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Zombie International Currency: The Pound Sterling 1945-1973

Maylis Avaro
Graduate Institute, Geneva

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Chemin Eugène-Rigot 2
P.O. Box 136
CH - 1211 Geneva 21
Switzerland

Zombie International Currency: The Pound Sterling 1945-1971[1]

Maylis Avaro

Oxford University – Swiss National Science Foundation

maylis.avaro@graduateinstitute.ch

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Abstract: This paper examines the international role of sterling during the Bretton Woods era and challenges the view of a competition between dollar and sterling after WWII. I construct a new dataset on the composition of foreign exchange reserves of European and sterling area monetary authorities. The postwar reserve role of sterling was limited to the sterling area and was artificial as this area was built as a captive market. I document the exchange controls, commercial threats and economic sanctions employed by the British authorities on sterling area countries to constrain them to keep their foreign exchange reserves in sterling.

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'gold and dollar holdings are an attribute of full national independence. This of course is all poppy-cock; but we cannot yet behave as if sterling balances carry equal glamour'

UK Treasury[2]

A 'Zombie bank' commonly refers to a failing financial institution which continues to operate, backed by public guarantees.[3] This paper examines the international role of sterling during the Bretton Woods period and characterizes it as a Zombie international currency.

Earlier contributions such as Eichengreen et al. (2018) and Schenk (2010) argued that after 1945, the pound sterling and the US dollar were the two international currencies of a multipolar monetary system. They described a gradual decline of sterling's share of global foreign exchange reserves in the fifties and the sixties, thanks to a successful management by the British government of the sterling balances. These balances were concentrated in the countries of the sterling area, a monetary zone built in 1939 in which members maintained a constant exchange rate with the pound sterling. The sterling area covered most of the Commonwealth, British Empire, and newly independent colonies. Interpretations diverge as to whether sterling area countries kept their reserves in sterling because they followed their best interest, protected a collective interest or were constrained by exchange controls and moral suasion from the British authorities.

This paper focuses on the use of sterling as reserve currency in Europe and in the sterling area and challenges the view of a competition between dollar and sterling as international currencies after WWII. I first contribute to the literature by providing new quantitative evidence of use of sterling as reserve currency in Europe and in the sterling area. I constructed a new dataset of foreign exchange reserves at country level for both Western Europe central banks and the sterling area from various archival sources. I show that in Europe, the shift away from sterling was already completed by

[2] 'Independent Gold and Dollar Reserves' 23th October 1955. The National archives [hereafter TNA] T236/4691

[3] The term first appeared in Kane (1987).

the early fifties. I observe that sterling represented a significative share of reserve portfolio only in the countries of the sterling area during the Bretton Woods era.

Secondly, I conduct econometric analysis to compare the drivers of the composition of foreign exchange portfolio in the two set of countries. The existence of the commercial and exchange controls imposed on the sterling area created high switching-out costs which affected the composition of their reserves. I show that these constraints rendered the composition of the reserves the sterling area members less elastic than European countries' reserves to variations in underlying macroeconomic fundamentals.

My third contribution lies in an in-depth analysis of Britain enforcement mechanisms to discourage the liquidation of sterling holdings of sterling area members. Using both quantitative analysis and archival findings from recently declassified documentation, I provide a new narrative on the decline of the pound sterling: from 1945, the pound was a zombie international currency surviving only in the captive market of the sterling area. In the wake of the Second World War, the Bank of England found itself crippled by war debts which were largely held in the sterling area. The international presence of sterling was subsequently buoyed by preventing the liquidation these sterling debts held in the sterling area. Sterling area members could not freely diversify their foreign exchange reserves, as British authorities systematically threatened to apply commercial and exchange controls sanctions, as well as freeze the assets of those who attempted to do so without approval from London. British authorities distorted the international distribution of sterling using international blackmail, propaganda and economic sanctions to limit the decline of sterling. I show that, as soon as a country managed to leave the sterling area, it rebalanced its reserve portfolio outside of sterling.

These results challenge the Berkeley view of a multipolar monetary world for the Bretton Woods era (Eichengreen et al. 2018). Sterling's key currency role stopped during the interwar period. After WWII, sterling's role did not compare with the dollar on the international stage as the presence of in global foreign exchange reserves was the result of artificial barriers built by British monetary authorities around the sterling area. In the countries free from British imperial influence, the dollar was the only key international reserve currency.

The question of the role of sterling on international money markets between the end of the First World War and the end of the Bretton Woods system fuels a vast academic literature. Studies on this question differ in their measurements of the decline of the international role of sterling. Eichengreen and Flandreau investigate the shift from sterling to dollar in light of the provision of trade credit[4] and of the composition of central bank reserves with country-level observations.[5] They conclude that the shift to the dollar occurred not in the decade following the Second World War, but rather during and immediately after the First World War.[6]

A second outlook on the decline of sterling focuses on the currency composition of international reserves at world level in the long run. This approach relies on data produced by the IMF. Schenk (2010) argues that 'it took ten years following the end of the war (and a 30 per cent devaluation of the pound) before the share of dollar reserves exceeded that of sterling'.[7] Using the same approach, Eichengreen et al. (2018) observe that, in the aftermath of the Second World War, sterling accounted for more than 80 per cent of foreign exchange reserves, was surpassed by the dollar in the mid-fifties and decreased to less than 10% of international reserves in the mid-seventies. They describe the Bretton Wood period as a of multipolar monetary world in which multiple international currencies existed. Eichengreen (2018) precises that this slow decline of sterling share of global total foreign exchange reserves was a consequence of limited opportunities for converting sterling into dollars as the British government employed trade and capital controls. This literature also emphasises the regional role of sterling, used as reserve currency mainly by sterling area countries. Schenk (2013) stated that for the 1950-1970 period, 'most central banks outside the sterling area had divested themselves of their sterling reserves and accumulated US dollars instead. Conversely, members of the sterling area continued to peg their exchange rates to sterling and to hold most of their reserves in sterling.' [8]

There is no consensus in the literature regarding the motivations of sterling area countries making such choice. Strange (1971) argues that postwar sterling can be characterised as a *negotiated currency*, in other words a reserve currency whose

[4] See Eichengreen and Flandreau (2008).
[5] See Eichengreen and Flandreau (2010).
[6] Their conclusion is supported by Chinn and Frankel (2008) and Frankel (2012) who also based their approach on the determinants of international reserve currencies.
[7] Schenk (2010), p. 30.
[8] Schenk (2013), p. 184.

issuing country offers 'special inducements – political, military[9], economic and financial – to the holders'.[10] She illustrates her points with the examples of Malaysia, Kuwait and Hong Kong in the sixties which received a military guarantee from Britain, and Australia which received important investments and commercial protection of key political groups such as Queensland sugar producers. Similarly, Schenk (1996) and Schenk and Singleton (2015) described that 'perceived national self-interest rather than loyalty' explains sterling holdings.[11] Schenk (1996, 2010) also argues that, from the mid-fifties until the 1967 devaluation, the sterling balances did not pose a direct threat to the British economy and were just 'a niggling potential discomfort'[12] for the British monetary authorities. She later stated that the sterling area system 'operated to support collective interests of its members in the stability of sterling and freer trade and investment flows, underpinned by carrots and sticks.'[13] The advantage of being in the system was gaining access to the London capital market, while leaving the system meant inconvertibility of sterling assets.

Kennedy (2018), studying the case of Australia rejected this interpretation and argued that 'Australia did not act as a free portfolio manager but freely chose to follow the rules of the sterling area, including reserve pooling, rather than diversifying'.[14] Henshaw (1996) reaches a similar conclusion for the case of South Africa, showing that British authorities offered only a limited range of choices to the South African government. Hinds (1991) and Krozewski (1996, 1997, 2001) argue Britain put pressure on the Gold Coast and Ghana to remain in the sterling area after their independence because the British authorities viewed colonial sterling balances as a threat to the stability of the pound. The potential liquidation of the sterling balances, once colonies gained independence, might affect the dollar convertibility of sterling. In the same vein, Eichengreen at al. (2018) refer to 'capital controls, moral suasion and geopolitical influence'[15] used to manage the sterling balances but they do not document this point.

A limitation of the existing literature is that previous research relied only on aggregated data at world level or limited samples of sterling area countries. Another

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[9] On the impact of military alliances on the composition of foreign exchange reserves, see also Eichengreen et al. (2019)

[10] Strange (1971), p. 17.

[11] Schenk and Singleton (2015), p. 1160.

[12] Schenk (1996) p.872.

[13] Schenk (2018), p.6

[14] Kennedy (2018), p. 25.

[15] Eichengreen et al. (2018).

limitation is the lack of analysis of the systematic coercion exercised by British authorities on sterling area countries. The argument of this article can be summed up twisting the carrot and stick metaphor: after 1945, the carrot was not luring sterling area countries anymore but the stick had become a sledgehammer.

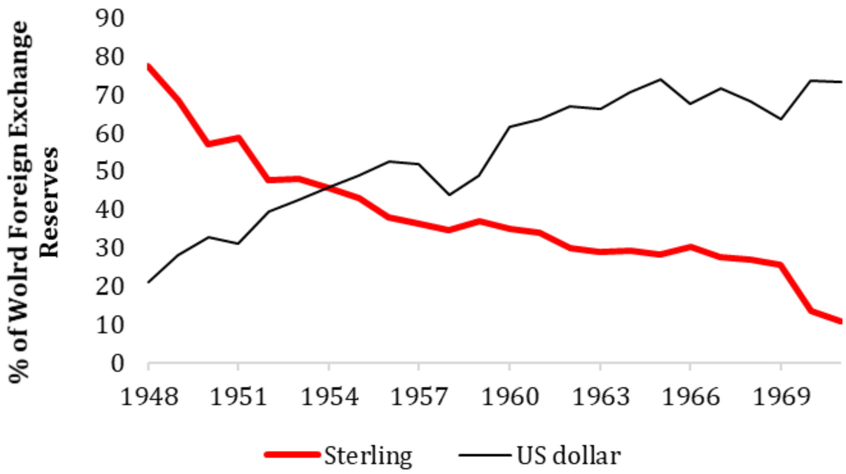
METHOD AND SOURCES

In this paper, I focus on the reserve role of sterling, studying the decision of central banks to hold their reserves in the form of pounds sterling. This approach is standard in the historical literature[16] on international currencies, but I am the first to use it with country-level data for the Bretton Woods era instead of using aggregated data provided on overall levels of reserves held in sterling in the world or conducting case studies on one or two sterling holders.

Foreign exchange under the Bretton Woods era were similar to previous periods and consisted mainly of foreign deposits, foreign bills and first-class government securities.[17] Due to the sensitivity of this data, neither central banks nor governments have published the composition of foreign exchange reserves. National monetary authorities communicated the volume of their aggregate holdings of gold and foreign exchange to international organisations such as the IMF, which reported such data in their publications, notably the *International Financial Statistics*.[18] In the IMF annual report, estimations of the composition of world foreign exchange reserves were also published. Relying on this data, Schenk and Singleton (2015) and Eichengreen et al. (2016) described a progressive decline of the pound sterling, see Figure 1.

Figure 1: Sterling share of World Foreign Exchange Reserves, compared to US dollars. (1948-1971, percent).

[16] See notably Chinn and Frankel (2008), Eichengreen and Flandreau (2009).
[17] See Eichengreen and Flandreau (2009) for a perspective on earlier periods.
[18] The International Financial Statistics is a monthly publication of the IMF which started in January 1948.



