from FRED. Gold Pool losses are from BISA_7.18 (14) LAR27 Summary of Gold Pool operations, 28 June 1968. Eichengreen, *Global Imbalances*, 54. offers similar figures.

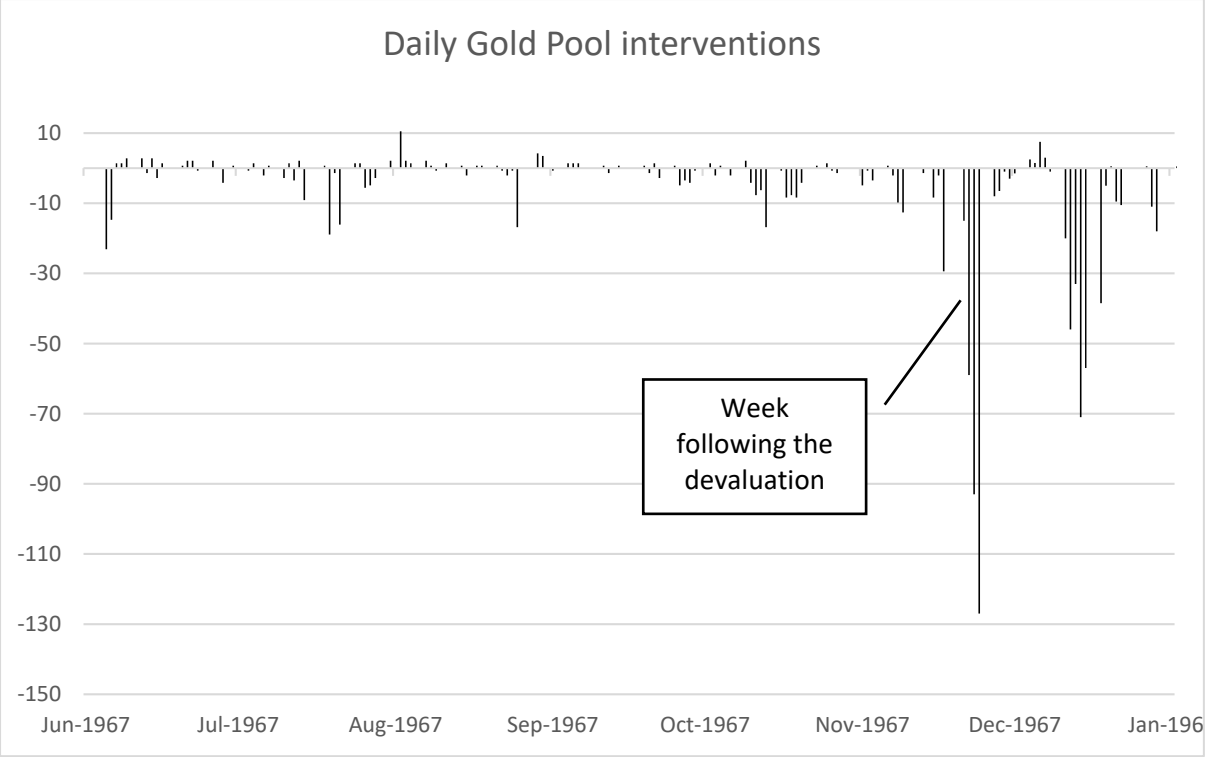

Figure 54 Daily Bank of England intervention in the gold market

Source: Bank of England dealers' reports (C8).

Eichengreen mentions leaks in the press that the French had left the Gold Pool the week after the devaluation.[572] De Gaulle saw the devaluation as an opportunity to attack the dollar at its weakest point, and his attacks increased pressure on the gold price. However, de Gaulle was also greatly helped by statements by the US Treasury Secretary announcing that the US dollar was 'in the front-line' on 22 November.[573] What seems clear is that the 1967 devaluation triggered a run on gold, which was then exacerbated by French attacks and US officials trying to deny the imminent devaluation of the dollar.

Before the devaluation, the press was already portraying the dollar as a potential target in the event of a sterling devaluation. On 17 November, two days before the devaluation, the *Wall Street Journal* wrote that 'speculation is rife about the future of the British pound. Will it

[572] Ibid., 57.
[573] 'France Hits at Dollar through Gold', *Guardian*, 22 November 1967, 1.

be devalued and, if so, when?'.[574] The journal argued that 'Devaluation would persuade many people that the U.S. dollar was under serious pressure, and in nervous world money marts [markets] the thought can father the fact.'[575] The journal elegantly expressed its opinion that a sterling devaluation would probably trigger a run on the dollar and that this could take the form of a run to the exit in a self-fulfilling crisis.[576] All this was before any leak from France, which helps the counter-factual that without any French leak, pressure would have probably built anyway. Therefore, investors had already been warned that a sterling crisis could trigger a dollar crisis, which would encourage them to be the first to move from the dollar to gold before the crisis occurred.

Even so, the French leak certainly helped. The next working day after the devaluation (Monday, 21 November), the Bank closed the London gold market along with most other London markets. Therefore, the fallout of the devaluation was not felt until Tuesday, 22 November. At this point, the Gold Pool losses were substantial but still sustainable. On Wednesday, 23 November, however, the run accelerated and things got worse on every day of the post-devaluation week.

News about France having left the Gold Pool earlier in June 1967 leaked on Monday, 21 November in Paris (markets were still closed in London) and was relayed in the international press the following day. It is unclear whether international investors would have got wind of the news on the Monday ahead of the reopening of the market, or if they were informed of the French leak on the day the market reopened when the international press picked it up. On the Tuesday, however, a British newspaper broke the news. The *Guardian* reported that the French

[574] 'Devaluation Delusions', *Wall Street Journal*, 17 November 1967, 18.
[575] Ibid.
[576] The rationality behind a self-fulfilling crisis was later theorised by economists, starting with Maurice Obstfeld, 'Rational and Self-Fulfilling Balance-of-Payments Crises', *The American Economic Review* 76, 1 (1986), 72–81.

Ministry of Finance reacted with a 'tight-lipped "no comment"'.[577] However, the details collected from a journalist working for *Le Monde* 'point[ed] to a deliberate leak, apparently aimed at undermining confidence in the ability of the United States to guarantee the price of gold at $35 an ounce'.[578] Therefore, France definitely played a role in the momentum of the run on gold as the *Washington Post* pointed out a day later: 'The run was partially blamed on France's belated disclosure earlier this week that she pulled out of the nine-nation gold pool, which seeks to stabilize international transactions, last May.'[579] However, as the *Washington Post* stated, although France had the power to spread gossip, it did not have dollar reserves big enough to inflict any direct damage on the US: 'the de Gaulle government has insufficient dollar reserves to make substantial purchases of U.S. gold'.[580] As seen in the previous section, France had no firepower and had stopped converting dollars into gold at the end of 1966. De Gaulle's attack on the dollar was no more than talk.

Not without irony, US officials were still arguing (publicly, at least) that France did not orchestrate an attack on gold. The *Guardian* reported that US officials 'dismissed the idea that the dollar was under attack and that France was leading the charge. "It just isn't the case," a Treasury official said.'[581] He continued, 'I put every credence in an official French Government statement. The French statement speaks for itself.'[582]

If France played a role, the US management of the crisis did not help. The comment that inspired most anxiety in the market, as it was echoed in most newspapers over several days, was Treasury Secretary Fowler mentioning that the dollar was 'in the front line'. The *New York Times* quoted a 'non-French investment banker' saying that 'Mr. Fowler's words

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[577] 'Effort to Undermine Confidence in US', *Guardian*, 22 November 1967, 1.
[578] Ibid.
[579] The *Washington Post* was misinformed. France left in June not May. 'Heavy European Gold Trade Follows Pound Devaluation: Threat is Unclear' The *Washington Post*, 23 November 1967, L8.
[580] 'Heavy European Gold Trade Follows Pound Devaluation: Threat is Unclear' The *Washington Post*, 23 November 1967, pL8.
[581] 'US dollar "not under attack"', *Guardian*, 24 November 1967, 1.
[582] Ibid.

have been widely circulated in Europe as a sign of Administration anxiety.'[583] The *Washington Post* reporter attending Fowler's press conference also noted that 'Fowler conceded in answer to a question at the crowded press conference that the dollar could come under attack'.[584] The press did not miss an opportunity to compare US President Lyndon B. Johnson with UK Prime Minister Harold Wilson: 'Perhaps the best reason to feel edgy about the dollar is that President Johnson seems to be making the same irrevocable promises that we will "never" devalue that Prime Minister Wilson was making about the pound until the moment he took the plunge.'[585] Dramatic statements by politicians in times of monetary turmoil often spur more speculation rather than helping stem it.

Later, when the dust had settled, another alleged French attack failed to make a mark on markets according to *The Times* a week and a half after the devaluation, in an article entitled 'France May Decide to Leave Gold Pool Altogether'.[586] According to this article, France was considering removing its original contribution to the Gold Pool. But *The Times* argued that France's participation was 'negligible' (around 2.4% at this point)[587] and mainly attributed this 'new, if empty, threat' to France's 'exclusion from last Sunday's Frankfurt meeting of the other seven central banks'.[588] The meeting issued a 'statement of solidarity behind the dollar' which *The Times* thought would be enough to stop 'last week's gold rush'. [589]

By 29 November the pressure on the London gold market had eased and Gold Pool operations were back to pre-crisis levels. However, this lull in the run on gold would soon end. To understand the effect of the crisis on the London gold price, it is useful to compare it to two

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[583] 'Swiss Act to Cool Gold Speculation', Clyde H. Farnsworth, *New York Times*, 25 November 1967, 57.
[584] 'Fowler Optimistic on Surtax Revival', Hobart Rowen, *Washington Post*, 22 November 1967, A1.
[585] 'U.S. Economic "Cool" Will Be Aid to Britain: Economic Impact', Hobart Rowen, *Washington Post*, 26 November 1967, F1.
[586] 'France May Decide to Leave Gold Pool Altogether', *The Times*, 29 November 1967.
[587] France's share in the Pool was $33.3 million (9% of $370 million when France stopped contributing to additional tranches). $33.3 million represents 2.4% out of the gold syndicate, which at this stage had reached $1370 million.
[588] 'France May Decide to Leave Gold Pool Altogether', *The Times*, 29 November 1967.
[589] Ibid. This argument is also proposed by Schenk, *The Decline of Sterling*, 182.

other gold markets: Paris and Zurich. The data on gold prices in London, Paris and Zurich after the devaluation presented here have been hand-collected and are, to the best of my knowledge, presented for the first time.

