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

Maylis Avaro
Department of History - University of Pennsylvania

Forthcoming, *Journal of Economic History*, 2024

Abstract: This paper examines the international role of sterling during the Bretton Woods era and argues that it was not a competitor to the US dollar. I construct a novel dataset to measure the reserve role of sterling in Europe and sterling area countries. 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 how British authorities imposed the exchange controls, commercial threats and economic sanctions on sterling area countries to compel them to keep their foreign exchange reserves in sterling.

[1] I am extremely grateful to Marc Flandreau, Vincent Bignon, Rui Esteves and Cedric Tille for their invaluable guidance and support throughout this project. Eric Hilt, Dan Bogart and four anonymous referees provided helpful feedbacks and suggestions. I also thank for their valuable comments Carolyn Biltoft, Michael Bordo, Edoardo Chiarotti, Alejandra Irigoin, Clemens Jobst, Jean Lacroix, Pierre-Guillaume Méon, Eric Monnet, Nathalie Monnet, Alain Naef, Kim Oosterlinck, Catherine Schenk, Pierre Sicsic, Rebecca Stuart as well as participants to the seminars in LSE, Oxford Center for Economic and Social History, Paris School of Economics, Princeton University, Rutgers University, Université Libre de Bruxelles, and Wirtschaftsuniversität Wien, as well as participants of the 2019 EHA annual congress and AFSE conference, 2021 EHS conference and 2022 ASSA and ADRES meetings. I gratefully acknowledge financial support from the Swiss National Research Foundation (grants P1GEP1-187828 and P2GEP1_195231), the Economic History Association, Macrohist INET, and the mission historique de la Banque de France. This research could not have been done without the help of wonderful archivists who are thanked for their fantastic work. All errors remain mine.

"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]

The term "zombie bank" refers to a bank that cannot continue operating without some form of government assistance, such as bailout, credit support, or other guarantees.[3] I define a "zombie international currency" as a currency that requires the intervention of the issuing country; in the form of exchange controls and diplomatic pressure such as threat or economic sanctions, to continue being used internationally. International holders of zombie currencies are comparable to the creditors of zombie banks: They try to decrease their exposure to the zombie to avoid potential losses. This paper argues that sterling was a zombie international currency during the Bretton Woods era.[4]

Some scholars have claimed that even before the outbreak of WWII, the sterling had already lost its international influence, which benefited the US dollar.[5] Other scholars, such as Eichengreen (2018, 2019) and Schenk (2010), have argued that after 1945, the pound sterling and the US dollar were the two main international currencies of the multipolar monetary system. Eichengreen and Schenk also state that the share of global foreign exchange reserves held in sterling gradually decreased during the 1950s and 1960s as a result of the successful collective management of foreign sterling liabilities. Most of these liabilities were the result of war debts and were concentrated among the countries of the sterling area, which was a monetary zone organized around the pound sterling. The sterling area appeared in 1939, as part of the war effort, when Britain introduced restrictions on international payments around the countries that had been maintaining a fixed relationship with sterling since the 1931 devaluation.

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

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

[4] The analysis of the paper focuses on the period of the Bretton Woods system as this provides a relatively homogeneous framework to study the evolution of the international role of sterling.

[5] Eichengreen and Flandreau (2009, 2010) identify the overtaking of sterling by the dollar during and immediately after WWI. Gardner (2014) describes that in Liberia, sterling was replaced by the dollar in the mid-1930s.

Sterling area members were characterized by having constant exchange rate with the pound sterling and by holding their foreign exchange reserves largely in the form of sterling balances in London.[6] In exchange, they enjoyed limited capital controls for transactions within the area.

When postwar attempts to restore the convertibility of sterling into dollars failed, Britain formalized the wartime capital controls around the sterling area through the Exchange Control Act of 1947.[7] At that point, the sterling area covered the countries of the Commonwealth, except Canada, along with the British colonies, protectorates, and additional nations such as Egypt, Sudan, Iraq, Iceland, the Faroe Islands and Transjordan. British authorities blocked the sterling liabilities of these countries and used exchange controls to limit capital outflows to the non-sterling world. The area disappeared formally in 1979 with the abolition of British exchange controls.[8]

Interpretations diverge as to why countries remained in the sterling area and kept their reserves in sterling. Shenk states 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"[9] and that members of the system pursued their "perceived national self-interest".[10] Others have argued that the British authorities managed colonial sterling holdings for the benefit of Britain rather than for that of the colonies.[11] Hinds (1991) and Krozewski (1996, 1997, 2001) have demonstrated that Britain pressured the Gold Coast countries and Ghana to remain in the sterling area after achieving independence, as the British wanted to prevent the liquidation of their sterling holdings, which that would affect the dollar convertibility of sterling. By contrast, Schenk (1996, 2010) describes that, from the mid-1950s until the 1967 sterling devaluation, foreign sterling liabilities were simply "a niggling potential discomfort" for British monetary authorities.[12] Some case studies and surveys mention the use of "capital controls, moral suasion and geopolitical influence" by Britain.[13] However, there is a lack of

[6] Cohen (1971), Schenk (2013). or Kennedy (2018a) for a survey of the historical literature on the sterling area.