Source: Eichengreen et al. (2016), share of globally disclosed foreign exchange rate reserves, current exchange rate.

Working with IMF data does not allow to observe the currency composition of foreign exchange reserves at country level and erases the difference in countries' choices of their reserves. To analyse the international use of sterling as reserve currency, I study central bank reserves of both European countries and sterling area countries. I reconstructed the foreign exchange reserves of nine western European countries using their central bank archives for the period 1950-1970, the core Bretton Wood era. I compiled the data from handwritten ledgers or typewritten accounting forms retrieved from their archives. Table 1 provides a description of the archives consulted and the period considered.[19]

Table 1: Coverage of European sources

Country	Source	Period
Austria	Österreichische Nationalbank	1950 – 1971
Belgium	Banque de Belgique	1950 – 1971
France	Banque de France & Fonds de Stabilisation des Changes	1950 – 1971
Germany	Bundesbank	1952 – 1971
Italy	Ufficio Italiano dei Cambi	1946 – 1971
Norway	Norges Bank	1950 – 1971
Portugal	Banco de Portugal	1950 – 1971
Spain	Instituto Español de Moneda Extranjera	1945 – 1971
Switzerland	Banque Nationale Suisse	1950 – 1971

[19] For a detailed presentation of the archival sources, see Avaro (2020).

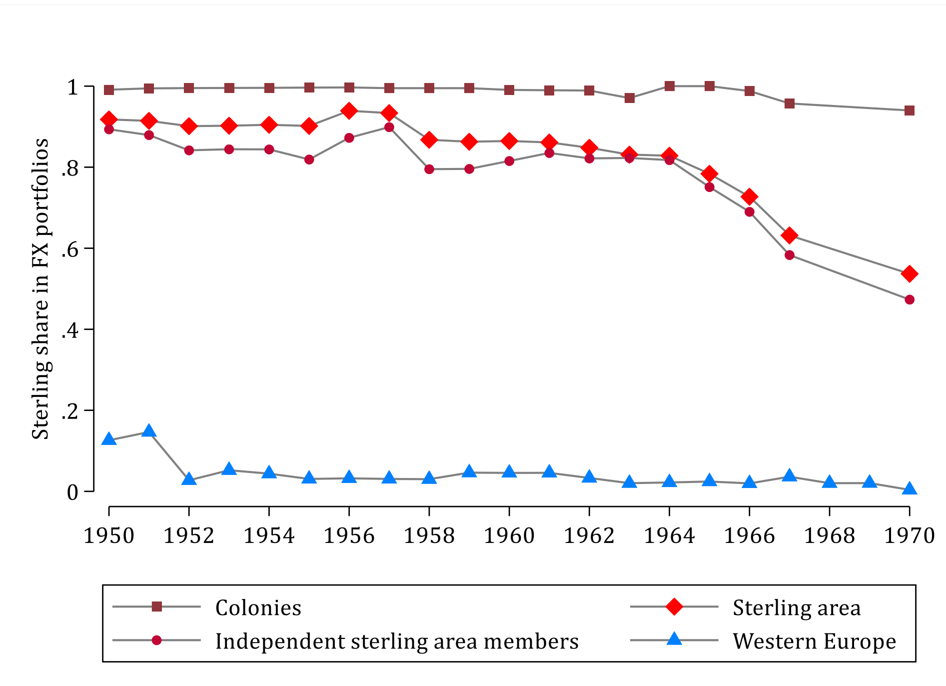
Using documentation from the BIS archives, the Bank of England Archives and Her Majesty's Treasury Archives, I also reconstructed the composition of the official reserves of the main countries of the sterling area to measure the share of sterling in these countries' reserves. Because sterling liabilities were a concern of these institutions, reports were regularly produced on the volume of such liabilities. My sample consists of twenty-one sterling area countries[20] whose reserves represented on average 73% of all sterling holdings of the sterling area.

THE USE OF STERLING AS RESERVE CURRENCY

A new perspective from country level data

Using the sources described above, I compare the share of sterling within official reserves of the sterling area countries and European countries, as displayed in Figure 2.

Figure 2: Share of sterling in reserves of central banks (gold + foreign exchange)



[20] Australia, Brunei, Ceylon, Ghana, Hong Kong, India, Irish republic, Jordan, Kenya, Kuwait, Libya, Malawi, Malaysia, New Zealand, Nigeria, Pakistan, Sierra Leone, Singapore, Tanzania, Uganda, Zambia. Missing countries are the Caribbean and English Islands and some middle East countries.

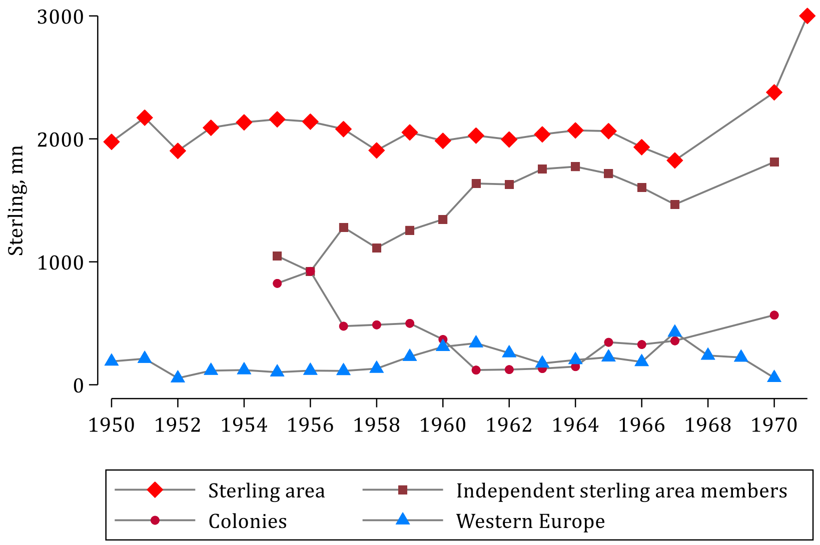
Reading: In 1955, sterling represented 89% of the official reserves of the sterling area and 6% of the official reserves of Western Europe countries.

Source: Author's dataset, see text.

Error! Reference source not found. shows that sterling accounted for less than 10% of the reserves of Western European countries as early as 1952, while it accounted for more than 60% of sterling area reserves until 1967. This contrasts with the trend at world level of an ongoing decline in its relative position in the fifties and sixties. In Europe, the shift away from sterling was already completed by the early fifties.

By contrast, sterling was the main reserve currency of the sterling area throughout the period. Breaking down sterling area reserves between independent members of the sterling area and colonies reveals that a diversification away from sterling occurred from the mid-sixties in independent members' reserves only. The independent member countries were mostly formers colonies such as Australia or former British protectorates from the Middle East such as Kuwait. This suggests that colonies would have divested from sterling too, had they been free to choose.

Figure 3: Volume of sterling holdings in central banks' reserves.



Reading: In 1955, sterling holdings amounted to £2,159 million in official reserves of Overseas Sterling Area and £95 million in the official reserves of Western Europe countries.

Source: Author's dataset, see text.

Figure 3 displays the distribution of the volume of sterling held in Western European central banks and in the sterling area. Sterling held in Western European central banks represented on average 6% of all sterling held within the sterling area. The volume of balances held in the sterling area was stable whereas Figure 2 shows a decline of the share of sterling as foreign exchange. This indicates that sterling area countries diversified their portfolios by accumulating new reserves and not by converting their sterling holdings into gold or other reserve currencies. The decrease in the volume held in colonies can be explained by the decreasing number of colonies across the period.

The increase of the volume of sterling held in the sterling area after 1968 came from the 1968 bilateral agreements between British authorities and sterling area members, which imposed a minimum quota of sterling in their foreign exchange reserves, in exchange for a guaranteed value in dollars of their sterling holdings.[21] These agreements protected sterling holders from the damage of a sterling devaluation and at the same time forced them to increase their sterling holdings if they wished to accumulate new dollars in their reserves. The volume of foreign exchange reserves of sterling area countries increased by 54 percentage points between 1967 and 1970 while the share of sterling in these reserves fell from 63% to 53%.

The breakdown of reserves portfolio with country-level data betrays that sterling had been reduced to a mere regional role as early as the fifties. It provides new quantitative evidence to the argument of the limited influence of sterling as a reserve currency in the postwar period. It also shows that sterling holdings were unevenly distributed in the sterling area.

This picture is consistent with the fact that, according to the Bretton Wood agreements of 1944, sterling no longer played a pivotal role in the international monetary system. The US dollar was the key currency of the system, convertible in gold at a fixed parity while currencies of other members guaranteed the convertibility of their currency in dollar only. This pyramidal system, topped by the dollar and gold, left little room as an international currency role for sterling.

A Zombie International currency

[21] See Schenk (2010) for more details on this episode.

During the Bretton Woods era, sterling holdings were unevenly distributed among European and sterling area countries. I investigate the potential drivers of such heterogeneity. The existing literature on the theory of demand of reserves currencies unearths several drivers.[22] Some are related to the characteristics of the issuing countries such as the credibility of its monetary policies,[23] its economic size[24] and its financial depth.[25] Other drivers are relationships between the issuing country and the reserve holder, such as their trade relations or military alliances.[26]

Previous macroeconomic and historical studies such as Bean and Crafts (1995) or Broadberry and Crafts (1996) pointed out the hardships plaguing the UK economy during the Bretton Woods era. While the United Kingdom boasted strong macroeconomic fundamentals in the 19th century, the course of the two world wars transformed Britain from the world's largest creditor into the world's largest debtor.[27] At the end of 1945, sterling liabilities totalled £3,700 million while gold and dollar reserves stood at only £620 million.[28] A 1953 BIS report stated that 'the existence of these very large debts, taken together with the current level of the United Kingdom's gold and foreign exchange reserves, has been one of great obstacles to the normalisation of British currency conditions in the post-war period'.[29] Only in 1954, the war restrictions on transfers of sterling for current or capital purposes were lifted for residents of forty-three countries outside the sterling area or dollar area.[30] Convertibility was fully restored in 1961 for non-sterling area countries and only in 1972 for sterling area countries.[31] Despite these heavy restrictions, English monetary policy was not credible in the money markets and the Bank of England had to devaluated twice, in 1949 and 1967 following market pressure.

Turning to economic size and macroeconomic performance, the United Kingdom did non display the strength expected for an international currency issuer. In

[22] See Frankel (2012) and Eichengreen et al. (2018) for recent surveys of the literature and the first chapter of this dissertation.

[23] Cohen (1971), Li and Matsui (2005), Devereux et al. (2004).

[24] Black (1991), Kindlerberger (1967), Matsuyama et al. (1993), Portes and Rey (1998), Subramanian (2011).

[25] Eichengreen and Flandreau (2012), Eichengreen et al. (2016), Flandreau and Jobst (2009), McKinnon (1979).

[26] Eichengreen et al. (2019), Ito and McCauley (2020).

[27] May (2013), p.30.

[28] Monetary and Economic Department, *The Sterling Area,* BIS, Basle, Jan. 1953. p.69. Source: Federal Reserve Archives [hereafter Fed Archives], 563212.