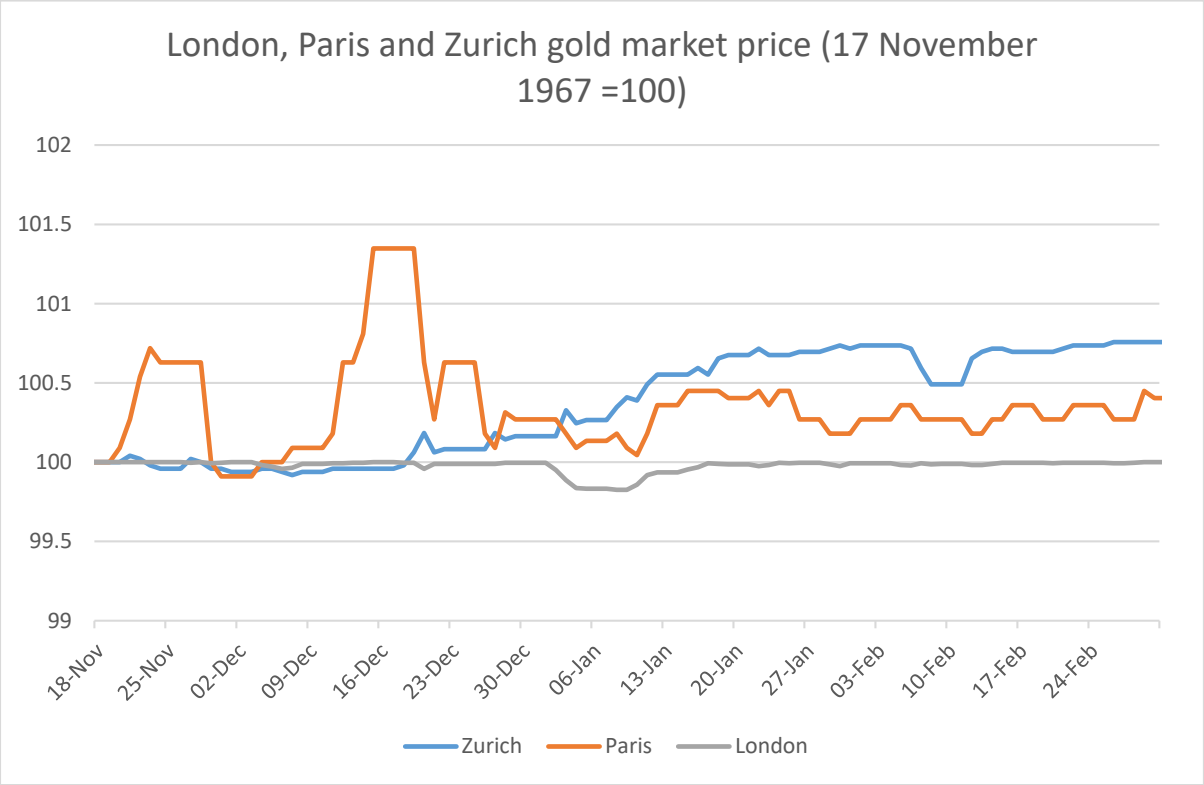

Figure 55 Gold prices in London, Paris and Zurich, indexed before the devaluation

Source: Paris: 'Cours pratiqués sur le marché libre de l'or', Paris, Archives of the Bank of France, 1377200101/21–25; Zurich: 'Goldkurse', Zurich, Archives of the Swiss National Bank, 9.6/9121; and London: Dealers' reports, London, Archive of the Bank of England, C8.

Figure 55 sets out the three series. These daily series have been collected from the archives of three central banks. The prices are indexed before the devaluation (17 November =100) to allow comparison. The London price at the end of 1967 was bounded at its upper limit (close to $35.20). It, therefore, stays relatively stable thanks to Gold Pool operations.

What emerges from Figure 55 is the progressive rise of the 'free' gold prices in Paris and Zurich. The selling pressure on the dollar in the London gold market had spilled over into

the Paris market and the Banque de France was forced to intervene. The *Guardian* reported that purchases by foreigners in Paris increased volumes and forced the Banque to intervene: 'American sources say that purchasers include United States citizens in France, who, for some days past, have been trading dollars for gold – illegally, according to their own law' and also included 'English people who have no access to their own market'.[590] The heavy foreign purchases probably explain in part the spike in gold price in Paris shown in Figure 55. France had opened the Paris market to foreigners in January 1967 in the hope of increasing the role of Paris as an international financial centre.[591] This is why France was defending the Paris gold price on the one hand while attacking the London gold price on the other, as the *New York Times* suspected: 'The Bank of France was again meeting some of the demand from its reserves. It does this not because it is against a higher price for gold, but because it is anxious to keep gold prices in Paris in line with the far more important London market, with which it competes as an international gold trading center.' [592]

Similar reports emerged about the Zurich market being under pressure after the crisis. Swiss banks acted together under the guidance of the Swiss National Bank 'to try to cool off speculation by suspending credit purchases of gold for future delivery'.[593] Switzerland, in that regard, had a more cooperative attitude to the international system.

[590] 'Paris Gold Deals Multiply in Pressure on Dollar', Nesta Robert, *Guardian*, 24 November 1967, 15.
[591] See Chapter I, section 5.
[592] 'Swiss Act to Cool Gold Speculation', Clyde H. Farnsworth, *New York Times*, 25 November 1967, 57.
[593] Ibid.

4.3. The consequences of the devaluation: Ongoing crisis and window dressing at the Bank of England

The previous section shows the consequences of the 1967 devaluation for the fall of the Gold Pool. But what were the consequences of the devaluation in Britain? The devaluation was intended to give the government breathing space to implement domestic policies and ease international pressure on sterling. I argue, consistent with previous literature, that the 1967 devaluation did not ease Britain's position internationally. Worse still, it led to more instability. Not only would the country be in constant currency troubles but there would also be some sort of 'readjustment' that would stabilise the international monetary system.

For the British government after the devaluation, it was all about saving face. Wilson had promised that the devaluation was all that was needed even if it quickly appeared that more deflationary measures would be needed.[594] This devaluation, unpopular as it was, *needed* to have some positive effects. And if the positive effects were not apparent in a recovery in reserves, the Bank of England had to be creative in its presentation of the data. On the international front, cooperation started to be questioned and there was a clear shift towards the US taking a more self-serving approach to the international monetary system. Well before the Nixon shock of 1971, the Nixon administration, inaugurated in January 1969, demonstrated that the US was no longer willing to cooperate freely in international monetary matters.

4.3.1. The aftermath of the devaluation: Increased pressure and instability

The 1967 devaluation was supposed to resolve the British balance of payments problems and move the economy towards growth and stability. However, the opposite happened. On the

[594] Johnson, 'The Sterling Crisis of 1967 and the Gold Rush of 1968', 10.

London foreign exchange market, the situation notably worsened. Spreads widened as foreign exchange dealers became increasingly nervous. Equally, volatility expanded significantly. After 18 years of stable exchange rates, which never breached the official bands, the pound was devalued by almost 14.3% overnight. In the mind of dealers, this could lead to a further devaluation.

After the devaluation, the market became more jittery and pessimistic about the monetary authorities' ability to maintain the exchange rate at the new $2.40/sterling parity. This demonstrates that the 1967 devaluation was more than a simple change in parity. Thereafter, there was heightened instability and a further decrease in sterling's role in the international monetary system. I demonstrate here how the 1967 devaluation failed to improve the stability of the pound. I do this not by looking at policy-makers, as has been done before, but at how market participants responded.[595] The foreign exchange rates have been collected by Accominotti et al. and are used here in a novel way to show how the devaluation was unsuccessful. Looking at volatility, bid–ask spreads and forward exchange rates before and after the devaluation, this subsection demonstrates the impact of the devaluation.

Figure 56 illustrates the ten-day volatility of the three-month sterling-dollar forward rate. I chose the forward rate over the spot rate as it was less influenced by Bank of England intervention, as argued in Chapter I. Therefore, it is a better reflection of market forces. It also offers the benefit of not operating within a band. Recall that when the Bank of England reopened the foreign exchange market, the forward rate was left to float freely with no fixed intervention objective. The spot rate was always kept between $2.78 and $2.82. Therefore, with the spot rate, a period of high stress on the currency when the pound was close to the $2.78 floor would display little volatility.

[595] See, for example, Cairncross and Eichengreen, *Sterling in Decline*, 193–216; Schenk, *The Decline of Sterling*, 155–204.

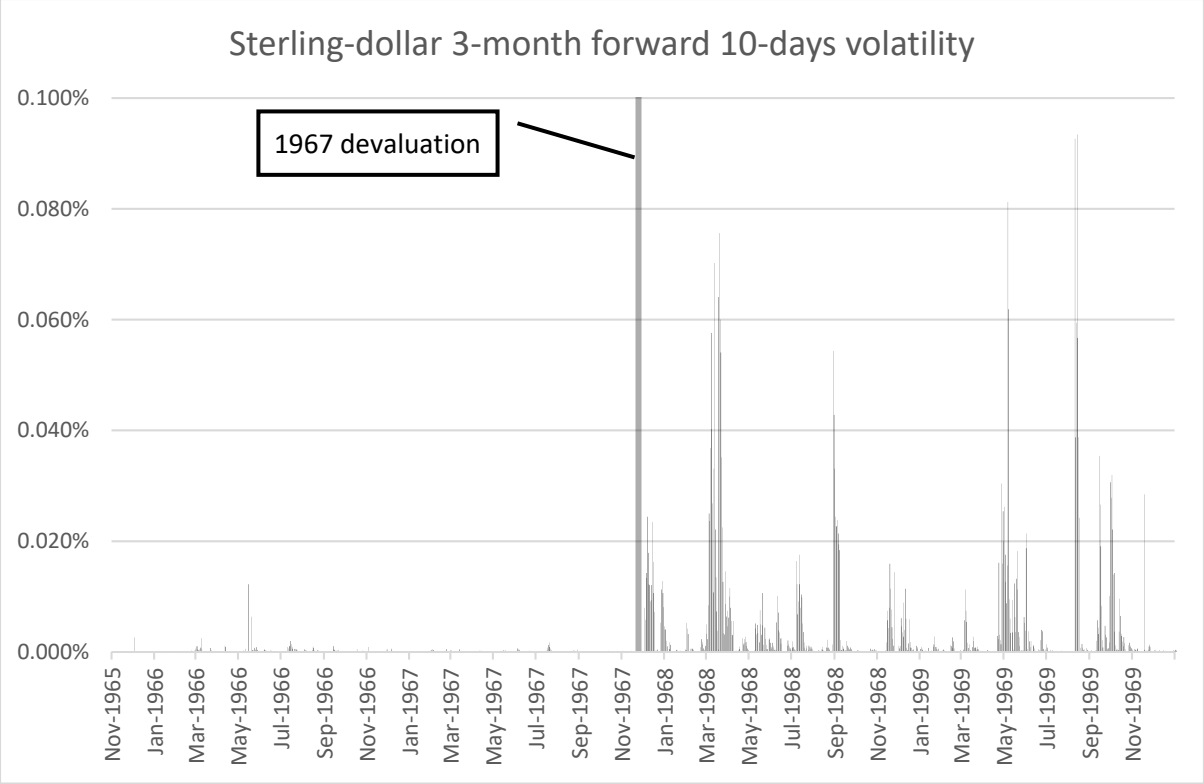

Figure 56 Dollar-sterling three-month forward ten-day volatility

Source: Volatility: author's calculation; forward data: Accominotti et al., 'Currency Regimes and the Carry Trade'.

Figure 56 demonstrates that after the devaluation volatility was much higher. The ten-day volatility increased on average by over 126-fold when comparing 1964–66 with 1967–71.[596] This is a substantial increase and shows that the devaluation had a clear effect on the nervousness of the forward market.