[7] The 1947 attempt to restore the dollar convertibility of sterling resulted in a run on the Bank of England and $175 million were withdrawn from the reserves, see Schenk (2010), chapter 2.

[8] De Bromhead et al. (2023).

[9] Schenk (2018), p.6.

[10] Schenk and Singleton (2015), p. 1160. See also Schenk (1996).

[11] Narsey (2016) and Nyamunda (2017).

[12] Schenk (1996) p.872.

[13] Eichengreen et al. (2018).

analysis within the literature of the systematic coercion exercised by British authorities on sterling area countries in light of the weakness of the British economy. I provide a comprehensive analysis of the British threats and sanctions aimed at deterring the liquidation of sterling holdings by members of the sterling area.

Using both quantitative analysis and archival research of recently declassified documentation, I offer a new narrative on the decline of the pound sterling: From 1945 onward, sterling survived as an international reserve currency only in the captive market of the sterling area. European countries rapidly reduced the share of sterling within their foreign reserve portfolio after the war. To sustain the international status of sterling, the British authorities prevented the liquidation of sterling debts held by countries in the sterling area. Sterling area countries could not freely diversify their foreign exchange reserves, as British authorities systematically threatened to apply commercial and exchange controls, sanctions, and freeze the assets of those who attempted to do so without approval from London. British authorities distorted the international distribution of sterling through international blackmail, propaganda, and economic sanctions to limit the decline of sterling. I demonstrate that, when a country managed to leave the sterling area, it rapidly rebalanced its reserve portfolio outside of sterling while the remaining countries faced lower returns on their reserve portfolios. Thus, I present an alternative to the carrot-and-stick metaphor: After 1945, the carrot ceased to attract sterling area countries, but the stick became a sledgehammer.

This challenges the view of the Bretton Woods era as a multipolar monetary world.[14] Sterling's key currency role ended during the interwar period. After WWII, sterling could not compete with the dollar on the international stage, as its presence in global foreign exchange reserves was secured only by artificial barriers built by British monetary authorities around the sterling area. In countries free from British influence, the dollar was the sole key international reserve currency.

METHOD AND SOURCES

In this paper, I focus on the reserve role of sterling and study the decision of central banks to hold their reserves in the form of pounds sterling. This approach is standard in the historical literature

[14] Eichengreen et al. (2018): Eichengreen (2019).

on international currencies, but I am the first to apply it to the Bretton Woods era using a large sample of country-level data.[15]

During the Bretton Woods era, countries' foreign exchange reserves primarily comprised foreign deposits and first-class government securities, similar to previous periods. Due to the sensitivity of this data, neither central banks nor national governments published the composition of their foreign exchange reserves. They conveyed the total value of their gold and foreign currency reserves to the International Monetary Fund (IMF), which then published the data.[16] Relying on IMF data, Schenk and Singleton (2015) and Eichengreen et al. (2018) described a progressive decline of the pound sterling at the world level but were unable to measure the individual choices of countries regarding the currency composition of their reserves.

To analyze the international use of sterling as reserve currency, I compare the share of sterling in the reserves of European and sterling area central banks. I collected data for nine Western European countries using local central bank archives.[17] I utilized archival documents from the Bank of International Settlement (BIS), the Bank of England and Her Majesty's Treasury to reconstruct the historical proportion of sterling in the reserves of the majority of the countries of the sterling area.[18] My sample consists of twenty-two sterling-area countries whose reserves represented, on average, 73% of all sterling holdings of the sterling area.[19]

THE USE OF STERLING AS A RESERVE CURRENCY

A new perspective from country-level data

Figure 1 displays the share of sterling within official reserves of the sterling area countries and European countries.