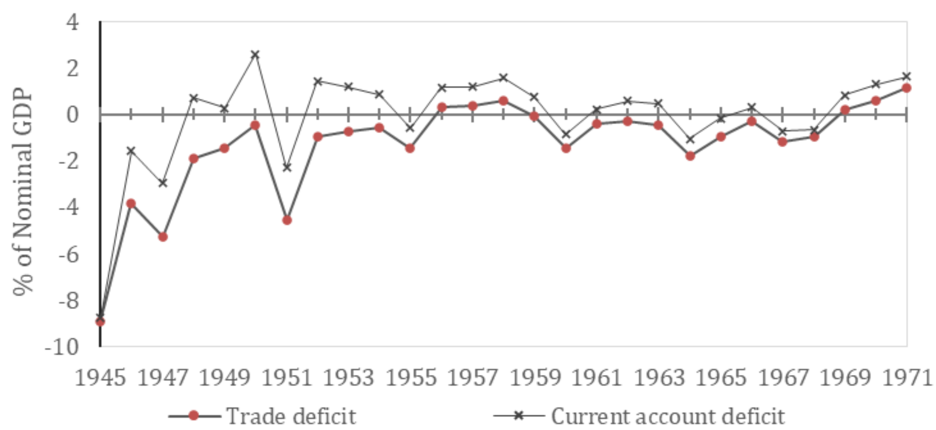
[29] Monetary and Economic Department, *The Sterling Area,* BIS, Basle, Jan. 1953. p.70. Source: Fed Archives, 563212.

[30] Source: International Monetary Fund (1954), Schenk (1994).

[31] See Cairncross and Eichengreen (1983), chap. 4, Schenk (2010), Chap. 3 and Bank of England quarterly bulletin, 1967, 'The U.K. exchange control: a short history', Bank of England Archives [hereafter BoE Archives].

term of economic growth[32], it lost its role as the leading economy of Western Europe by the mid-fifties. Over the period 1950-1970, its GDP per capita grew by 7% on average, slower than most Western countries which experienced an average growth of 11%.[33] The UK was also a declining trade power during this period: even though its exports increased during the period, its share in world trade decreased steadily from more than 10% in 1950 to 6.2% in 1970. It ran a persistent trade deficit, especially in the sixties, as seen figure 4. Current account deficits were recurrent, appearing more than one year out of two between 1945 and 1971 and no stable surplus ever appeared in this period.[34]

Figure 4: Trade & current account deficit in the United Kingdom,



Note: Annual, Not Seasonally Adjusted, in % of nominal GDP

Source: A millennium of macroeconomic data for the UK, Bank of England.

The postwar period was also characterized by the breakdown of the British Empire. Twenty-nine countries of the sterling area became independent between 1945 and 1971, notably India in 1947 and most of the West African and Asian colonies after 1958. The Suez crisis revealed how the risks posed by sterling liabilities limited British military expenses needed to defend Britain's world role.[35] Together with the 1947 withdraw from Greece, the Suez crisis highlighted the declining military strength of Britain. In order to defend the pound sterling after the Suez crisis, Prime Minister Harold Macmillan had little choice but to cut defense expenditures and reconsider

[32] If measured in terms of output-based real GDP, see Penn World Table.

[33] Number calculated on a sample covering Austria, Belgium, Switzerland, France, Italy and West Germany. Source: CEPII, *Tradehist*.

[34] Source: A millennium of macroeconomic data for the UK, Bank of England, built originally in Ryland et al. (2010).

[35] See Cain and Hopkins (2014), p.677.

Britain's position as a world power. Financial markets priced Britain's lasting difficulties, as well as recurring public deficits as reflected by the jump in yields on British government bonds from 3% to 9% over the period 1950-1970.

British financial markets were also themselves facing difficult times. London lost its leading role as financial center already in the interwar period, to the benefits of New York.[36] Oosterlinck and Degive (2019) show that the implicit imperial guarantee that colonies were often supposed to benefit became less valuable after Britain's departure from the gold standard in 1931 and as it became clear that India would become independent. Throughout the thirties, the new capital issues for British colonies declined.[37] After WWII, the domestic money market was tight[38] and the London financial center experienced tensions with the Treasury which imposed capital controls on international transactions.[39]

These macroeconomic indicators point towards high risks of holding sterling as a reserve currency as weak performances in term of macroeconomic strength, monetary stability and balance of the current account pointed to an impending devaluation.[40] The intrinsic characteristics of the issuer of sterling in terms of credibility and size or military power did not portend an international role of the pound sterling as a reserve currency. The low share of sterling observed in European countries' reserves reflected therefore UK difficulties. Yet the regional role of sterling within the sterling area cannot be explained by these factors.

Bilateral drivers of the demand for sterling: an empirical investigation

To investigate the bilateral drivers of sterling holdings, I examine membership of the sterling area and trade relations. I test how sterling membership affects the share of sterling in foreign exchange portfolios. I also test whether the impact of the trade relations on the share of sterling was similar between European countries and sterling area countries. To do so, I estimate the following gravity model (1) in the spirit of Accominotti et al. (2010):

[36] See Eichengreen and Flandreau (2012).

[37] This decline is visible in the Bank of England Statistical Summary 1927-45, BoE Archives.

[38] See Schenk (1998).

[39] See Atkin (2004) and Davies (2017).

[40] For a discussion on macroeconomics indicators predicting currency crisis, see Budsayaplakorn, Dibooglu, and Mathur (2010).

$$\begin{cases} Share_{i,t} = \alpha + X_{i,t}\beta_0 + Z_i\gamma + COL_{i,t} + TIME_t + u_{i,t} \text{ if } i \text{ is a European country} \\ Share_{i,t} = \alpha + X_{i,t}\beta_0 + X_{i,t}\beta_1 + Z_i\gamma + COL_{i,t} + TIME_t + u_{i,t} \text{ if } i \text{ is a sterling area country} \end{cases}$$

(1)

Here $Share_{it}$ denotes the share of sterling holdings in a country's i reserve portfolio for year t, α is a constant, $X_{i,t}$ is a vector of bilateral explanatory variables, including the intensity of bilateral trade with the UK, measured by an index of trade intensity (see appendix 1) and the relative GDP of the holding country i to the UK's GDP. Z_{ij} are for the time-invariant country-pair specific gravity controls, such as distance, or common language. $COL_{i,t}$ is a dummy to control whether country i was still a colony in year t. UK-specific controls are not included as they are captured by the year fixed effects, denoted here by $TIME_t$. All errors are clustered at the country level.

$(\beta_0 + \beta_1)$ captures the effect of the interactions with the explanatory variables of a dummy equal to 1 in case of membership of the sterling area. By this, I observe whether sterling area countries' sterling holdings were more or less responsive than European countries to the usual bilateral drivers of demand of reserve currencies.

To estimate this model, I match my data on foreign exchange holdings with the Historical Bilateral Trade and Gravity Dataset (TRADHIST) that was put together by Fouquin and Hugot (2017) who gathered bilateral nominal trade flows, country-level aggregated nominal exports and imports, nominal GDPs, as well as the gravity controls. My sample consists of nine European countries and twenty-two sterling area countries. I run the model over the period 1954-1971 as sterling was not transferable before 1954. Results for marginal effects are reported in Table 2.

Table 2: Panel regressions on the drivers for sterling holdings.

	(1) With Sterling Area	(2) Post 1957	(3) Independent countries only
Sterling area membership	0.56***	0.52***	0.56***
	0.00	0.00	0.00
trade intensity w/UK	0.13***	0.15***	0.15***
	0.00	0.00	0.00
trade * Sterling area membership	-0.08*	-0.11**	-0.09*
	0.06	0.01	0.06
GDP ratio	-0.35***	-0.40***	-0.34***
	0.00	0.00	0.00
GDP ratio * Sterling area membership	-0.21***	-0.26***	-0.21***
	0.00	0.00	0.00
Controls			

Weighted Distance	Yes	Yes	Yes
Year Fixed effects	Yes	Yes	Yes
Colony	Yes	Yes	No
Adjusted R^2	0.815	0.798	0.794
Observations	411	328	350

*Note: the dependent variable is the z-score of the share of sterling in reserves of monetary authorities of sterling area countries. All errors are clustered at the country level. The variable controlling for distance measures the population-weighted-great-circle distance, in km. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.*

Column 1 reports the baseline panel. Column 2 displays the results for the post-European Payment Union period of 1958-1971, when all European currencies including sterling were convertible. Column 3 shows the estimates for a panel excluding the colonies. As expected, the coefficients for the dummy for membership of the sterling area are positive and significant. The effect of being a member of the sterling area was associated with an average increase of 56 percentage points in the share of sterling. For European countries, the coefficients for trade intensity are positive, significant and stable across specifications. An increase of the intensity of the trade relations between the United Kingdom and a European country was associated with an increase of the share of sterling in its foreign exchange reserves. The same coefficients for sterling area countries are significant but smaller. The marginal effect of trade intensity on the share of sterling is smaller for sterling area countries indicating that the composition of their reserves was less responsive to the variation in trade intensity than those of European countries.

The coefficients for relative GDP are significant and negative, indicating that when these countries grew faster than the United Kingdom, they tended to rebalance their portfolio away from sterling. They are larger for sterling area countries compared with European countries, indicating that this effect was stronger for

These results withstand a series of robustness checks: replacing the relative GDP by the nominal GDP or by the size of the populations as well as replacing the time-invariant country-pair specific gravity control by the distance between the main cities or the shortest distance by sea or the existence of a common language. The results are also robust for the period 1958-1971 to the measure of the trade link by the ratio of exports to the United Kingdom over the total export instead of the index of trade intensity. Table 4 in appendix reports the estimates of these robustness checks.

Similarly to the market distortion created by the 'colonial effect' on borrowing costs described by Accominotti et al. (2010), these estimates demonstrate the existence of a strong 'sterling area effect' in the evolution of the international distribution of sterling holdings. I argue that the mechanism at play behind this effect is the exchange controls surrounding the area and the fact that the sterling area was not a free market which one could enter and leave at will. The existence of switching costs for sterling area countries restricted rebalancing of their portfolio outside sterling. The following section provides historical evidence for this argument.

THE STERLING AREA AS A CAPTIVE MARKET

Capturing the sterling area countries

Sterling and the British institutions occupied a central place in the area. Sterling was used for the settlements of trade and other transactions and Member countries maintained a constant exchange rate between their currency and the pound sterling until 1967. They had to pool their gold and dollars earned from capital or current account transactions at the Bank of England and were not allowed to build up independent reserves in foreign currencies or gold.[41] They were theoretically allowed to use their sterling balances to draw on the central gold and dollar reserves to settle payment with a country outside of the area. But such withdrawals were subject to the approval of British authorities who resisted any move towards a diversification of reserves of sterling area countries to limit drains on the Bank of England reserves. For the British Treasury, the practice of holdings of gold and dollars in sterling area countries' reserves instead of pooling them in London was considered the potential 'ruin' of sterling due to the low central reserves.[42] Thus sterling area countries' gold and dollar holdings were supervised and approved on a case-by-case basis by British authorities. Failing to comply with this system meant, on paper, expulsion from the sterling area. To ensure that sterling area countries — cumulatively holding 65% of the net U.K. liabilities in 1945 — did not liquidate these balances, British authorities enforced a system of economic inducements and sanctions. In the words of the British

[41]With the exception of gold producing countries such as South Africa and Australia, see Kennedy (2018) and Henshaw (1996).