Figure 57 depicts the sterling three-month forward bid–ask spreads indexed to 100 for the beginning of the period in 1966. The difference between the buying and selling price (the spread) is normalised to the average for 1966 for each currency to allow for comparison.[597] The spreads inform us about the behaviour of the market-makers: commercial banks. These professionals made a profit from the difference between the buying and selling price. When

[596] The average ten-day volatility is 0.00022% for the four years preceding the devaluation and 0.028% for the four years after the devaluation, a 126 times bigger coefficient.
[597] The methodology and reasoning are similar to those in Chapter I.

market condition worsened, they had to protect their profit by increasing the spread. In that sense, spread widening was consistent with the higher volatility presented in Figure 56, which represented increased uncertainty for dealers.

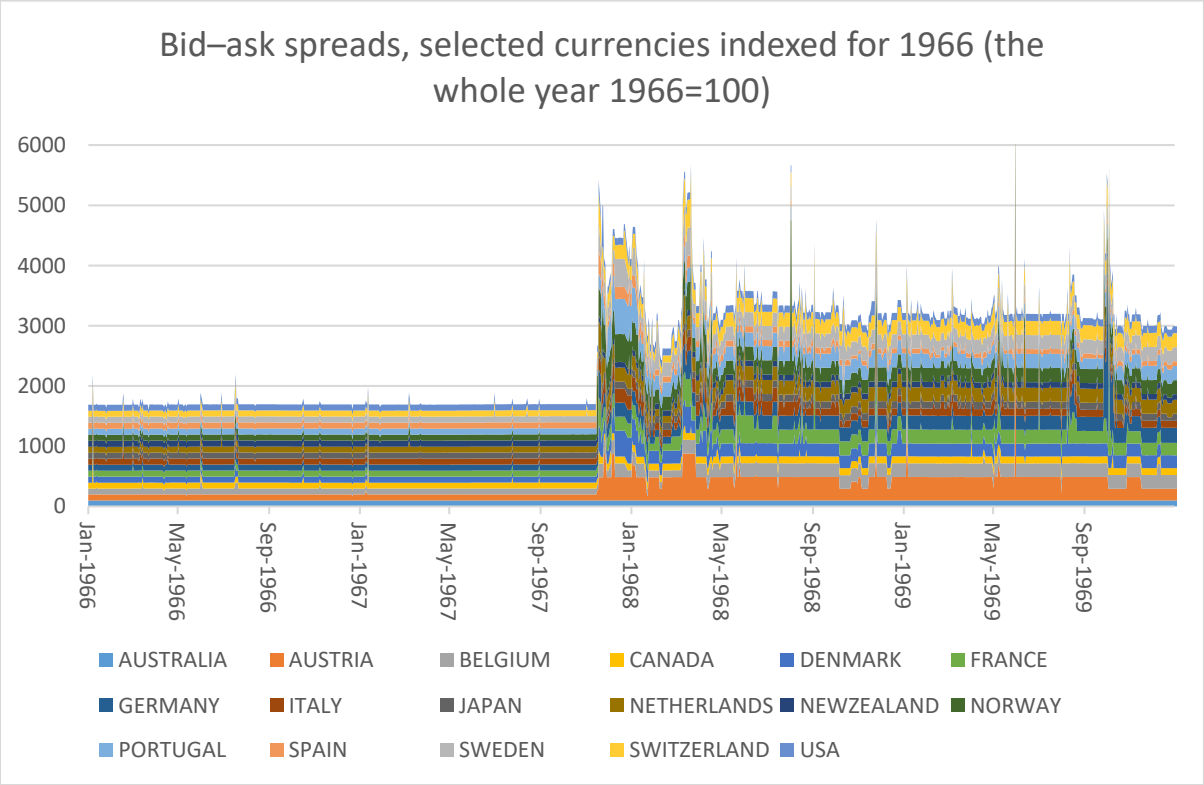

Figure 57 Sterling-dollar bid–ask spread index (whole year 1966 = 100), 1966–9

Source: Spread: author's calculation: forward data: Accominotti et al., 'Currency Regimes and the Carry Trade'.

Figure 57 and 58 show that, in general, the sterling rate became more volatile and dealers became more risk-averse. This does not, however, indicate the relative strength of sterling versus the dollar. The goal of the devaluation was to have a more stable and credible currency, yet at a lower nominal level. How did the devaluation perform in this regard?

Figure 58 represents the price of the three-month forward rate compared to the official Bretton Woods band. To allow for comparison before and after the devaluation, the scale is

adjusted so that both the lower and the upper bands match (2.78 matches with 2.38 and 2.82 with 2.42).

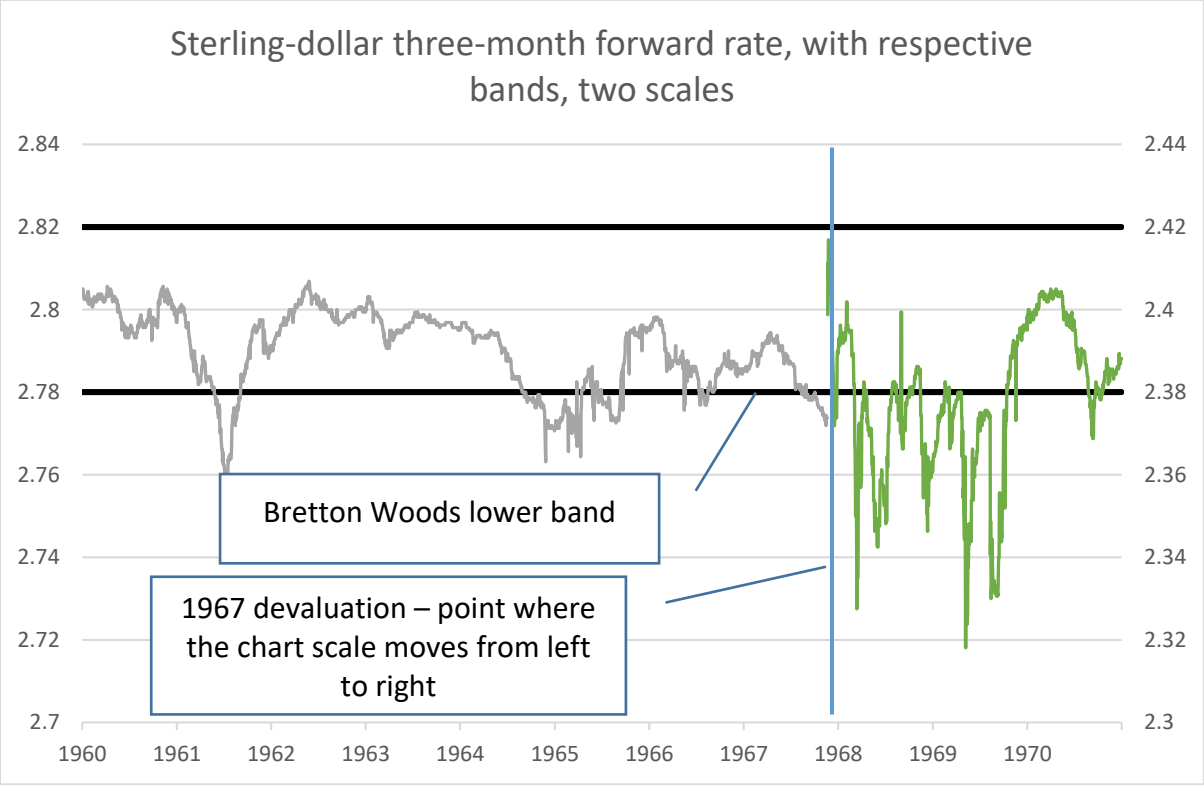

Figure 58 Sterling three-month forward rate

Source: Accominotti et al., 'Currency Regimes and the Carry Trade'.

Note: The scale switches after the 1967 devaluation to allow for continuous reading.

Following Bordo, MacDonald and Oliver, the forward rate can be used as a proxy for the credibility of exchange rate bands.[598] Bordo et al. apply this technique between 1964 and 1967, and I compare the pre- and post-devaluation period. Figure 58 shows that the 1967 devaluation was unsuccessful in restoring the credibility of sterling. After the devaluation, the forward rate was almost constantly breaking through the lower band of the Bretton Woods system (right-hand side of the figure). Before the devaluation, the breaks were less frequent

[598] Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967'.

and linked to sterling crises, such as the 1961 crisis and the crisis in the wake of the 1964 general election. After the devaluation, the forward rate showed that sterling was not credible most of the time and it falls below the lower band were much more marked.

4.3.2. Disclosure of reserves

The devaluation did not succeed in restoring confidence in the system, so how did the Bank deal with this? In a fixed exchange rate system, the exchange rate is credible only if the central bank behind a currency has the means to defend it. In other words, the Bank of England needed dollars or gold to be able to buy sterling when the exchange rate was dropping. Not only are the reserves important for sterling purchases, but the level of reserves in itself also has a signalling value for the strength of the currency. The higher the reserves, the more credible a currency appears to investors. During most of its history, the Bank managed to keep its balance sheet obscure enough to make it impossible for investors to understand its true reserve position.[599] This changed in the late 1950s.

Here I argue that the Bank of England was caught between two trends: a demand for more transparency following the publication of the 1959 Radcliffe Report (an inquiry into the Bank's activities); and increased international financial flows following convertibility in 1958. The Bank had to satisfy both sets of demands and started communicating more while manipulating the data it published. The government pushed the Bank to give an impression of stability and the institution used window dressing to do that. This subsection gives a brief historical narrative of the position of the Bank of England on the transparency of reserve disclosure using previously unused archival sources. I show how window dressing functioned

[599] This focus on opacity has been recognised by the current chief economist, Andrew Haldane, in a recent speech: 'For most of their history, opacity has been deeply ingrained in central banks' psyche. And for much the greater part of its history, the Bank of England was at the forefront of that opacity agenda.' Andrew G. Haldane, 'A Little More Conversation, A Little Less Action', 31 March 2017.

thanks to new data from the EEA account. I also demonstrate how the Bank worked with the Fed to avoid contradictory information from being shared by both institutions. New archival evidence attests to how the two central banks cooperated to conceal evidence of window dressing.

Window dressing is the manipulation of accounting data before their official publication to make them appear better than they are. It has been a widespread practice among commercial banks throughout history. For example, Roger Hinderliter and Hugh Rockoff show that *ante-bellum* banks in the US used window dressing to manage their reserves.[600] Banks under the Bank of England's jurisdiction also practised window dressing, notably moving balances among each other on set weekdays before publishing their reserves.

Reserve publication was a difficult exercise for central bankers during the Bretton Woods period. In a fixed exchange system, reserve information can create a run on the currency in a second-generation currency crisis model, as first laid out by Maurice Obstfeld.[601] In these models, self-fulfilling dynamics make a run on a stable currency rational for investors as soon as other investors start selling. Therefore, the reserves announcements were well prepared. If the central bank was credible enough, it could substantially improve the stability of its currency by exaggerating its reserve position.

An example of this is an internal memorandum from the Bank which read: 'It will be necessary shortly to decide what figure we are to show for the reserve loss for July.'[602] The wording establishes how the Bank saw reserve publication. It was a guessing game, somewhere between reality and what the Bank thought the market believed.

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[600] Roger H. Hinderliter and Hugh Rockoff, 'The Management of Reserves by Ante-Bellum Banks in Eastern Financial Centers', *Explorations in Economic History* 11, 1 (1 September 1974), 52.
[601] Obstfeld, 'Rational and Self-Fulfilling Balance-of-Payments Crises'.
[602] Top secret memorandum, Denis Rickett to Hubback with copy to Parsons and four others, 24 July 1961, London, Archives of the Bank of England, C46/6.