[42] 'It might ruin sterling if they pot up much more [gold and dollars] when the central reserves are weak'. Source: Independent Gold and Dollar Reserves, 26 October 1955. TNA T236/4691

policymakers, the sterling area worked similarly to Bentham's panopticon[43], whereby a central authority controlled disciplined members who surrendered their earnings:

> *At the end of the war therefore, the sterling area consisted of a named list of countries, with a strong exchange control fence around them, who surrendered their currency earnings, pooled their reserves in sterling, had complete freedom for all payments within the area and limited convertibility outside; the whole system subject to control at the center.*[44]

From 1947 to 1972, exchange controls between the sterling area and the rest of the world were enforced, on the basis on the Exchange Control Act of 1947. Any capital or current account transactions which might affect the UK's foreign exchange reserves required the consent of the UK Treasury. [45] For a resident of a country outside the sterling area, permissions would be needed from the Treasury commercial transactions including international payments, transactions of securities, coupons or gold and foreign exchanges. Company ownership and international lending were also regulated.[46] Failing to obtain the required permission from the Treasury meant that the sum payable or to be credited would be sent to a blocked account. Offenses to this exchange control act could be punished by imprisonment and the forfeiting of concerned funds.

Transactions between a sterling area resident and the rest of the world were subjected to these controls but not those between British and sterling area members. Exiting the sterling area meant that permissions would be needed from the Treasury for capital and current account transactions with the United Kingdom and the rest of sterling area. The imposition of these exchange controls and the potential adverse consequences for investments constituted the first threat used by British authorities to create high switching cost outside of sterling.

The great majority of the sterling area countries were also members of the Commonwealth which, as such, was granted preferential treatment by the UK.[47] The Commonwealth preference emerged during the interwar: while Britain raised its tariffs, including a general 10% tariff through the Import Duties Act of 1932, it granted

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[43] See Bentham (1791).

[44] 'The Sterling Area', S.W.P. memorandum, 29 July 1966, BoE Archives, OV44/33.

[45] In practice, most of the Treasury's responsibilities under the Act were devolved to the Bank of England, who delegated some responsibilities to banks.

[46] Similar controls applied to private transactions, except for small amounts.

[47] Bank for International Settlements. « The Sterling Area », January 1953. Fed Archives, Box 671672200.

exceptions to colonies and Dominions. This trade policy had reinforced the trade intensities between the UK and the Empire, which accounted for less than 30% in the late twenties and around 45% in the late thirties.[48] The postwar negotiations and the inception of the GATT prohibited new trade preferences within the Commonwealth, but existing preferences remained in place until 1973, when Britain joined the EEC.[49]

In addition, a system of quantitative controls on imports to the UK was in place since the war.[50] Direct controls took two forms: British government purchase and import licensing. The objective of the discriminatory import policy was to control the payments in foreign currencies to make the most of the limited availability of foreign exchange. Imports from the sterling area enjoyed the most advantageous treatment whereas dollar area imports were the most restricted. The share of restricted imports coming from outside the sterling and dollar areas decreased progressively during the fifties but remained higher than those from the sterling area.

Leaving the sterling area threatened participation in the Commonwealth. Departing countries would then face new tariffs on their trade with the UK. They would also face new quantitative import controls. Exporting industries of the departing country would suffer from such a move. This was the second threat used by British authorities to discourage departure from the area and liquidation of sterling assets.

Members of the sterling area were supposed to enjoy free transit of private capital from the UK as well as access to the London market for private and public purposes. Government loans were reserved for Commonwealth members. British authorities proposed that the membership of the sterling area allow governments to borrow on advantageous terms. Banks and other financial institutions of member countries could freely access the London money market to meet short-term liquidity needs.[51] The sterling area was promoted by the British authorities as an international payment system aimed at simplifying trade and payments for its member countries.[52] The Bank of England was presented as the banker of the Area, organising multilateral payments and holding gold and foreign exchange reserves. British authorities argued that losing access to London capital market and to the international payment system of the area in case of a departure from the area would affect the borrowing capacity of

[48] See Bromhead et al. (2018)
[49] See Cain and Hopkins, (2014), p. 678.
[50] See Hemming et al. (1959), Brennan and Milward (1996), Schenk (1994).
[51] Taylor, A.W. Letter to D. Rickett. « 1. The question put by Sir Leslie Rowan... », 27 September 1957. T236/5362. The National Archives, (TNA) Kew.
[52] *The advantages of membership of the Sterling Area*, Confidential, T.L. Rowan 2 October 1958 TNA T236/5362

the departing country and the access to liquidity for its financial institutions. This constituted the third threat made by British authorities.

The arguments of British authorities were summed up when Ghana was approaching independence and considering leaving the area.

> *The effect of Ghana of leaving the Sterling Area was worked out a few months' ago when Dr. Krumah threatened to do unless he was guaranteed certain financial assistance. The disadvantages to Ghana [...] included:*
>
> *Handicaps to the free flow of private capital to Ghana*
> *Imposition of exchange control,*
> *Adverse reactions on trading relations*
> *Injury to credit and confidence*[53]

They also underlined that the system of pooling of reserves allowed members to avoid holding interest free gold reserves and limited the waste of resources in building national reserves. They threatened that 'it is [...] doubtful whether Commonwealth preference would survive [...] if the sterling area did not exist' and that winding up the sterling area would 'be a major disruption of world trade'.

The functioning of the area can be compared with a prisoner's dilemma: a sterling area country could choose to cooperate and follow the rules of the area or choose to liquidate from of its sterling holdings and diversity its reserve portfolio, with the risk of economic and commercial sanctions. The UK could also cooperate and maintain sterling value and the advantages in terms of commercial and financial markets access or defects and devalue or limit capital outflows to the area.

Exit, voice, loyalty: Troubles in the Sterling Area, 1945-1967

The Exiters: Trading diversification of reserves against exchange controls

Four main cases of departure/exclusion from the sterling area, Egypt (1947), Iraq (1959), Rhodesia (1965) and Burma (1966) illustrate the treatment that the British Authorities reserved to Leavers. In each case, I used UK archives to describe how British authorities negotiated bilaterally with the exiting countries the conditions of

[53] Letter to D. Rickett 'Leaving the Sterling Area' from A.W.Taylor, 27 September 1957. TNA T236/5362

departure and managed to avoid 'no deal' exits to limit as much as possible the liquidation of sterling balances and drains on the Bank of England reserves.

The exclusion of Egypt

Egypt was the second holder of sterling balances after India in 1946, it held £440 million, of which £345 million was held by Egyptian public authorities. £400 million came from British military expenditures during the war.[54] Egypt asked for the buildup of a gold reserve amounting to 25% of its currency or a partial release of its blocked sterling balances. Such demands were qualified as 'completely unacceptable'[55] by the British authorities who were willing to accept only a gradual release of £10 million a year[56] and were also asking for the partial cancellation of war debts. Negotiations started in 1946 but by 2 June 1947, British authorities started to consider blocking Egyptian balances:

> *If the negotiations break down, […] we must block the whole account, i.e. not only National Bank holdings, but those of commercial banks and private persons, to bring the whole of Egypt's external trade to a standstill and of course affect confidence in their currency. […] To make blocking effective we should probably have to put Egypt outside the Scheduled territories.*[57]

On 4 June, British authorities concluded that exclusion of Egypt from the sterling area was necessary in order for them to keep the hand on the rhythm of the liquidation of the Egyptian balances, a top-secret memorandum stated that:

> *A major British interest in the forthcoming Sterling Balance negotiations with Egypt will be to secure adequate control to prevent the Egyptians drawing down their balances or realising their securities faster than the agreed rate. We cannot be content to rely on administrative action by the Egyptians since we have not sufficient confidence in their machine […] as a long-term control, to operate for the duration of the agreement, only the exclusion of Egypt from the*

[54] Notes from Report made to the Egyptian government by M. Paul van Zeeland on Egypt's Sterling balances. 19 November 1946 TNA T236/761

[55] Secret minute sheet, 20 January 1947. TNA T236/761

[56] Letter to Sir Wilfrid Eady, 15 April 1947. TNA T236/762

[57] Letter to M. Trend, 2 June 1947. TNA T236/767

Sterling Area (in the Exchange Control meaning of the phrase) will suffice.[58]

Excluding Egypt from the area would prevent Egyptian drains on the Bank of England's reserves. From there, British authorities restated the terms of the negotiations with Egypt as a choice between leaving the area with or without an agreement on the partial release of their holdings, as an agent of the Treasury advised:

(1) If there is a real row, we must put them out to make a block effective.

(2) If there is full agreement, Egypt should ask to go out in order to carry out the agreement in good faith.

But between the two may be a debatable area, in which Egypt would plea to stay in. Here we shall need to cajole them out.[59]

By the end of June 1947, the Chancellor offered that Egypt would 'go outside the sterling area by agreement', that Egyptian sterling balances would remain blocked, except £8 million which would be immediately released. Moreover, working balances amounting to a maximum of £12 million would be made available to meet incoming payments until the end of the year. The alternative was a full blocking, so the Egyptians accepted what was perceived as the last change offer.[60] The UK Treasury decided to circulate a narrative that Egypt had chosen to leave the sterling area due to technicalities on the exchange controls as they feared that the news of exclusion could negatively affect ongoing negotiations with other independent countries within the sterling area.[61]

Egypt was officially forced out of the sterling area on 15 July 1947 - along with Sudan who was pegging its currency to the Egyptian pound. But when faced with the fall in their dollar reserves due to the 1947 convertibility crisis[62], the British authorities decided to limit the amount of sterling they would accept to convert to only £1.5 million despite the number of £12 million had been agreed a few weeks before.[63] Egypt then faced a dollar shortage but the British authorities argued that:

Egypt left the sterling area at her own request with effect from 15th of July, 1947. There is therefore no obligation on the United

[58] Top secret Treasury, OF.36/10/9 'Egypt and the sterling area' T 898-47, TNA T236/767
[59] Letter to Sir Wilfrid Eady, 9 June 1947. TNA T236/767
[60] Untitled memorandum, *The Chancellor of the Exchequer saw the Egyptian Ambassador…* 30 June, TNA T236/767
[61] Letter to Sir Wilfrid Eady, 12 June 1947, TNA T236/767
[62] See Newton (1984) for more details on this event.
[63] Telegram from Foreign office to Cairo, 18 August 1947. TNA T236/769

Kingdom to assist her in her dollar difficulties. [...] It is clearly out of the question that we should make up in full the Egyptian dollar deficit. Egypt must be asked to accept some further degree of dollar austerity.[64]

Egyptian authorities tried to argue that their difficulties 'had largely arisen because dollar contracts had been entered into in the honest belief that after 15 July 1947 sterling would be freely expendable in the dollar area'[65] but their argument didn't go through. Egypt reached its maximum dollar drawing on 20 October and was refrained from drawing more until the end of the year, which resulted in an exchange crisis.[66]

The Bank of England maintained a full freeze on Egyptian sterling balances until the next calendar year when another short-term agreement with a limited release of sterling was signed. A long-term agreement on the settlement of sterling balances was reached only in 1951 under the terms of the British authorities: they would only allow £20 million to be converted per year.[67] The narrative of a 'chosen' departure from the sterling area appeared in the press as *The Economist* wrote in July 1947:

Egypt's decision to leave the sterling area is a product of circumstances which are peculiar to her particular case. [...] Nor should the formal step of Egypt's withdrawal from the sterling area be regarded as anything more than a technical change. [...] the whole of Egypt's external reserve will still be held in sterling – albeit unavailable sterling[68]

The case of Egypt shows that the British authorities conditioned membership of the sterling area on the respect of the rate of liquidation of sterling balances that they decided. They used the existence of exchange and capital controls to block sterling balances held in London when necessary and limit their convertibility into dollar.