The amount of effort that went into drafting these communications was high. An internal memorandum reads: 'The draft Press Notice is given in two alternative forms. The first alternative is designed to avoid having the fall mentioned at the beginning of the sentence and, therefore, the first thing that meets the eye from the ticker tape.[603] The second alternative is in the conventional form.' [604] This shows how the publication of the reserve position was important to the Bank.

The Bank of England mainly communicated its reserves in press releases before publishing them in the *Quarterly Bulletin*. The *Quarterly Bulletin* was first published in December 1960 following recommendations in the Radcliffe Report. The Bank of England had anticipated these recommendations and started internal discussions about a quarterly publication as early as 1958.[605] William Allen analysed the shift in attitude and transcribed the questions to Governor Cobbold in July 1957.[606] During his testimony before the Radcliffe committee, Cobbold argued that 'it is of some doubt whether it would really clarify the issues for the public if the Bank were continually [issuing] statements with a different slant from similar statements made by Government to the public.'[607] Cobbold did not see any need for the Bank to communicate its reserves position. The Radcliffe Report, with its 2294 questions, asked the Bank to change this, as Allen noted.[608]

The Fed was ahead in terms of transparency. For example, it had published the *Federal Reserve Bulletin* since 1914, 46 years before the Bank started doing the same.[609] The Fed

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[603] Ticker tape transmitted stock price information over telegraph lines. As the text was progressively printed on a thin paper ribbon, the first words mattered as they could lead to panic selling by traders.
[604] 'The reserves announcement for May 1966', R. L. Workman to Hubback with copy to Roy Bridge, 25 May 1966, London, Archives of the Bank of England, C43/49.
[605] Richard Windram and John Footman, 'The history of the *Quarterly Bulletin*', *Quarterly Bulletin*, 2010 Q4, 258.
[606] William Allen, *Monetary Policy and Financial Repression in Britain, 1951–59* (New York: Palgrave Macmillan, 2014), 205–13.
[607] [Radcliffe] Committee on the Working of the Monetary System, Question 753, Minutes of Evidence, HMSO, 1960, quoted in ibid., 208.
[608] Ibid., 209.
[609] Ibid., 210.

viewed transparency by the Bank of England with amusement. In 1956, the Fed displayed a certain irony in stating that the Bank of England took 'a certain pride in pointing out that hardly anything can be inferred by outsiders from their balance sheet'.[610] In a memorandum by the Foreign Research Division in 1958, the Fed commented that the governor of the Bank of England 'for the first time' publicly considered more transparency. The Fed further commented, 'it seems clear that the Bank of England is being pushed – by much public criticism – into giving out more information.'[611]

From 1960 to 1996, reserve positions were announced to the press and published in the appendix of the *Quarterly Bulletin*. At first, the Bank only reported a generic reserve figure before breaking it down it into convertible currencies and gold. In an article in May 1963, *The Financial Times* welcomed this additional transparency, stressing that other countries had been reporting more detailed reserve figures for some time.[612]

In a note about the meeting of the Court of Directors in October 1964, the governor mentioned that reserve publication would be 'accompanied by a statement that central bank assistance had been arranged, but that the extent of the assistance used would not be disclosed.'[613] This would mean that the Bank was disclosing that swaps with the Federal Reserve were used to increase reserves. In the same note, the governor informed the Court that he had written to the Chancellor of the Exchequer and to the Prime Minister 'urging that the leader of the Opposition should be made acquainted with the true position in the hope that he would help to discourage irresponsible comment during the election campaign'.[614] The Prime Minister and the Chancellor also reminded the governor that disclosure was their decision and

[610] Memorandum from Kriz to Sproul, 'Criticisms of the Bank of England Research and Public information policies by W. F. Crick of the Midland Bank, 30 March 1956, FRBNY archives, box 617015.
[611] Clarke to Exter, More information from the Bank of England, 25 February 1958, FRBNY archives, box 617015.
[612] 'Raising of the Veil over U.K. Reserves is Timely', *The Financial Times*, 1 May 1963.
[613] Separate note on Court meeting, 8 October 1964, London, Archives of the Bank of England, G14/133.
[614] Ibid.

not his. In this sense, it seems that window dressing was a political decision, and not one made by the Bank of England alone. However, the Bank fully agreed with the decision to implement window dressing.

Capie argues that swaps were 'essentially window-dressing arrangements and allowed a false picture of the reserves to be presented'.[615] From their inception, these devices were meant to help cover temporary losses to avoid speculative attacks on the currency. Over time, these temporary measures were made more permanent, and swaps became central to foreign exchange management.

This raised ethical concerns on both sides of the Atlantic. Discussions with the Fed are presented in the final subsection. In November 1968, the Bank presented two options for reserves publication, one that was 'consistent with previous practice' that would withhold swaps, and one that had 'been drafted on the assumption that we now decide to come "clean"'.[616] This emphasises that the Bank believed that concealing reserves was not a 'clean' business. The Bank was recommending more disclosure in the reserve publication, arguing that once the reserve situation had normalised, they would have to 'reveal the whole truth', at which point 'it would be embarrassing if there were then two versions of the "truth"'.[617] The frequent use of quotation marks in this memorandum shows the embarrassing position the Bank was in. It did not want to communicate reserves without the government's agreement, but at the same time officials at the Bank knew that they could be blamed for window dressing in the future.

[615] Capie, *The Bank of England*, 166.
[616] E.E.A. Accounts, memorandum from C. J. Wiies to Mr Copeman, 28 November 1968, London, archives of the Bank of England, 6A83/3.
[617] Ibid.

4.3.3. How did the Bank window dress?

How did the Bank window dress the accounts from the EEA? In this subsection I present previously unpublished daily reserve data. These data show how window dressing was implemented. New archives establish how self-awareness within the Bank shifted; at first, the institution treated swaps as short-term credit instruments until it realised that it was engaging in active window dressing. The operations were in part an attempt by the government to convince the public that the devaluation had been successful.

The Bank of England was window dressing its reserves by publishing only the asset side of the balance sheet of the EEA and not disclosing any outstanding loans or swaps. Standard accounting practices require disclosing both the assets and the liabilities. Bordo et al. were the first to highlight the scale of the Bank of England's window dressing.[618]

Capie later published more data on window dressing between 1964 and 1967 from a report by Richard Kahn.[619] Capie demonstrated that the net reserve position of the Bank of England after December 1967 was negative, that is, the Bank owed more reserves to foreign central banks than it possessed. Capie's figures are reproduced in Figure 59 indicating how net reserves continued to decrease after the November 1967 devaluation. His data do not, however, include the daily reserve figures of the EEA. These data give a more precise view of the mechanism behind window dressing and its very short-term nature.

[618] Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967', 448.
[619] Capie, *The Bank of England*.

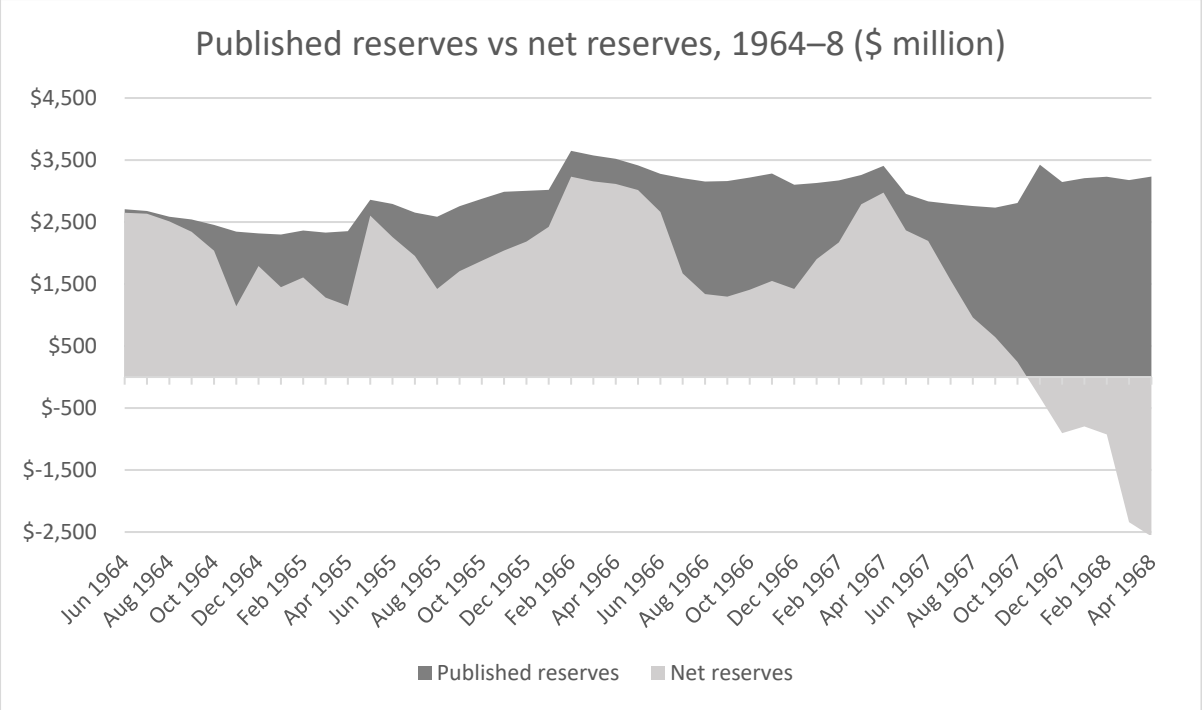

Figure 59 Bank of England published vs. net reserves

Source: Capie, *The Bank of England*, 231–2.

The Bank of England reported its net position (see Figure 59) to the Treasury in monthly letters from 1962 to 1972.[620] These letters not only gave the net oversold forward position, but also the amounts of window dressing. Interestingly, the term window dressing is avoided until 1965 and the more euphemistic term 'Net short-term aid from central banks' is used.[621] From 1965 onwards, however, the Bank of England explicitly uses the term 'window dressing', which shows that, by this point, the Bank no longer felt the need to use a euphemism when it came to terminology. In May 1968, window dressing reached its peak at $5000 million.[622] At this stage, the Bank of England was borrowing up to 5 billion to conceal the fact that it had lost reserves amounting to 11% of the country's gross domestic product.

[620] Foreign currencies forward exchanges monthly letters to the Treasury, various dates, London, Archives of the Bank of England, 6A152/1.
[621] Ibid.
[622] Ibid.

Next, I use previously unpublished daily accounts of the EEA to show how the Bank used swaps to window dress its reserve position at the end of each month. The EEA ledgers have not been used in previous literature, and contain daily data on EEA gold, dollar and other currencies holdings. As these accounts were not published or disclosed at the time this means they were not window dressed or manipulated. Rather, they were used for internal and accounting purposes. Previous research has established that the Bank did use window dressing, but here I outline its short-term nature (typically, a few days). This is important as it makes clear that swaps were not used for medium-term reserve management but for investor manipulation, to convince them that the Bank was healthier than it really was.

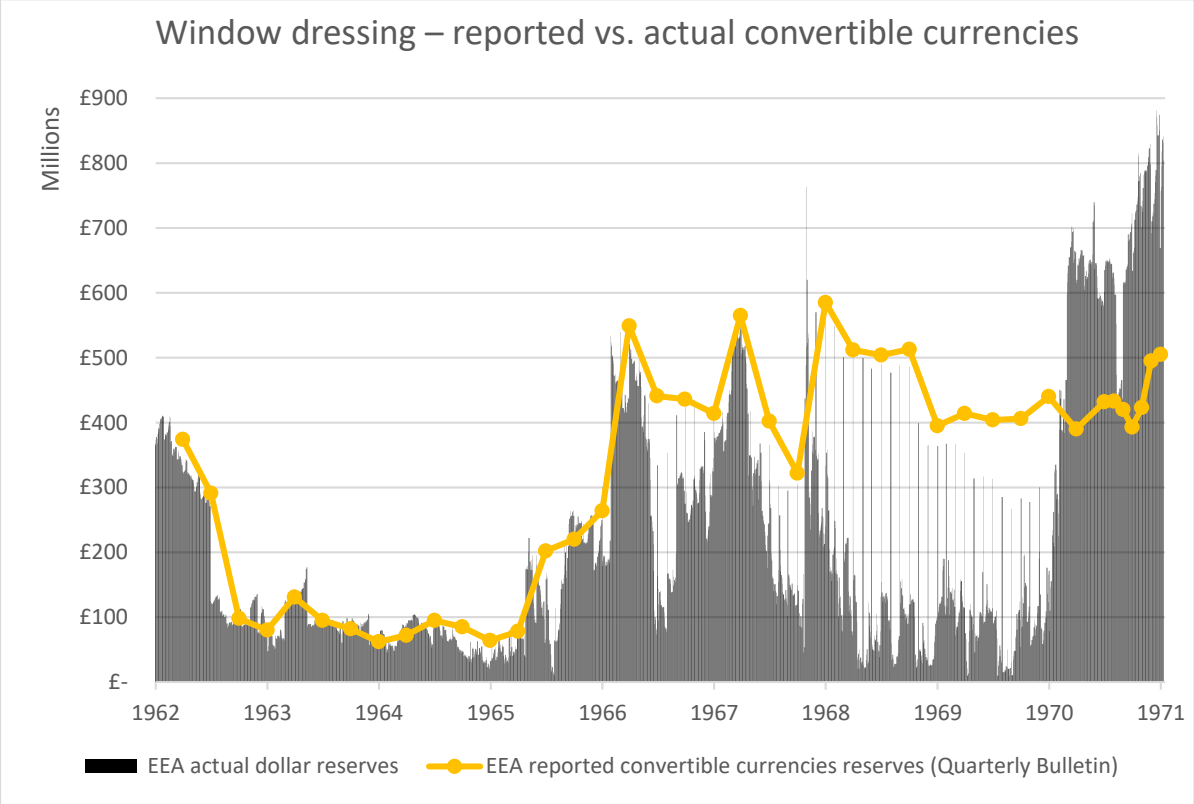

Figure 60 Published EEA convertible currency reserves vs. actual dollar reserves held at the EEA
Source: EEA ledgers and *Quarterly Bulletin.*

Figure 60 illustrates how window dressing worked. The solid line reports the convertible reserves as published in the *Quarterly Bulletin*. This is the information that was available to market participants. The stacked columns show the actual daily dollar reserves.[623] Spikes appear at monthly intervals, which indicate the short-term borrowing that was used to ensure the reserves level was high enough for the days when the reports were prepared.

The Bank borrowed dollars shortly before the actual reporting day by drawing on swap lines. Swap drawings could be as short as overnight. Table 20 illustrates how window dressing worked using data from the EEA ledgers. On Friday, 31 May 1968, the Bank borrowed over £450 million. This represented an increase in reserves of 171%. The swap operation was then reversed the next working day, and on Tuesday the reserves level was back to where it was before reporting.

Date	Reserves on the EEA account (£)	Reserve publication day	Change in reserves
Monday, 27 May 1968	29,953,509		
Tuesday, 28 May 1968	28,679,676		
Wednesday, 29 May 1968	31,362,587		
Thursday, 30 May 1968	31,426,358		
Friday, 31 May 1968	499,552,966	Reserve publication day	**+468,126,608**
Monday, 3 June 1968	499,552,966		
Tuesday, 4 June 1968	25,928,909		**-473,624,057**
Wednesday, 5 June 1968	20,733,531		
Thursday, 6 June 1968	22,340,350		
Friday, 7 June 1968	22,878,336		

Table 20 Daily entry in the EEA ledger showing how window dressing worked

[623] Note that dollars represented 98% of the convertible currencies at the time.

The details of these operations emphasise how swap networks were not long-term, but short-term instruments to manipulate published figures. Another way of hiding the extent of reserves losses was by not publishing the open forward position.[624] Intervention on the forward market, which intensified in the late 1960s, meant that the Bank of England was increasingly exposed to a large forward position. However, this exposure was not published.

4.3.4. Cooperation between the Federal Reserve and the Bank of England

Window dressing was an internal practice. However, being the main supplier of funds through swaps, the Fed was also informed of the use of its funds. More than that, the Fed actively took part in concealing information from the public. This quickly turned into a debate in the Federal Reserve system between Coombs, who was inclined to do anything to save the pound in the short run, and some members of the FOMC, who raised ethical concerns. In this section, I provide direct evidence of collaboration between the Bank and the Fed on window dressing and suggest that window dressing worked because of the close cooperation between the two central banks.

The Fed and the Bank discussed reserve figures before they were published by the Bank. Before publishing its *Quarterly Bulletin*, the Bank of England consulted the Fed on the precise wording of the reserve publication. This was important because the Fed would also communicate periodically on the swap position with the Bank of England, and the public statements by the two institutions needed to mesh. Bridge called the Fed in October 1966 to discuss strategy with David Bodner. Bodner reported Bridge's reasoning: 'In order to come out in approximately the same position as in the end of September, that is, a slight reserve increase

[624] Bordo, MacDonald and Oliver, 'Sterling in Crisis, 1964–1967', 448.

and no net recourse to central bank assistance, Bridge said he would require approximately $500 million.'[625] At this point Bridge wanted to publish reserves that increased slightly. The goal of either a stable or slightly increasing reserve position is constant and can be seen in Figure 60, despite the true reserves being in decline. The quote also illustrates how the Bank and the Fed were working closely on deciding a figure for publication.

Collaboration between the Fed and the Bank went much further. Before publishing the minutes of the FOMC, the Fed sent the excerpts of the minutes to the Bank of England so they could delete anything mentioning window dressing. In December 1971, before publishing the minutes of the FOMC for 1966, Coombs wrote:

> You will recall that when you visited us in December 1969, we invited you to look over selected excerpts from the 1966 FOMC minutes involving certain delicate points that we thought you might wish to have deleted from the published version. We have subsequently deleted all of the passages which you found troublesome. Recently, we have made a final review of the minutes and have turned up one other passage that I am not certain you had an opportunity to go over. I am enclosing a copy of the excerpt, with possible deletions bracketed in red ink.[626]

Coombs suggested deleting passages in which some FOMC members criticised window dressing; Mitchell of the FOMC suggested that the Bank of England would get better results 'if they reported their reserve position accurately than if they attempted to conceal their true reserve position'.[627] However, MacLaury, another FOMC member, stressed that there was a risk of 'setting off a cycle of speculation against sterling' if the Bank published a loss of $200 million, which was 'large for a single month', in comparison with what was published the previous month.[628] Tension arose between the FOMC, which did not want to support unethical practices, and the New York Fed, which was dealing on the front line of international markets.

[625] U.K. position at the end of October, Bodner to Hayes, 25 October 1966, New York, Archives of the Federal Reserve Bank, 617031.
[626] Letter from Coombs to Hallet, 1 December 1971, New York, Archive of the Federal Reserve, box 107320.
[627] Ibid., p. 10.
[628] Ibid., p. 9.

Coombs, who held positions at both institutions, was the link that attempted to convey to the FOMC the reasoning behind this short-term assistance.

The Bank of England understood the FOMC's reticence, noting that overnight swaps could not be used for window dressing as 'the F.O.M.C. regard that as unethical if not immoral'.[629] Taking the logical consequence of this stance, the note continues: 'this means that any drawing under the swap ought to be left outstanding at least for 32 days.'[630] The only technical difference is that the Bank of England had to pay interest for the period, which would more than for an overnight swap where the cost would be negligible. But the fact remained that the Bank used this short-term loan to avoid disclosing the real level of its reserves.

4.4. Britain, Nixon and the end of Bretton Woods

In August 1971, Richard Nixon decided to 'to suspend temporarily the convertibility of the dollar into gold or other reserve assets'.[631] This meant that the international monetary system, which had intermittently relied on gold since 1821, would cut all ties with it. Two main factors were at play in the final years of the Bretton Woods system: increasing US inflation, which undermined the credibility of the dollar; and, to a lesser extent, a decrease in international monetary cooperation. The shift to the Nixon administration, according to Coombs, meant that international financial policy 'became increasingly dominated by political considerations, much like French policy under de Gaulle'.[632] Until that point many international monetary decisions were made after discussions in Basle. The election of Nixon in 1968 returned power to Washington.

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[629] Reserves report, end of April, unsigned memorandum on reserve publication, 26 April 1966, London, Archive of the Bank of England, C43/49.
[630] Ibid.
[631] Richard Nixon, *Richard Nixon: Speeches, Writings, Documents*, ed. Rick Perlstein (Princeton, NJ: Princeton University Press, 2008), 219.
[632] Coombs, *The Arena*.

In this section I argue that this marked the end of the pound's influence within the international monetary system. Until then, despite its diminished importance, the pound still played a surprisingly significant role. The progressive dissolution of the Bretton Woods system with its two key reserve currencies (the dollar and sterling) meant the end of the pound's international role. The system would now be based on the dollar alone. The end of the fixed exchange rate system and market liberalisations during the 1970s and 1980s would remove the pound's significance as an international force. Further, the stability of the international monetary system would no longer rely on decisions made in Westminster. This section presents new daily data on reserves, intervention and exchange rates to show how sterling improved in 1970–1. It also relies on secondary sources to close the argument.

Cooperation suffered from the run on gold that followed the 1967 devaluation. Unlike the interwar years, sterling devaluation did not lead to competitive devaluations. However, just as the 1931 devaluation marked the beginning of the end for the gold standard, 1967 marked the beginning of the end for the Bretton Woods system and international monetary cooperation. The *New York Times* was right when it announced one week after the devaluation that 'The gold rush that has developed since sterling's devaluation represents a dangerous new challenge to the dollar and the existing monetary system that is based on cooperation between the United States and other industrial powers.'[633] The devaluation had unleashed the temptation for more nationalistic behaviour. Eventually, these forces would lead to the end of the Bretton Woods monetary system, which had always been based on cooperation.

An interwar-like beggar-thy-neighbour devaluation spree was only narrowly avoided. Just a few days before Britain devalued, France refused to commit *not* to devalue in response to sterling. The *New York Times* revealed that 'France took this ambiguous stand at the fateful

[633] 'The Defense of the Dollar', *New York Times*, 26 November 1967, E12.

moment 10 days ago [15 November] when experts of the Group of Ten discussed the possibility of the British pound' being devalued.[634] A sterling devaluation followed by a French devaluation could have likely triggered devaluations around the world, creating a similar currency war as in the interwar years.