The departure of Iraq

[64] Letter to ... Dollars, Egypt, 26 August 1947. TNA T236/769

[65] Telegram from Cairo to Foreign office, 23 September 1947. TNA T236/769

[66] Egypt, memorandum for C.N.C. undated, TNA T236/769

[67] Letter to M.E. Johnston from J.A. Ford, Iraq government's intention of leaving the sterling area: U.K.'s attitude towards the Iraq sterling balances. 22 September 1958. TNA T236/4793

[68] The Sterling Agreements, *The Economist* (London, England), Saturday, 5 July 1947, Vol. 153, Issue 5419, p.27.

The second major case of departure from the sterling area is Iraq, which in 1957 held around £127 million in balances.[69] In 1955, the Iraqi demand for diversification of the currency cover of the Iraq dinar was frowned upon by the British Authorities:

> *It is my impression that when Iraqis speak of diversifying their currency cover they are thinking of gold as well as of other currencies. Whether this is because of the innate Oriental love of gold or not I cannot say but there is undoubtedly a feeling that prestige is enhanced if part of the national currency cover is held in gold.*[70]

However, Iraq kept pushing, arguing that India and Ceylon had been allowed to accumulate some reserves in gold. The 1955 Anglo-Iraqi Financial Agreement allowed the conversion of £5 million of their balances into gold between 1955 and 1957, to diversify their reserves and cover their currency. At the end of this period, Iraqis reportedly approached Germany to start building deutschmark reserves and mentioned leaving the sterling area. British authorities treated this as a rumour[71] but feared the impact on the reputation of the pound sterling and potential snowball effects on other members of the area:

> *Iraq's departure from the Sterling Area [...] would be damaging to sterling as well as a blow to the prestige of the U.K. in the world at large. [...].*[72]
>
> *Financially, Iraq's departure from the Sterling Area would mean adding £127 million to total non-resident holdings of sterling; and might lead to pressure from Iraq, and later from other Middle East States, for oil revenues to be paid in dollars. Politically, it would be a blow to our position at a very critical time.*[73]

When demands for partial conversion of sterling increased in 1957, the Chancellor of the Exchequer argued it was not in Iraqi's interests as it may spur a devaluation of sterling. Converting part of Iraqi's sterling balances would put sterling under additional pressure, when the UK had just faced the Suez crisis and sustained heavy drains on its reserves. They argued that it would not be in Iraq's interest to 'make

[69] Letter to R. Littder, M.E. Johnston, 'Iraq: Diversification of currency cover', 17 September 1957, TNA T236/4796

[70] Letter to Belgrave from W.J.M. Paterson, 20 June 1955. TNA T236/4691

[71] Telegram from Foreign Office to Bagdad n°48. 7 January 1957. TNA T236/4796

[72] 'Iraq: Diversification of currency cover'. OF. 58/204/04, by J.A.Ford. July 1957. TNA T236/4796

[73] Letter to R. Littder, M.E. Johnston, 'Iraq: Diversification of currency cover', 17 September 1957, TNA T236/4796

the switch at a bad time'.[74] A further agreement of conversion in gold of £10 million to Iraq over a period of two years was reached in October 1957.[75] In September 1958, the new Iraqi government announced that they planned to leave the sterling area. British authorities could not prevent Iraq from leaving the sterling area but considered blocking her sterling holdings and only releasing them gradually on the analogy of the agreements made with Egypt. Eventually, the blocking strategy was given up by British authorities to protect confidence in sterling, they did not want to signal to other Middle East countries such as Jordan or Libya that their sterling balances could be blocked. [76] They chose to allow a limited conversion of sterling, for the purpose of current payments.[77]

During formal financial negotiations, in June 1959, the Iraqis asked for a gold guarantee or at least, a convertibility guarantee of their sterling holdings, which was refused.[78] So Iraq finally decided to leave the sterling area, to be able to make an independent decision on its reserves and to be free to decide which proportion of sterling they would keep in their reserves. They held about £100 million in sterling, £20 million worth of gold and other foreign currencies and could not obtain guarantees against devaluation or suspension of convertibility from the British authorities. They left the sterling area on 23 June 1959 without a formal agreement on the rate of release of their sterling balances. The statement of the Iraqi minister of finance proved a very good understanding of the costs of staying within the sterling area and of the impossibility to conduct of a fully independent monetary policy within the area:

> *Iraq was unable to acquire what she needed of currencies unless through the Sterling Area. The amount of foreign currencies at Iraq's disposal were subjected to negotiations carried out at intervals. These used to depend on the position and strength of the Sterling Pound. [...] It was not possible to acquire varied reserves except during the past few years and at a very meagre level at that. That situation also led to the accumulation of the Sterling balances in England. It was not possible to dispose of these balances except within certain limits.*[79]

[74] Phone call between the Iraqi Minister of Finance and the Chancellor of the Exchequer on 26 September 1957 at 3.30 p.m. Note for the record, Iraq, A.W.F. 28 September 1957, TNA T236/4796

[75] Letter to Dr. J.A.Ford from C.D. Smith, 6 November 1959, TNA T236/4796

[76] Letter to M.E. Johnston from J.A. Ford, Iraq government's intention of leaving the sterling area: U.K.'s attitude towards the Iraq sterling balances. 22 September 1958. TNA T236/4793

[77] Draft minute to the prime minister, Iraq and the sterling area. M.E.Johnston. 21 May 1959. TNA T236/4794

[78] Telegram from Bagdad to Foreign Office, 1 June 1959. TNA T236/4794

[79] Statement by minister of finance, Iraq times, 7 June 1959. TNA T236/4794

British authorities made sure to publicise that Iraq's departure had been primarily driven by the specific political context of Iraq rather than the costs of staying within the sterling area.[80] Upon departure, Iraq lost preferential treatment for its imports to the UK and was given instead the most favorable treatment accorded to countries outside the sterling area, facing new import controls. It also became subjected to exchange controls applicable to countries outside the area, as described above.[81] However, by the end of August 1959, they had managed to increase their gold reserves by 154% and their non-sterling foreign exchange reserves by 150% compared to June 1959. At the end of 1959 the central bank's reserves totaled $297 million, of which 37%, was in sterling, compared with 82 percent, a year earlier.[82]

The requested departure of Burma

The third major case of exit of the sterling area was Burma in 1966. Burma held £40 million in balances in 1960. In 1962, the Burmese negotiated some diversification of its reserves and were allowed to build up an independent gold holding of £15 million.[83] But when sterling came under pressure in 1964 and 1965, the Burmese sold virtually the whole of their sterling balances.[84] They sold over £50 million and keep only 7% of their reserves in sterling. They were also selling their forward sterling accruals against foreign currencies.[85] In addition, they introduced gold clauses into her commercial contracts - notably with the timber trade federation of the UK. The clauses stipulated that in case the gold content of the sterling changed, all payment yet to be made would be corrected so that their equivalent expressed in gold would still be paid by the purchaser. Options to terminate a contract in case of sterling devaluation were also used. These clauses were hedges against devaluation and amounted to exchange guarantees of the original price of the contracts. British authorities condemned such clauses as they consider that they had a negative effect on the general confidence in the strength of sterling.[86] The Bank of England first called for the exclusion of Burma in July 1966 for having diversified its reserves without preliminary agreement and for the

[80] Memorandum on *Kuwait, Baghdad and Bharein, [probably early June 1959]* TNA T236/4795
[81] Letter to Mr. M.E. Johnston, 18 June 1959. TNA T236/4795
[82] BIS annual report 1960, p.147.
[83] From P.L.Hogg to H.S. Lambert, Esq. 'Burma', 13 August 1964. TNA T317/460
[84] D.F. Murray to L.J.D. Wakeley, Esq., 30 September 1966. TNA FO 371/185957
[85] S.Goldman to Sir Denis Rickett, 'Burma' 16 September 1966. TNA T295/249
[86] Secret memorandum from A.K. Rawkinson to Mr. Hubback 'Burma and the Sterling Area' 15 September 1966. TNA T295/249

implementation of the gold clauses.[87] A first warning was sent to the Burmese authorities in June 1966 against these practices. The Burmese authorities did not reply to the warnings so the Chancellor of the Exchequer and the Governor of the Bank of England met with the Burmese officials in Washington on 28 of September 1966.[88] They stated that the Burmese ought to renegotiate the proportion of Burma's reserves that should be held in sterling and void any contracts that included the gold clauses to remove the 'offending' clauses. If these steps were not taken, they would be expelled from the sterling area by the end of October.

The Burmese did not wait for an official expulsion and moved forward. On 17 October 1966, the Burmese publicly announced their withdrawal from the sterling area, without informing the British authorities in advance. They declared to the local press that this move was motivated by the desire to 'secure freedom of action to take the necessary protective measures such as purchase of gold and investment in hard currencies, in the public interest, for the conservation of country's exchanges reserves obtained from exports of goods and services'.[89] Following the departure, transactions between resident of the sterling area and Burma fell under the exchange controls.

The Commonwealth office requested from the British High Commissions that the fact that sterling was under pressure should not be mentioned in association with the Burmese departure but rather that there were 'rules of the club which each country is expected to observe'.[90] Four days later, *The Economist* commented the departure stating that 'Repeated warnings from London that Burma could not reasonably expect to enjoy the privileges of membership in the sterling club if it did not observe the rules, cut little ice. [...] So, pushed, Burma opted out. It was this or expulsion.'[91]

The special case of Rhodesia

The last case of expulsion from the sterling area was Rhodesia, a different scenario from the three previously discussed. Rhodesia unilaterally declared its independence from the UK in November 1965. The departure of Rhodesia from the sterling area was not driven by monetary issues, but came with the set of the economic sanctions imposed by the UK. On 12 November 1965, 24 hours after the declaration of

[87] J.Morse to Rickett, 'Burma' 20 July 1966. TNA T317/460.
[88] Telegram n°289, from Foreign Office to Rangoon, 7 October 1966.
[89] Telegram n°252 from Rangoon to Foreign Office, 18 October 1966. TNA FO371/185957.
[90] Confidential telegram from The Commonwealth office to the British High Commissions, 18 October 1966. TNA T317/460.
[91] 'Sterling Are, One Down...' *The Economist,* 22 October 1966.

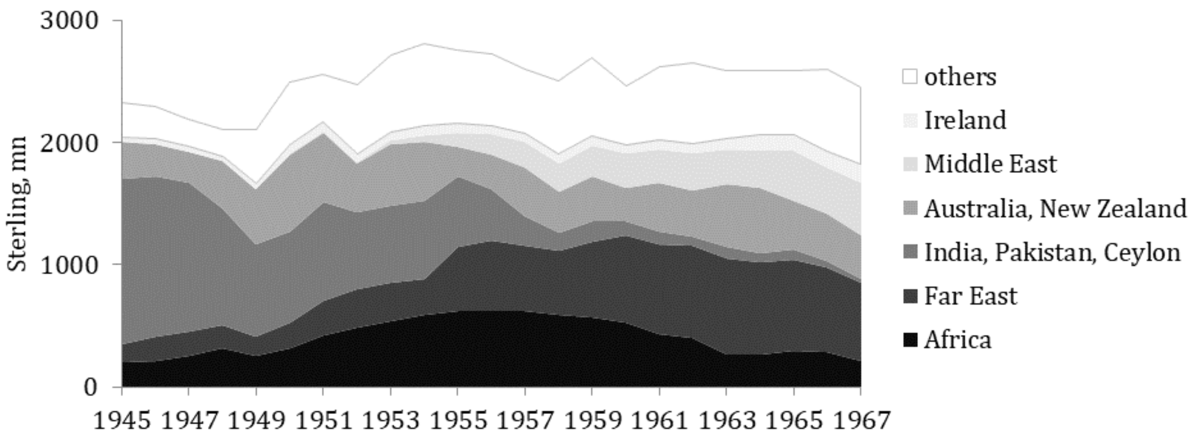
independence, the British authorities imposed punitive exchange control measures. These measures consisted in restrictions to dealing in Rhodesian pounds, the freezing of accounts of residents of Rhodesia, limits in settlements of exports to Rhodesia, freezing of transactions of securities payable in Rhodesian pounds, restricting on transactions in gold and Treasury bills with Rhodesia and freezing of any new credit line or loan or overdraft to Rhodesia.[92] British authorities also made sure that sterling area countries imposed the same controls and suspended payment transactions with Rhodesia.[93]

This arsenal of measures was unique and associated with the Unilateral Declaration of Independence. The implementation of strong exchange controls demonstrated the credibility of monetary sanctions available to British authorities even when sterling was officially convertible outside of the sterling area.

Voicing concerns and challenging sterling area membership

Newly independent territories were eager to diversify their reserves. After their independence in 1947, India and Pakistan gradually liquidated their reserves through the partition, the payments of British imports and pension capitalization.[94] Holdings of sterling increased within the colonies in Africa and countries of the British informal empire of the Far East and the Middle East. African colonies also reduced their sterling holdings upon independence, between 1957 and 1965. Figure 5 illustrated the transfers of sterling holdings within the area.

Figure 5: Distribution of official sterling liabilities within the sterling area.



Source: Author's dataset, see text.

[92] Telegram n°2677 from Commonwealth relations office to Ottawa, 11 November 1965. TNA T326/439

[93] Telegram n°2937 from Commonwealth relations office to Canberra and to certain other posts, 11 November 1965. TNA T326/439

[94] Abreu (2017), p.596.

Sterling balances held in India amounted to £1,321 million by the end of 1945.[95] With the independence of the country, India was faced with expulsion on several occasions. Financial talks in 1947 and 1948 were difficult as India was pressing for a release of some blocked sterling into dollars and British authorities considering excluding India from the sterling area to prevent such conversion. Exclusion was eventually ruled out as Indian exports were reportedly essential to British and Overseas sterling area countries. An agreement was reached in 1948, which according to Abreu (2017) permitted "releases in 1948–51 [amounting] to a total of £80 million in equal installments on 30 June 1950 and 30 June 1951. Drawing of hard currency reserves was limited to £15 million in the first year. The Indians had wanted a release of £200 million in three years, of which half was to be convertible".[96]

In the mid-fifties, India's trade and payments balances deteriorated, especially due to the material and equipment purchased in connection with their development program, the Second Five Year Plan that came into operation early in 1956.[97] Distrust towards sterling from the Indian side also grew in 1956 when the UK blocked the Egyptian sterling balances following the Suez crisis.[98] But British authorities were opposed to an acceleration of the release of Indian sterling balances, then fixed at £35million per year. They considered expelling India from the sterling area, but because sterling was de facto convertible outside the area since 1954, such a move would render convertible India's £400 million. The Bank of England's reserves could not cover this amount. The British would have to float sterling or to block Indian sterling balances. The first scenario was opposed by the US. The second was no longer an option after the Suez crisis as many countries, especially in the Persian Gulf, saw their holding of sterling as a political weapon in the hands of the UK. Further use of the blocking 'could only be regarded as the end of sterling as an international currency and would be suicidal'.[99] In the end, they negotiated that India draw $127.5 million from the IMF in March 1957 and another $72.5million in June of the same year. As India was not allowed to build-up a large independent dollar reserves, these dollars

[95] Abreu (2017), p. 586
[96] Abreu (2017), p.594.
[97] IMF annual report 1957.
[98] Telegram n°147 From the UK High Commissioner in India to the Commonwealth Relations Office, 'Independent dollar holdings', 6 February 1957. TNA T236/4760
[99] Bank of England study, to Armstrong, Esq. 'India', 8 February 1957. TNA T236/4760

were then sold to the Bank of England.[100] Despite a slower release of sterling balances than desired, Indian authorities progressively managed to trim their sterling holding through repeated trade deficits with the UK. While its gold and dollar holdings remained stable between 1957 and 1965, its sterling holdings were divided by 5, falling from £417 million in 1956 to £85 million in 1965.

The South African exception

In the case of South Africa, a departure from the sterling area was also considered several times, as discussed by Henshaw (1996). In 1947, expulsion was contemplated on the British side because large amounts of capital were flowing to South Africa. But because '[British] paramount interest in the gold mining industry must be protected', they instead negotiated an agreement in which South Africa would directly cover hard currency drawings from the central reserves by sales of the equivalent amount of gold.[101] This created a unique case in the sterling area where South Africa was permitted to quickly diversify its reserves: by 1955, sterling represented only 25% of the reserves and by 1967 it had fallen to 3%.[102] In the mid-fifties, South Africa showed some willingness to depart from the area to signal economic independence but British authorities promptly threatened to cut imports from South Africa. Because Britain was the largest market for its exports and because the Afrikaners could not afford to lose access to the London capital market while the Apartheid policies in place turned away prospective investors and creditors, South Africa remained in the sterling area and kept sending much-needed gold to the Bank of England.[103]

For the loyals: a sterling trap

The major independent players of the area, Australia and Ireland, appeared to remain loyal to sterling throughout the period but internal debates occurred and some hidden measures were taken to attempt to decrease exposure to sterling. In 1966, their sterling holdings represented 13% (respectively 5%) of the official sterling holdings of

[100] Telegram 535, Commonwealth relation office to UK High Commissioner in India, 'India's dollar holdings', 23 February 1957. TNA T236/4760

[101] Henshaw (1996), p.210

[102] Author's calculation. See data source section 2.

[103] Henshaw, (1996) p. 216 – 17.

the sterling area and 32% (respectively 13%) of the Bank of England gold and foreign exchange reserves.

Both Australian and Irish officials anticipated the 1967 devaluation of sterling, but they could not liquidate a significant share of their sterling reserves. As they were a major player on the market, their liquidation would have spurred speculation. They found themselves in the situation of a 'sterling trap' similar of the one France experienced in 1931, described by Accominotti (2009).

In Australia, the Reserve Bank voiced concerns to the Australian Treasury about the stability of sterling between 1962 and 1968, calling for greater diversification of reserves, but the Treasury declined.[104] In July 1965, the Reserve Bank (RBA) asked British authorities for a forward cover of around half of their sterling balance, which was denied.[105] The RBA subsequently called for a reduction of sterling risk 'without attracting attention'[106], which indicates their understanding that British authorities would refuse a deviation from sterling area rules. Egypt and Iraq constituted clear precedent. Similarly, in July 1967, the Governor of the RBA wrote to the Bank of England 'we are very conscious of the possible effect which a rapid change in our figures or our practices could have and we have been … very careful to avoid going so fast or so far in currency re-arrangement as to attract undue attention to the moment'.[107] Only a few weeks away from the devaluation, Australian officials wrote:

> *On pragmatic grounds an attempt by Australia to make a very large switch [away from sterling] quickly would at once become common knowledge, and would be likely to start a flood of speculation against sterling. […] we see no alternative to the present policy of changing the balance of the holdings rather more slowly than, on investment grounds, we might wish.*[108]

Kennedy (2018) recounts that 'in July 1968, the Research Department's view was still negative towards sterling and it regarded a 2 percent interest premium as insufficient compensation for the risks. It argued, 'sterling is not very attractive as a reserve asset… There is a case for holding some sterling, but not too much. That case

[104] See Kennedy (2018)

[105] Secret memorandum 'Guarantees for sterling balances' 13 October 1965. TNA PREM 13/2037.

[106] RBA: IT-a-642-1 [c], cited in Kennedy (2018) p.23.

[107] RBAA, letter from H. C. Coombs to L. O'Brien (Bank of England), 18 July 1967, cited by Schenk and Singleton (2015), p.1166.

[108] RBAA, BM-Pe-87, memo for governor by International Department, 6 Nov. 1967, cited by Schenk and Singleton (2015), p.1166.

rests largely on desires for access to capital markets and on political associations'.[109] Limited action was taken by the RBA to accumulate IMF liquidity – the IMF 'gold tranche' to diversify their reserves without touching at the pool of sterling balances held in London. Schenk and Singleton (2015) mention that tensions arose between the RBA board in Sydney and the Treasury in Canberra, with the former adopting the more aggressive stance on the issue of diversification away from sterling due to the weakness of the British economy, noting that 'one's currency only stays in demand as a reserve currency when one is a dominant trader' while the dollar appeared a more interesting investment.[110] However, for the Australian Treasury the priority was continued access to the London capital market for government borrowing, which implied following closely the sterling area rule of reserve pooling.[111]

The situation in Ireland was similar. In July 1966, the Governor of the Central Bank suggested writing to the Bank of England to express his willingness to increase the proportion of their external reserves held otherwise than in sterling up to the equivalent of £25 million by drawing from the International Monetary Fund and purchasing foreign currencies accruing to Irish commercial banks.[112] This strategy would have allowed them to diversify their portfolio without drawing on the Bank of England gold and foreign exchange reserves, even if these reserves were assertedly available to the sterling area members. But the Irish authorities knew that any move against the sterling area principles would antagonise the Bank of England, so the head of the department of Finance T.K. Whitaker replied to the Governor of the Central Bank of Ireland in the following terms:

> *The events of the past few days, while they show how precarious sterling is, also portend an unwelcome reception for any signal of waning faith on our part. It would, perhaps, be politic not to write anything that might be so interpreted [...].*
>
> *As we both fully understand, what we can (or need, in reason) do to protect ourselves against the ill-effects of a devaluation is marginal.*[113]

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[109] Kennedy (2018) p.22.

[110] RBAA, BM-Pe-95, board meeting minutes, 31 July 1968. Phillips became chairman on 22 July 1968, cited by Schenk and Singleton (2015), p. 1168.

[111] Schenk and Singleton (2015), p. 1168.

[112] Draft letter to the Bank of England, 20 July 1966, Archives of the Central Bank of Ireland, 51/65 « External Assets » part.3.

[113] Letter from T. K. Whitaker, Irish department of Finance to the Governor of the Central Bank of Ireland, 25 July 1966, Archives of the Central Bank of Ireland, 51/65 « External Assets » part.3.

In the late sixties, countries such as Malaysia understood that a devaluation was about to happen and also pressed the Bank of England for guarantees, but the Bank assuaged fears of any devaluation prospects. The 14.3% devaluation of the pound sterling in 1967[114] was not announced in advance to the sterling area and many countries felt betrayed by the Bank after this episode.[115] The devaluation caused heavy losses on a number of sterling holders, as seen in Table 3. Kuwait, whose losses represented 5,89% of its GDP, had also requested in 1964 a guarantee on the value of its balances. The request had been turned down over the promise that there would be no devaluation.[116] As an answer, Kuwait decreased its sterling exposure by limiting its pooling of gold and dollar earnings in London. This allowed to maintain its sterling balance while decreasing the share of sterling in its reserves from 80% to 62% between 1964 and 1966.