4.4.1. A change in administration – The Nixon shift

Nixon's election altered the landscape of international monetary cooperation. European monetary relations with the US now became political, and technical cooperation was replaced by political blame. Central bankers and institutions set up in Basle continued to function; however, Nixon shifted control over US monetary policy from the New York Fed to Washington and the Treasury. Cooperation shifted from secret loans to public speeches blaming Europe. Coombs noted the change: 'As the Nixon administration took office in January 1969, the Federal Reserve Bank of New York was abruptly cut off from Washington discussions of foreign financial policy.'[635] This was contentious, as decisions on cooperation were mainly made at the central bank level, with limited government involvement. The Fed's discretionary power in Basle was drastically reduced.

The incoming Nixon administration had a negative impact on international monetary cooperation. Using previously unused archival materials from the New York Fed, I document in detail how the new administration contributed to the breakdown in cooperation. If the Bank of England took roughly from 1945 to 1964 to warm up to the idea of cooperation with the Fed, 1969 marked a breakdown in cooperation, this time coming from the US side. Therefore, full and open cooperation between the Fed and the Bank of England lasted from 1964, when the

[634] 'France Refused Pledge on Franc: Sources Confirm Her Stand on Eve of the Pound Cut. Paris Didn't Pledge Firm Franc on Eve of London's Devaluation', *New York Times*, 25 November 1967, 57.
[635] Coombs, *The Arena*, 204.

Bank was finally ready to cooperate, to 1969, when the Fed was slowly cut out of international monetary questions in favour of the Treasury under Nixon's tight control. I revisit and fine tune the generally accepted narrative of the Bretton Woods period as a time of cooperation.[636]

The New York Fed recognised this shift in its 1971 annual report, writing that, owing to Nixon's closing the gold window (known as the Nixon shock), 'the operation of the International Monetary Fund (IMF) was almost completely immobilized, and the entire fabric of international monetary cooperation was badly strained'.[637] From that point on, routine operations were complicated. The new currency regime led to mistrust on both sides of the Atlantic and the tone of the dialogue between central banks changed.

A first example of this can be found in 1969. The Fed had just heard that the Bank of England had repaid $75 million to Germany 'at the insistence of the Germans'.[638] This was a problem for the Federal Reserve, which wanted to be the most senior creditor and be repaid first. In reaction, Fed president Hayes called Bundesbank president Blessing to 'urge that the Germans allow the Federal Reserve priority in British debt repayments'.[639] In 1970 something similar occurred. The US Treasury and the Fed again were worried about being repaid after other central banks had been. When asked to repay the Fed first, Hallet of the Bank of England replied that 'evidently there had been some misunderstanding between him and Coombs' on the schedule.[640] This meant that the 'the Bank of England would not be able, without great embarrassment, to change the scheduled repayments'.[641] In response, Crowley of the Fed noted that, after consulting the Treasury about extending the Bank's swap line with the Fed, he was told to 'hold up renewal of the facility, pending a determination as to priorities and schedules

[636] Toniolo and Clement, *Central Bank Cooperation*.
[637] Federal Reserve Bank of New York, annual report 1971, 3 March 1972, 32–3.
[638] British repayment of debt to Germany, David E. Bodner to files, 23 October 1969, New York, Archives of the Federal Reserve, box 107320.
[639] Ibid.
[640] Telephone conversation with Messrs. Robeson and Hallett of the Bank of England, Robert J. Crowley to files, 18 March 1970, New York, Archives of the Federal Reserve, box 107320, p.1.
[641] Ibid.

for repayment of debt'.[642] The Treasury was adding conditionality to swap lending. In Chapter II, I described swaps as being approved informally by telephone for the most part and available to the Bank within 24 hours or less. This changed with the new administration.

Another example comes from 1971 when the Bank needed to extend another credit agreement. Governor O'Brien called the Fed to express his concerns: 'he had heard some comment from this country [the US] to the effect that we hope to reduce American commitment and persuade the French to join in the credit.'[643] This was not only annoying but also quite humiliating for the Bank of England. O'Brien stressed that 'the French could be troublesome' and that 'he would consider it most unfortunate if the discussion of the [credit] renewal were to become anything more than a rather routine exercise'.[644] The Bank's views were communicated to Paul Volcker, Under Secretary for International Monetary Affairs at the Treasury. This episode, though benign in nature, demonstrates the new atmosphere. Previously, such matters were routine and could be resolved quickly and informally. Now, however, even if the Fed had 'general sympathy with the views expressed' by O'Brien, they could do more than forward the information to Washington as the centre of power had shifted from New York and the Fed to Washington and the Treasury.[645]

These two examples highlight growing tension between the Bank and the Fed as well as the involvement of other European countries. Whereas before the Nixon administration came to power the Fed and the Bank always presented a relatively united front when negotiating with other European nations, now Washington started to play European nations against the UK.

[642] Ibid., 2.
[643] Conversation with Governor O'Brien, memorandum sent to Alfred Hayes, 4 March 1971, New York, Archives of the Federal Reserve, box 107320.
[644] Ibid.
[645] Ibid.

4.4.2. The Nixon Shock

In this subsection I argue that the Nixon shock was the result of Nixon wanting to make a mark; he was unconcerned about the impact of US policies on the international monetary system. Here I demonstrate the effect of the Nixon shock on the foreign exchange by presenting new bid–ask data. These data show how the shock took dealers by surprise and upset the established equilibrium.

The decision to close the gold window was made at Camp David (US presidents' country home in Maryland) over the weekend of 13–15 August. Nixon told the participants that there should be 'no telephone calls out of Camp David'.[646] Volcker had warned the president that 'it was too risky to wait before removing the threat of a run on America's remaining gold reserves, that a tidal wave of gold redemptions could come as early as Monday'.[647]

Indeed, the week before Nixon announced the closing of the gold window, the Bank of England managed to buy more dollars than usual, accumulating $598.5 million on the market, a significant amount.[648] This shows that before Nixon's declaration, the London market was under stress with heavy dollar selling. The Bank was on the other side of these sales, replenishing its dollar reserves. Nixon later wrote:

> The strongest opposition came from Arthur Burns, Chairman of the Federal Reserve Board. He wanted us to wait. Even if all the arguments were right, he said, he still felt that there was no rush. He warned that I would take the blame if the dollar were [sic] devalued. "*Pravda* would write that this was a sign of the collapse of capitalism," he said. On the economic side he worried that the negative results would be unpredictable: the stock market could go down; the risk to world trade would be greater if the trade basis changed; and there might be retaliation by other countries.[649]

[646] Conrad Black, *Richard M. Nixon: A Life in Full* (New York: Public Affairs, 2007), 741.
[647] Ibid.
[648] Dealers' reports, 1971, London, Archive of the Bank of England, C8.
[649] Richard Nixon, *RN: The Memoirs of Richard Nixon* (New York: Simon & Schuster, 2013).

However, Burns' opposition did little to stop Nixon. Connally said the 'country was completely exposed to the world, and when Burns referred to the "goodwill" of allies, Connally interrupted: "We'll go broke getting their goodwill."' [650] In the end, the debate ended with a clear decision in favour of closing the gold window.

On Sunday night, Nixon addressed the nation and announced a series of measures to stimulate the economy. Along with the closing of the gold window, he introduced a temporary 10% surcharge on all dutiable imports in the belief that other countries would feel compelled to revalue their currencies, as Irwin argued.[651] Finally, to curb inflation he announced 90 days of price and wages controls. However, the Nixon shock was the most important part of the announcement and had the most durable effects. As Thomas Zeiler puts it: 'between 1929 and 2008 there occurred another crisis that signalled a profound shift in the country and the world, and in the psyches of ordinary people. It began on August 15, 1971. On that date, Richard Nixon took the first steps toward ending the gold standard.'[652]

Ironically, Nixon used the frequency of financial crises as an argument to close the gold window: 'In the past 7 years, there has been an average of one international monetary crisis every year. Now, who gains from these crises? Not the working man; not the investor; not the real producers of wealth. The gainers are the international money speculators. Because they thrive on crises, they help to create them.'[653] With hindsight, this is interesting as the literature shows that the Bretton Woods period was a time with the fewest financial crises of any type.[654] Certainly, closing the gold window did not help reduce the number of crises.

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[650] Black, *Richard M. Nixon*, 741.
[651] Douglas A. Irwin, 'The Nixon Shock after Forty Years: The Import Surcharge Revisited', *World Trade Review* 12, 1 (January 2013, 29.
[652] Thomas W. Zeiler, 'Requiem for the Common Man: Class, the Nixon Economic Shock, and the Perils of Globalization', *Diplomatic History* 37, 1 (1 January 2013), 2.
[653] Nixon, *Richard Nixon*, 217.
[654] Michael Bordo et al., 'Is the Crisis Problem Growing More Severe?', *Economic Policy* 16, 32 (April 2001): 51.

Kissinger later admitted that Nixon knew that his decision would be long lasting and could guarantee his legacy:

> he saw himself as revolutionizing international economics as he had already transformed international diplomacy. He reveled in the publicity coup he had achieved. As he often did he asked me innumerable times to recite foreign reactions, which were mixed at best; he was delighted by the domestic approval.[655]

According to Nixon, closing the gold window 'turned out to be the best thing that came out of the whole economic program'.[656] The way Kissinger describes it is telling:

> This was to have many, largely unforeseen, consequences as the years went on. The immediate significance of the new program was its effect abroad; it was seen by many as a declaration of economic war on the other industrial democracies, and a retreat by the United States from its previous commitment to an open international economic system.[657]

Nixon's focus was domestic and he cared little for the rest of the world. According to Ronald McKinnon, the 'dollar devaluation violated the unwritten rule (understandings) by which the fixed-rate dollar standard had successfully operated for the previous twenty years.'[658]

How much of a surprise was the decision to close the gold window, and how much had markets already factored in this 'shock' in prices? The London market gives a clear indication of the magnitude of the shock. Here again I rely on the bid–ask spreads. They are presented as an index (average for 1971–2 = 100). This allows a comparison of the magnitude of the shock on each currency individually in a single chart.

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[655] Henry Kissinger, *White House Years*, reprint edition (New York: Simon & Schuster, 2011), 1126.
[656] Nixon, *RN*.
[657] Kissinger, *White House Years*, 1126.
[658] McKinnon, 'Bretton Woods, the Marshall Plan, and the Postwar Dollar Standard', 604.