[114] On the devaluation, see also Bordo et al. (2009).
[115] Schenk (2008) p. 203, details the case of Malaysia, which lost around $80mn in reserves.
[116] Secret memorandum 'Guarantees for sterling balances' 13 October 1965. TNA PREM 13/2037.

Table 3: The impact of the 1967 sterling devaluation on the sterling area countries' reserves.

Country	Reserve losses (in % of national GDP)	Sterling share in country's official reserves	Relative weight of local sterling reserves in the total holdings of the sterling area
Brunei	34.47	99%	6%
Kuwait	5.89	67%	17%
Singapore	5.03	60%	8%
Hong Kong	3.68	100%	12%
Jordan	3.14	43%	2%
Irish republic	2.16	93%	9%
Malaysia	2.14	68%	8%
Zambia	1.75	76%	3%
Malawi	1.71	100%	1%
Kenya	1.38	80%	2%
Sierra Leone	1.19	100%	1%
Ghana	0.98	88%	2%
Uganda	0.81	89%	1%
Tanzania	0.77	65%	1%
New Zealand	0.74	83%	5%
Libya	0.70	22%	2%
Ceylon	0.45	90%	1%
Australia	0.39	55%	14%
Nigeria	0.39	63%	2%
Pakistan	0.11		1%
India	0.03	14%	2%

Source: Author's calculation using author's database and Tradehist CEPII.

After the second British application to the EEC and the 1967 devaluation, there was little hope of continuation of the sterling area. Its members tried to diversify their reserves away from of sterling by buying gold and US dollars from local banks, on the Euromarket and by reducing the pooling of their gold and dollars reserves. The Irish head of the department of Finance notably stated that sterling had become 'less valuable as an international currency'.[117] They rapidly whittled their sterling holdings from £123 million in April 1968 down to £85 million at the end of August 1968,

[117] External assets, points made by directors at Board minute, 31 January 1968. Archives of the Central Bank of Ireland, 51/65 « External Assets » part.4.

investing mostly in gold and to a lesser extend in dollars; the share of sterling in their portfolio thus decreased from 77.3 to 60%.[118] As such move was happening throughout most of sterling area countries, the Bank of England reviewed its main options: threats of exclusion, stronger exchange controls, blocking, providing an exchange guarantee or asking for liquidity support from partnering central banks in the Group of 10 (G10).

> *Traders and bankers are reluctant to continue holding sterling […] we must be prepared to use all our powers of persuasion, […] to discourage them. In some cases, it may be necessary to consider […] a reduction in economic aid. Threatening to exclude offending countries from the Sterling Area would be unproductive; it would probably suit them very well and lead to other application to withdraw. Imposing Exchange Control […] would precipitate such applications. Blocking would be equally dangerous unless it were universal and amounted to a moratorium on our debts. […].*[119]

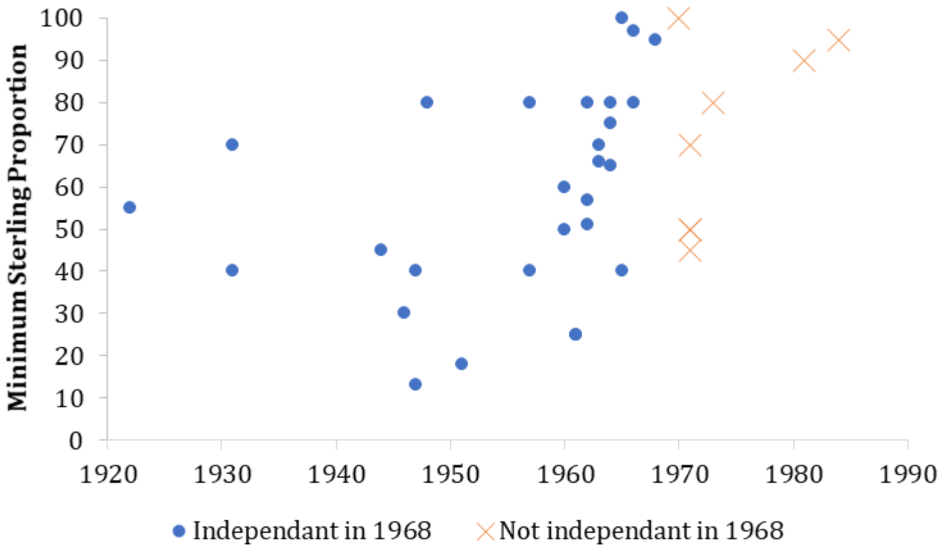
Eventually, UK officials asked for international support from the G10 and the IMF. Schenk (2010) provides a detailed account of the rescue operation which was sealed in September 1968. Under the Basle Agreement, the G10 central banks agreed to provide a safety net line of credit of $2 billion on which the Bank of England could draw to offset declines in its central reserves due to the diversification of overseas-held sterling reserves. In exchange, they insisted that the United Kingdom negotiate bilateral Sterling Agreements with sterling holders to keep a minimum proportion of their reserves in sterling against a guarantee of the US dollar value of 90 per cent of each of these countries' official sterling reserves so long as the minimum sterling proportions were met. Countries could break the agreement and diversify, but they would lose the US dollar exchange guarantee.[120] The agreement also included a guarantee to maintain, at least to a degree, the sterling area's privileged access to British capital exports.[121]

Minimum proportions of sterling (MSP) were negotiated bilaterally. For example; New Zealand was offered an MSP of 80% which was perceived as unacceptable for it would penalise New Zealand for having 'played by the rules' while other sterling area countries have been diversifying their reserves as rapidly as was

[118] External reserves of legal tender note fund and general fund, market value, circulated to Directors at meeting on 28 August 1968. Archives of the Central Bank of Ireland, 51/65 « External Assets » part.5.
[119] Sterling area working party, conclusions, draft 09.01.1968. BoE Archives, OV44/116.
[120] See Schenk (2010) p.273.
[121] See Cohen (1971) p.85.

feasible.[122] New Zealand eventually secured an MSP of 70% while Australia managed to get away with 40% and Ireland which had more than 75% of its reserve in sterling in early 1968 got 55%. The outcomes of the negotiations were uneven, as displayed in figure 6, colonies and recent newly independent countries receiving the highest MSP while developed sterling area countries were allowed to diversify more.

Figure 6: Minimum sterling proportion of sterling area countries by year of independence.



Source: BoE Archives,OV44/116

The MSP agreement succeeded in stopping the run on sterling by sterling area countries. Cohen (1971) argues that the MSP were 'a kind of ransom paid by Britain to keep the sterling system going'[123] while Schenk and Singleton (2015) state that sterling holders 'were eventually rewarded with a dollar value guarantee for their official sterling reserves.'[124] In my view, the MSP agreements worked as a form of 'acceptable freeze' on sterling balances to allow for a continuation of the sterling area. This agreement constituted another step limiting the diversification of the reserves of sterling area countries. The British had broken the confidence contract on the value of the pound sterling with the devaluation. The 'word of mouth' agreement that instituted the good practice of reserve pooling in the sterling area was gone. Gaps in the exchange control fence through the dollar markets of Hong Kong and Kuwait allowed evasions of sterling and prevented the UK from stopping the run on sterling.[125] The price of the

[122] Archives New Zealand, Wellington, AALR 873, Acc.W3158/84, 61/4/2/1, pt. 1, memo from N. R. Davis to minister of finance, 19 July 1968, p. 3. cited by Schenk and Singleton (2015), p.1169.

[123] Cohen (1971), p.85.

[124] Schenk and Singleton (2015) p.1166.

[125] On the Hong Kong gap, see Schenk (1994b).

guarantee was needed to convince sterling area countries to collectively give up on diversification. Without an agreement, the sterling area countries would have kept slimming down their holdings and the UK would have needed to devalue again.

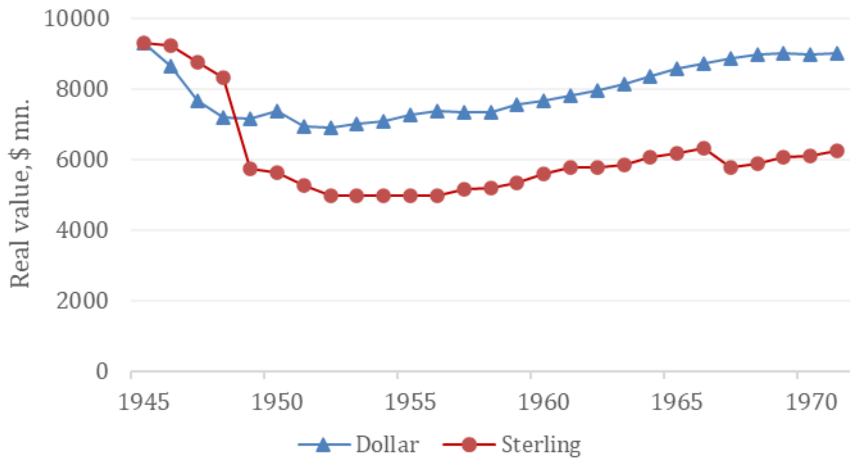
GAINS AND LOSSES IN THE LONG LIFE OF THE ZOMBIE

The sedation of sterling holders

By 1966 already, British policymakers knew that they would soon face a sterling crisis due to the low level of UK reserves compared to sterling balances, as 'the sterling area [was] a bank with insufficient assets to meet its deposit liabilities'.[126] They had considered offering a guarantee to sterling holders in 1965 but had decided that the UK rates of interest constituted a compensation for the risks of devaluation and that a guarantee to all sterling area holdings would be too costly in case of a devaluation.[127] The solution they reached was 'to slow down the erosion [of the sterling area] to a manageable pace' in other words 'the sedation of holders of sterling'.[128] The comparison of an investment in dollars or sterling shows that choosing sterling was not a profitable choice because of devaluations and the higher inflation and despite the relatively higher interest rates in the UK. To illustrate this, I computed a measure of the evolution of the real value of the total sterling balances sterling balances in 1945 invested in 1946 in Treasury bills from the UK and the US, taking into account inflation differentials and the two devaluations of sterling. I used the formula on foreign exchange returns from Ben-Bassat (1980). Figure 4 displays the result of such analysis. If sterling balances would have convertible after the war, sterling area countries could have made a more profitable investment by converting them into US dollar.

Figure 4: Evolution of an investment in dollar and sterling Treasury Bills.

[126] "The Sterling Area", S.W.P. memorandum, 29 July 1966, BoE Archives, OV44/33.
[127] Secret memorandum 'Guarantees for sterling balances' 13 October 1965. TNA PREM 13/2037.
[128] Letter to the chief of overseas, « The Sterling Area. "S.W.P. memorandum of 29 July 1966). 3 August 1966, BoE Archives, OV44/33.



Note: Author's calculation.

Source: For the Bank of England's rate, *A millennium of macroeconomic data for the UK,* Bank of England. For the Fed rates, FRED website, Federal Reserve Bank of St. Louis. For inflation, the Jordà-Schularick-Taylor Macrohistory Database.

British and US gains: sterling over evaluation and the international monetary system

The persistence of the sterling area after the immediate postwar years mostly benefited Britain and the City. The area worked as a mechanism to restrict sterling conversion into dollar and gold when British reserves were low, firstly after the sterling crisis of 1930-1 and then after the Second World War. Most of the external sterling balances were held in the sterling area and formed "an important part of the inherent weakness of sterling".[129] In the late thirties, the UK had managed to accumulate enough gold and foreign exchange to cover 100% of its liabilities[130] but the British Treasury was never able to durably replenish their reserves after the war and struggled to maintain a credible coverage of its liabilities. Except in the immediate post devaluation period, the Bank of England reserves represented less than 50% of UK liabilities.[131] On the contrary, the large western economies had a large coverage of their foreign liabilities by their reserves.[132]

[129] "The Working of the balances of payments". Sterling Area working party, 30 October 1956. BoE archives OV44/33.
[130] "Problems of the Sterling Area, report by a working party of the Treasury and the Bank of England", 25 June 1956. BoE Archives OV44/33.
[131] Source: Bank of England, Statistical Abstract, n°1, 1970.
[132] See IFS, indicator 16C and from the BoE Statistical Abstract, n°1, 1970.

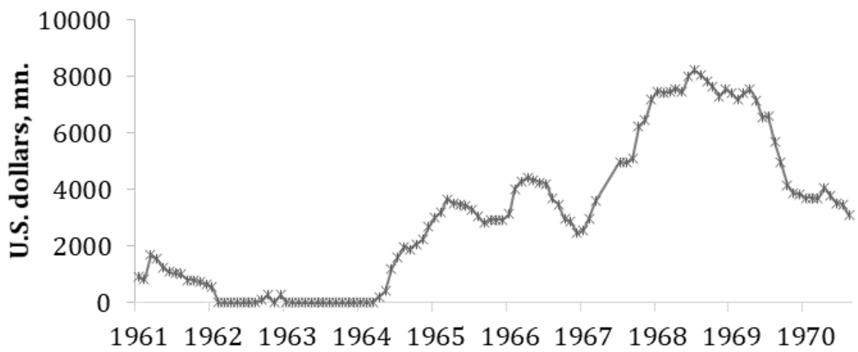
From the immediate postwar year, the UK struggled with sterling crises. During a failed five weeks attempt in 1947 to restore the dollar convertibility of sterling, there was a run on a Bank of England and $175 million were drawn from the reserves, causing the return to the wartime measure of suspension of sterling convertibility.[133] British authorities blocked the sterling balances of sterling area countries and imposed exchange controls. These controls aimed at limiting capital outflows to the non-sterling world in order to protect the limited gold and foreign exchange reserves of the Bank of England. The Bank of England and the US were both opposed to a float of the pound.

The Bank also resorted to window dressing of its foreign exchange reserves in the sixties to hide its difficulties and avoiding triggering a confidence crisis.[134] It organised short-term swaps with the Federal Reserve to artificially inflate its reserves just before publishing the level of the reserves in the press and in its Quarterly Bulletins. The Bank declared up to £.5 billion to the Treasury in May 1968 to hide reserve losses.[135]

The Bank of England relied on numerous international liquidity support programs throughout the period to resist the drain on its gold and dollar reserves caused by UK deficit and the important sterling balances held overseas. A $5 billion loan was first negotiated with the United States and Canada after the war, followed by $89 million of the Marshall Aid in 1948.[136] The 1956 Suez crisis precipitated a $650 million drain on British reserves, forcing the British to negotiate a $1.8 billion stand-by agreement with the IMF and the US to reassure markets. Further agreements were negotiated during the sixties with the IMF, the BIS and Western European central banks to permit gold and foreign exchange liquidity withdrawals when needed. From 1965, the Bank of England had to draw regularly on international liquidity, as seen in Figure 8.

Figure 8: International liquidity assistance used by the Bank of England

[133] See Schenk (2010), chapter 2.
[134] This is notably described by Capie (2010) and Naef (2020).
[135] See Naef (2020).
[136] Eichengreen and Cairncross (1983), p.114.



Note: This figure reports the use of the international facilities made available to the Bank of England since the time of the first Basle agreement of March 1961.

Source: archives of the Bank of International Settlement, LAR2 F02

The existence of the sterling area and the authoritative enforcement of its principles by British authorities allowed British authorities to maintain this unique setting of sterling in the Bretton Woods international monetary system. Had the sterling balances been freed earlier, the Bank of England would not have been able to cope with the inflow of sterling and would have been forced to devaluate the pound sterling. In the words of UK officials, capital and exchange controls aimed at supporting the international use of sterling to 'give [the UK] command of resources' and help them 'remain a first-class power'.[137] The pooled reserves of sterling area countries also helped, according the Bank's officials to finance the UK's own deficits and a continuing expansion of its expenditure.[138]

By being forced to use sterling as their main reserve, the sterling area also redounded to the prosperity of the City of London.[139] British banks and insurance interests benefited from the fact that sterling was used in invoicing 25 to 30% of international trade.[140] The Bank of England considered that relieving the UK of 'the burden of an international currency' would be 'at the expense of destroying the financial mechanism of the City. [...] Obviously this could not be the Bank's answer. The U.K. economy needs the City's financial and commercial acumen [...]. Trade still

[137] Letter to the Deputy Governor, 8 February 1955. BoE Archives, OV44_53.
[138] « The Sterling Area", S.W.P. memorandum, 29 July 1966, BoE Archives, OV44/33.
[139] See Krozewski (1993) and Schenk (2010) pp. 212-219.
[140] Susan Strange, Sterling study group paper. Royal Institute of International Affairs. 5 December 1966. TNA T312/1648.

follows the flag (or the £).'[141] But the reality was that the flag was mostly gone, trade was mostly gone but sterling balances persisted.

The US allowed the persistence of the sterling area after WWII, even if exchange controls and commercial preferences were against the Bretton Woods principles, as they perceived several advantages in it. In the late 40s, they feared that the termination of the sterling area would weaken the link between some of its countries and the western world. In a context of developing cold war, they perceived the currency area as a mechanism to prevent its countries from turning toward the Eastern bloc.[142] From the early sixties onward, they supported the maintain of the sterling balances as their conversion from sterling into dollar would increase the pressure on the Fed's reserves, already pressurized as external dollar liabilities became larger than the US gold stock from 1961 onward. Moreover, the US authorities were committed to fixed exchange rate stability in the monetary system: sterling was seen as the first line of defense for the dollar.[143] Indeed, sterling's devaluation in 1967 spurred speculation on the dollar parity with gold, resulting in the closure of the US gold window in 1969.

CONCLUSION

This paper provides a new view on the place of sterling in the international monetary system during the Bretton Woods period and concludes that it was a zombie international currency. With a new dataset on the use of sterling as foreign exchange reserve at country-level, I provide quantitative evidence that sterling was a reserve currency only inside the sterling area during this period. The UK did not have the economic fundamentals of an issuer of international currency. Countries who could access alternative foreign exchange reserves, such as Western Europe or Iraq, chose to not hold sterling. I show that trade relation with the UK had a low impact of the composition of sterling area countries reserves compared to European countries' reserves. Before the Second World War the sterling system was based on the carrot of a strong, highly-desired central currency, and on the stick of imperial power and colonial government. After 1945, as war debts crippled the Bank of England, sterling was no longer desired, but the stick remained. The sterling area constituted a captive market in which countries were dragooned into keeping their foreign currency in

[141] To Mr Rootham, « Working party on the future of the sterling area", draft (6 October 1966). BoE Archives, OV44/33.
[142] See Cairncross and Eichengreen, 1983.
[143] See Bordo et al. (2019).

sterling. The design of the area aiming at protecting the fragile reserves of the Bank of England prevented the liquidation of the sterling balances held in the area. British authorities used threats, propaganda and sanctions to curtail the divestment of sterling assets. They devised high switching out costs which explain most of the permanence of the balances. The expulsions of Egypt from the area and the departure of Iraq and Burma were a result of British opposition to economically rational motives: diversification and insurance against valuation risk. The countries that remained in the area faced portfolio losses. When commercial and exchange controls sanctions became less credible due to the trade liberalisation policies and the development of Euromarkets, the arbitration between free-riding the rules of the area to decrease own's exposure to sterling and the sanctions was concluded by a generalisation of free-riding and the erosion of the regional role of sterling. Only international intervention through the Basle agreement compelled the British authorities to provide a guarantee in exchange of the limitation of the divestment out of sterling.

A lesson for current policy from this research is the need for an international lender of last resort. Because the IMF was not equipped to deal with postwar monetary disorders, the sterling area was maintained as a way of managing the UK war debts. But this allowed the UK to delay the necessary adjustments needed to liquidate sterling balances and transferred most adjustments costs to sterling holders. Instead, an international lender of last resort could have lent liquidity to the UK in the immediate postwar years to liquidate sterling balances in the fifties, through an asset management vehicle, and allow for a full return of sterling convertibility in the late fifties. Such a bail-out of the Bank of England might have allowed it to clear its balance sheets of war debts and offered a different trajectory for the pound sterling for the following decades.

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APPENDICES

Appendix 1: Measuring trade intensity

To measure trade intensity between two countries, I use the Koijma index presented by Drysdale and Garnaut (1982):

$$I_{i,j} = (\frac{X_{ij}}{Xi})/(\frac{M_j}{M_w - Mi})$$

Where: X_{ij} is country i's exports to country j

X_i is i's total exports

M_j is j's total imports,

M_i is i's total imports, and

M_w is total world imports.

M_i is subtracted from $M_w$in the above expression because a country cannot export goods to itself.

Appendix 2: Robustness table

Table 4: Robustness checks

	(1) nominal GDP	(2) Popula-tion	(3) exports	(4) distanc e cities	(5) distance sea	(6) Common language
Sterling area membership	0.76***	0.77***	0.72***	0.76***	0.77***	0.79***
	0.00	0.00	0.00	0.00	0.00	0.00
trade intensity w/UK	0.05***	0.05***		0.05***	0.05***	0.06***
	0.00	0.01		0.01	0.00	0.01
trade * Sterling area membership	-0.04**	-0.04*		-0.04*	-0.05**	-0.04**
	0.05	0.05		0.06	0.02	0.03
GDP	0.00					
	0.36					
GDP * Sterling area membership	-0.02***					
	0.00					
population		0.00				
		0.56				
Population * Sterling area membership		-0.02**				
		0.03				
GDP ratio			0.00	0.03	0.03	0.04
			0.85	0.39	0.39	0.30
GDP ratio * Sterling area membership			- 0.86***	- 0.74***	- 0.75***	-0.72***
			0.00	0.00	0.00	0.00
Export ratio			0.56***			
			0.01			
Export ratio * Sterling area membership			-0.37*			
			0.10			
distance main cities		0.00		0.00*		
		0.45		0.09		
Common language					0.11	
					0.20	
Distance by sea						0.00
						0.43
Controls						
Weighted Distance	Yes	No	Yes	No	No	No
Year Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Colony	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.900	0.902	0.892	0.905	0.905	0.901
Observations	379	419	306	395	395	395

Note: the dependent variable is the share of sterling in reserves of monetary authorities of sterling area countries. A constant is always included but not shown here. All errors are clustered at the country level. The variable controlling for distance measures the population-weighted-great-circle distance, in km. The *distance between the main cities is measured by the great-circle distance between main cities, in km. The distance by sea is measured by the shortest bilateral sea distance, in km. The common language is a dummy equal to one if at least one language is spoken by more than 9% of the population in both countries.* * $p<0.1$, ** $p<0.05$, *** $p<0.01$.