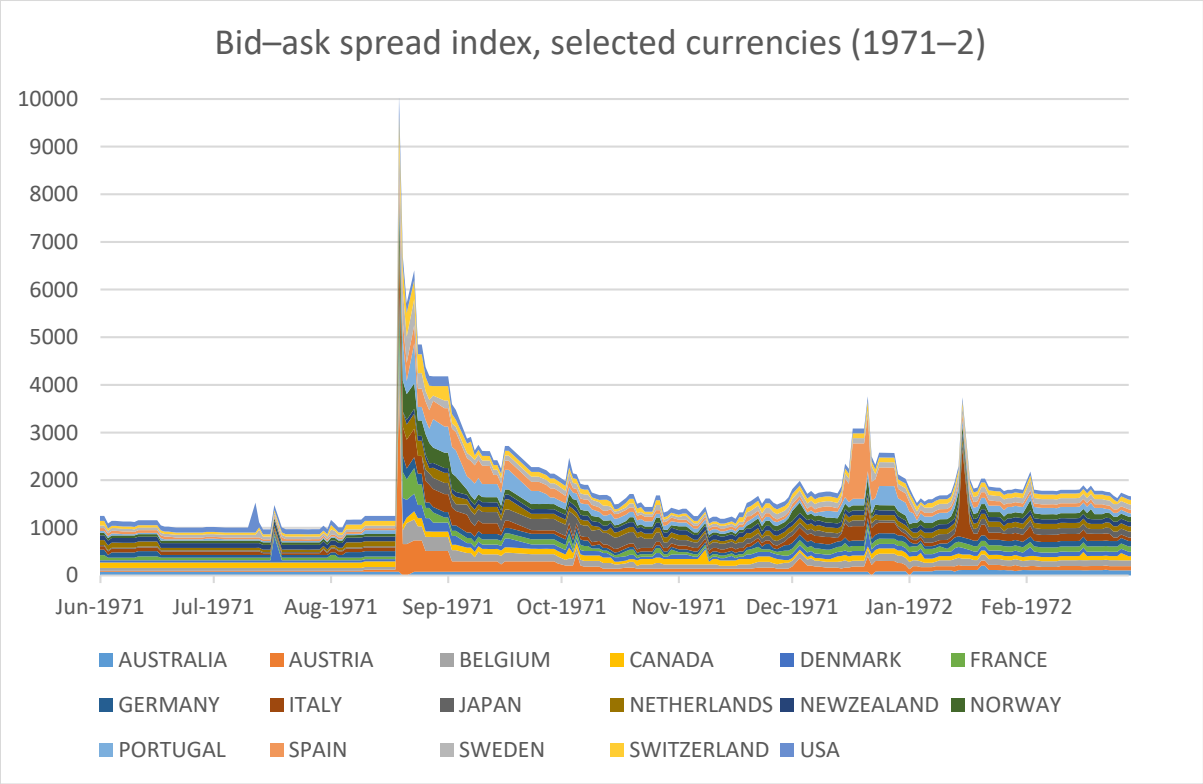

Figure 61 Bid–ask spread index for 18 countries

Note: The data are indexed to avoid any single currency spread biasing the graph and showing the shock in a comparable way for all currency pairs. All spreads are indexed on the average of the whole of 1971–2 = 100.

Source: Bid–ask data: Accominotti et al., 'Currency Regimes and the Carry Trade'; computation: the author.

News of the gold window's closure came as a shock to market-makers in London. The spreads on foreign exchange quotes increased ten-fold after the announcement, as Figure 61 illustrates. Even for the whole of September, dealers were still offering five times higher spreads on average across the 17 currencies presented in Figure 61. Dealers were most probably protecting themselves against uncertainty in the market following the initial shock.

4.4.3. Sterling stabilisation at last

The end of Bretton Woods was a time of crisis and reinvention for the international monetary system. For sterling, things finally seemed to improve, for a while at least. I present new data showing that 1969–71 was a period of respite for sterling with less pressure on the foreign

exchange market. Reserves seemed to be increasing somewhat; dealers were less busy defending the pound and the currency exhibited less volatility. The Nixon shock, however, brought an end to this quieter period. Even if sterling benefited from the Nixon shock, the positive effects of the shock on the dollar would be only temporary and the 1970s would again be a difficult time for sterling.

After being close to the lower band for most of the Bretton Woods period, the pound finally appreciated against the dollar from late 1970 onwards. As Figure 62 illustrates, the three-month forward rate improved against the dollar following the Nixon shock. The sterling forward rate even broke the Bretton Woods upper band of $2.42 per sterling after July 1971.

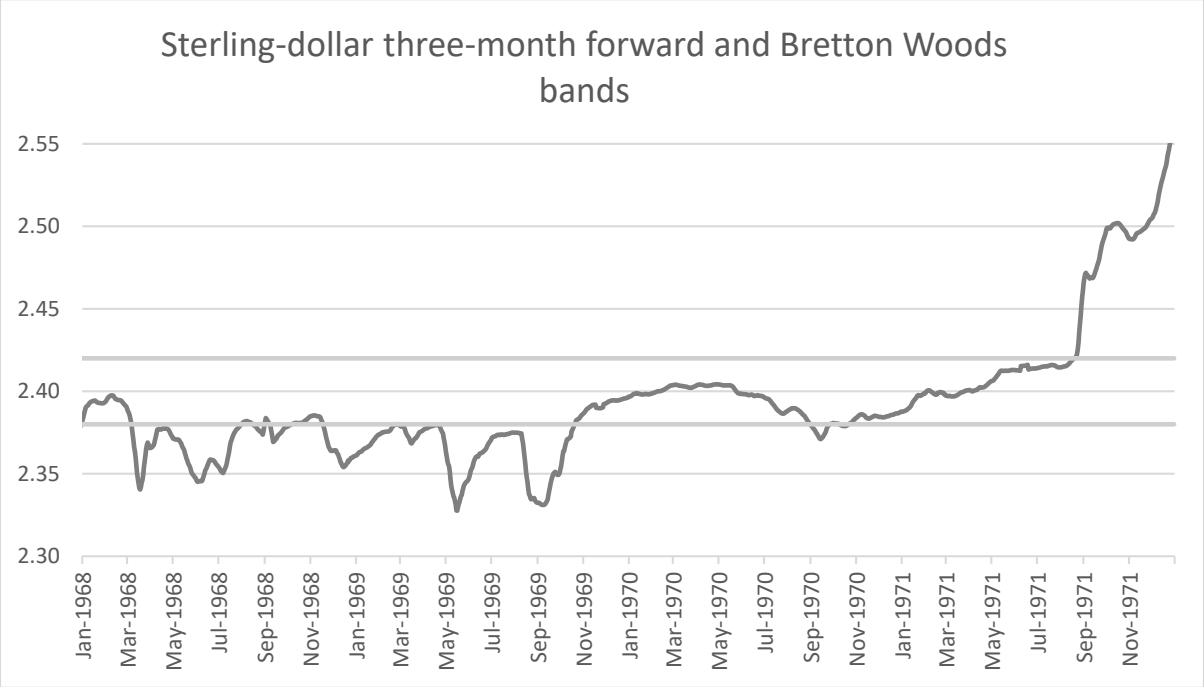

Figure 62 Three-month sterling-dollar forward exchange rate

Source: Accominotti et al., 'Currency Regimes and the Carry Trade'.

Similar trends can be seen in ten-day volatility. Figure 63 highlights that the three-month forward market, the most volatile official sterling market, was stable from the end of 1969 to the summer of 1971. After the Nixon shock, the market again became volatile.

In terms of intervention, dealers were less busy defending the pound and only reported nine dollar sales in 1971, 3% of the trading days (in 1967 they spent just short of 30% of the trading days defending sterling). In 1970, their job was even easier as market conditions allowed them to buy dollars and not worry about sterling on 91% of trading days.

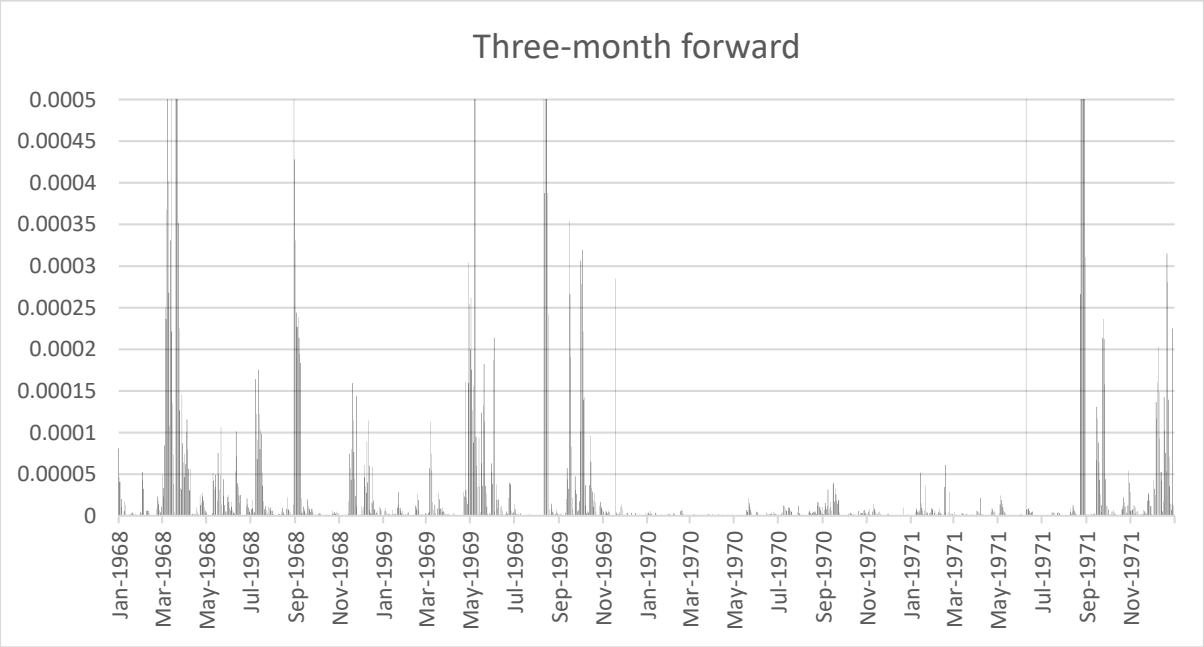

Figure 63 Three-month sterling-dollar forward exchange rate, ten-day local volatility
Source: Accominotti et al., 'Currency Regimes and the Carry Trade'.

The reserve position improved somewhat in 1970 as the figures from the EEA show in Figure 64. But the UK's reserve position was still not good and gold reserves were diminishing starting in 1970. Dollars on the EEA account mainly came from foreign credits and the gold reserves were low. On average during the Bretton Woods period, EEA gold reserves stood at

£458 million.[659] At around £200 million during 1969–70, they were substantially below this average and the situation was far from ideal.

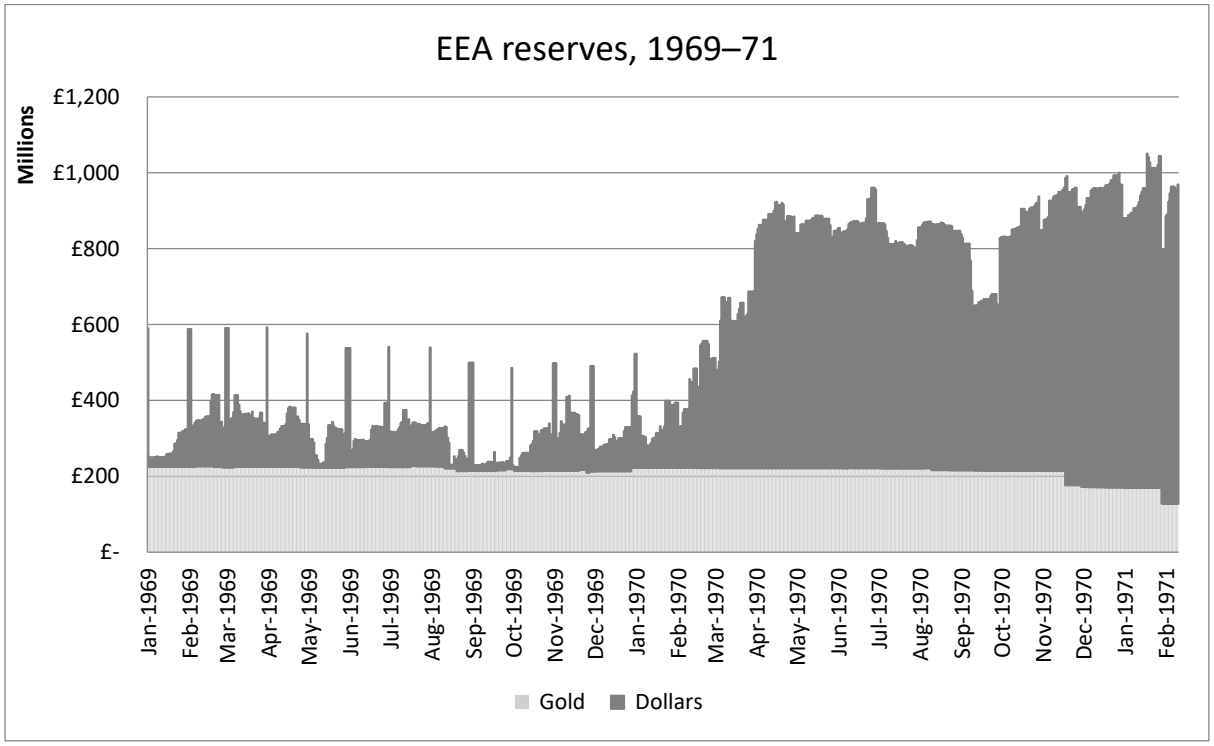

Figure 64 EEA dollar and gold reserves

Source: EEA ledgers.

Another clear trend is that the Bank no longer used swaps to hide reserve losses after 1969. The periodic spikes that appeared in 1968 ceased in 1970. There are still increases around the month-end at some points, but they are not as marked and last longer than at the height of window dressing.

This calmer period would not last. New crises would arise, requiring more loans from the international community. And the international monetary system would go through several new frameworks, such as the Smithsonian agreement of December 1971, followed by the snake in the tunnel in April 1972 before Britain officially floated its currency on 23 June 1972. But

[659] This is calculated from 31 March 1947 to 10 February 1971 based on all the available daily data.

this is beyond the scope of this dissertation, which stops at the *de facto* end of the international Bretton Woods system with the Nixon shock. As Kissinger put it, 'The Bretton Woods agreement, which had regulated international monetary arrangements since 1944, was being made irrelevant' by Nixon's speech.[660] This marked the end of over a century and a half of gold-based systems and the beginning of a new era in the international monetary system.

[660] Kissinger, *White House Years*, 1126.

Chapter III conclusion

This chapter has reviewed the role Britain played in the fall of the Bretton Woods system. If during the early 1960s the system was threatened by international political events linked to the Cold War, the second half of the 1960s saw sterling taking centre stage. It is not that sterling was the fundamental force leading to the fall of the system, but I present evidence for a re-evaluation of its importance contrary to earlier literature which minimised sterling's significance. From September 1964 sterling was the main preoccupation of all those worried about the stability of the international monetary system. That said, the primary weakness of the Bretton Woods system was the increasing issue of dollars against a limited supply of gold due to US inflationary and isolationist policies.

The sterling devaluation of 1967 triggered a run on gold, as markets started to fear for the dollar once sterling, the first line of defence, had fallen. This started a period of international instability and less cooperation. Even if the sterling devaluation did not lead to a currency war, as in 1931, it did reduce international cooperation. Finally the election of Nixon in 1969 destroyed what remained of international cooperation.

Another major contribution of this chapter is to demonstrate that France, contrary to popular opinion in the literature, had a rather small role in the unfolding of the international crisis. France always opposed US policies and urged the adoption of a system closer to the orthodoxy of the gold standard. However, my analysis concludes that France played only a minor role. If they converted dollars to gold at the gold window until 1966, when the run on gold started in 1967, France was already too weak and too poor in dollars to make an impact. The country then chose psychological warfare, leaking information on its uncooperative behaviour. However, these leaks, while increasing the pressure on gold somewhat, cannot be credited for the fall of the system.

Conclusion

This dissertation reassesses the role of sterling in the Bretton Woods system. Whereas previous literature mainly focuses on the dollar, I show that sterling, the secondary reserve currency, played a major role in the instability of the international monetary system. New evidence highlights how sterling crises put pressure on the international monetary system. As soon as capital controls were lifted in 1958, pressure on sterling started mounting. And from 1964, there was contagion between the two leading reserve currencies, a fact which was recognised by contemporary policy-makers. The Federal Reserve of New York was keen to avoid a sterling devaluation. To maintain sterling's – and by extension the dollar's – stability, the US offered generous swap lines and loans to the UK in the 1960s. After 1964, market participants saw this support as a sign of the interdependence of the two currencies. By joining the Gold Pool, the US started to defend the London gold price with US taxpayers' money. Sterling instability affected the London gold price, whereby the gold market constituted another channel through which sterling threatened the stability of the dollar and hence the Bretton Woods system.

These findings are important as they shed light on the transition from one hegemonic international reserve currency to another. This has only occurred once in recorded history.[661] In recent years, the creation of the Euro and the rise of the Renminbi have led some observers to believe it could happen again.[662] Understanding the dynamic between reserve currencies therefore matters. This dissertation concludes that such a transition can take time and present risks for the new hegemon. This is of interest to central bankers and governments monitoring the future of international reserve currencies.

[661] Before sterling, other monetary instruments had an international status, such as the guilder, the ducat and the bezant, but they were not fiat currencies and they were not held by central banks as reserves. Sterling was the first fiat currency to have an international reserve currency status and the dollar the second.

[662] The argument for multiple reserve currencies has been made by Eichengreen in several papers and books. Frankel has previously speculated that the Euro could overtake the dollar in 2018. See Eichengreen, Mehl and Chitu, *How Global Currencies Work*; Jeffrey Frankel, 'The Euro Could Surpass the Dollar within Ten Years', *VoxEU.Org*, 18 March 2008; Menzie Chinn and Jeffrey Frankel, 'Why the Euro Will Rival the Dollar', *International Finance* 11, no. 1 (1 May 2008): 49–73.

A further contribution of this dissertation is to provide new evidence of central bank cooperation during the Bretton Woods period. The evidence I present does not relate to the signature of grand agreements or large rescue packages but centres on the 'microhistory' of day-to-day cooperation between the Fed and the Bank. This was made possible by exploiting daily records of telephone conversations, letters and memos kept at the New York Federal Reserve. A novel understanding of the methods of cooperation between the two central banks emerges from these extremely detailed records. Before this thesis, scholars often assumed that cooperation was a smooth process, deeply intertwined in the very fabric of the Bretton Woods system. This benign image of cooperation between different central banks certainly holds true when comparing the Bretton Woods system with the interwar years. However, in practice, technical cooperation between the Fed and the Bank was slow to take off. The Bank of England was hesitant to share its secrets of the central banking trade. It was also reluctant to share information about its relationship with its other private and public customers, including South Africa, the world's largest gold producer.

British reluctance to cooperate can be explained by the fact that the Bank only had become a public institution in 1946. The Fed, on the other hand, was closer to a public institution and understood early on the importance of economic reasoning and research. This discrepancy is apparent when analysing communication records between the two Banks. The Fed was engaged in the debate on international currencies and the future of the international monetary system. At the Bank, this seemed like a minor question.

Another key finding is that France played a much smaller role in the fall of Bretton Woods than previously thought. The belief that France was instrumental in the demise of the international monetary system is ingrained in both popular consciousness and modern economic history. This misconception is due to the activism of French policy-makers who constantly tried to magnify their own importance with grand actions such as the February 1965

de Gaulle speech. Relying on data still withheld by the New York Fed, but accessed through the BIS, as well as econometric analysis, this dissertation demonstrates that it was the sterling devaluation of 1967, and not French actions, that were to blame for the fall of the Gold Pool. This finding confirms arguments from previous literature that has shown the limited impact of French actions during that period.[663]

My dissertation has inevitably left several questions unanswered and these provide fruitful avenues for future research. For example, I have presented evidence of France not operating at the US gold window in 1967 when the run on gold started. It is extremely unlikely that the Bank of France operated directly on the London gold market through any of the five gold dealers running it (the Bank of England soon would have heard of it and exposed France to other Gold Pool members). I have not completely ruled out that France hoarded gold through proxy dealers in London, Zurich or elsewhere. Nevertheless, my econometric evidence points against it; I have found no evidence of this behaviour in the archives of the Bank of France; and such operations would have left written evidence or been mentioned in the unpublished and confidential board meeting notes. But I cannot categorically exclude France operating in London or Zurich through proxies even if I think this is highly unlikely.

Similarly, despite occasional anecdotal evidence from the Bank of England and the BIS archives, it is unclear exactly who the gold speculators were. I have tried to gain access to the archives of the five dealers in the London gold market (Samuel Montagu & Co., Rothschild, Sharp Pixley & Co., Mocattas and Goldsmid and Johnson Matthey) but this yielded few results. The archives of Sharps Pixley offer nothing that elaborates on the structure of the gold market.[664] The Rothschild archives in London are still closed to the public for the postwar

[663] Bordo, White, and Simard, 'France and the Breakdown of the Bretton Woods International Monetary System'; Eric Monnet, 'French Monetary Policy and the Bretton Woods System: Criticisms, Proposals and Conflicts', in *Bretton Woods: Global Perspective on the Conference and the Post-War World Order*, Palgrave MacMillan (G.Scott-Smith and J.Simon Rofe, 2017).
[664] The archives are held in the Kleinwort Benson Fund at the Metropolitan archives

period, and Johnson Matthey – a metallurgical firm at the time – does not offer access to its archives. Finally ScotiaMocatta, told me they do not have archives for the gold market in the 1960s.[665] I have also contacted some of the market participants at the time but have not, as of yet, found an interlocutor from whom I could learn more. The opening of the Rothschild archives for the postwar years might enlighten future research on the nature of speculation on the gold market.

More research is needed to get a clear overview of what investors thought about the importance of sterling even if this dissertation offers some insight. The focus here is on the role of central bankers, and they clearly understood the important role sterling played. I have presented quantitative evidence of the market reaction to sterling crises and there is no doubt these crises put pressure on the dollar. Future research, however, could look into how investors perceived the role of sterling in the stability of the international monetary system (for example by looking at private banks such as the Rothschild archives).

The evidence I accessed at the Bank of England suggests that the institution had a partial understanding of the stability of the international system and few ideas for reducing its volatility. The documents I found in the personal diaries of Roy Bridge give the impression that the Bank had only a limited grasp of the situation. But it is possible that more informed discussions took place at the Bank and that no minutes were kept. If such material were to be found, the evidence in this dissertation could significantly be supplemented.

In summary, this dissertation provides a new narrative of the fall of Bretton Woods. It shows how France played a smaller role than previously thought, whilst sterling crises had an importance which is ignored in modern literature. I also demonstrate how cooperation slowly unfolded between the two most important central banks at the time. Whether other currencies

[665] ScotiaMocatta is a subsidiary of Scotiabank which bought the broker Mocattas and Goldsmid.

will take over the dollar in the future is subject to speculation. Nonetheless, the evidence presented here highlights the risks inherent to such a transition.

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