Figure 1: Share of sterling in reserves of central banks (gold + foreign exchange)

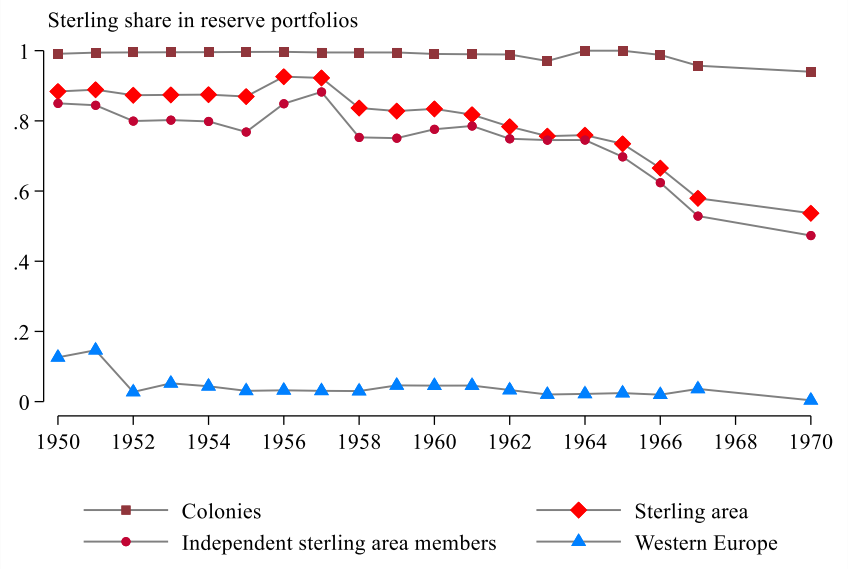
[15] Chinn and Frankel (2008); Eichengreen and Flandreau (2009).

[16] For a review of the literature on reserves holding during Bretton Woods, see Monnet and Puy (2021).

[17] The nine European countries are Austria, Belgium, France, Germany, Italy, Norway, Portugal, Spain, and Switzerland.

[18] Online Appendix 5 provides a description of the archives consulted.

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



Source: Author's dataset, see text.

Note: The numerator is the volume of sterling holdings and the denominator is the sum of all gold and foreign exchange reserves. I aggregate reserve portfolios by group of countries and calculate the sterling share for each group. The line for the sterling area represents the average share of sterling for all members of the sterling area. This group is also divided among the British colonies and the independent sterling area members.

From 1952 onward, sterling accounted for less than 10% of the reserves of Western European countries; however, in sterling area countries, it accounted for more than 60% until 1967. This picture contrasts with the global decline of sterling's relative position in the 1950s and 1960s. Sterling was the main reserve currency of the sterling area throughout these decades. In Europe, by the early 1950s, the shift away from sterling was complete and sterling did not re-emerge as an attractive asset in later years. A comparison of sovereign nations of the sterling area and British colonies indicates that starting in the mid-1960s, countries began to diversify their reserves away from sterling. This suggests that colonies would have divested from sterling, had they been afforded the freedom to do so. Sterling area countries diversified their portfolios by accumulating new reserves and not by converting their sterling holdings into gold or other reserve currencies.[20]

This picture is consistent with the fact that, according to the Bretton Wood agreements of 1944, sterling no longer played a pivotal reserve 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

[20] See figure A.1 in Online Appendix 6.

guaranteed the convertibility of their currency in dollar only. This pyramidal system, with the dollar and gold at the top, left sterling with little opportunity to function as an international currency.

A zombie international currency

The existing literature on the theory of demand for reserve currencies reveals several potential causes for the heterogeneity of the distribution of foreign holding of sterling.[21] Some studies point to the specific characteristics of Britain such as the credibility of its monetary policies, the size of its economy and its financial depth. Other potential drivers include trade relations and military alliances between Britain and sterling-holding countries.

Previous macroeconomic and historical studies such as those by Bean and Crafts (1995) and Broadberry and Crafts (1996), highlight the hardships plaguing the UK economy during the Bretton Woods era. While the United Kingdom boasted strong macroeconomic fundamentals in the nineteenth century, the two world wars transformed Britain from the world's largest creditor into the world's largest international debtor.[22] At the end of 1945, the sterling liabilities of the United Kingdom totaled £3.7 billion while British gold and dollar reserves stood at only £620 million.[23] Only in 1954 were the war restrictions on transfers of sterling for current or capital purposes lifted for residents of forty-three countries outside the sterling and dollar areas.[24] Convertibility was fully restored in 1961 for non-sterling area countries and in 1972 for sterling area countries.[25] Despite these heavy restrictions, the money markets had little faith in the pound sterling, forcing the Bank of England to devalue the currency twice in response to market pressure, first in 1949 and then again in 1967.

The United Kingdom did not display the economic strength expected of an international currency issuer and by the mid-1950s, it had lost its leading role in Western European economies. [26] Between 1950 and 1970, its GDP per capita grew by an average of 7%, which was slower than the

[21] See Frankel (2012) and Eichengreen et al. (2018) for recent surveys of the literature.

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

[23] Monetary and Economic Department, *The Sterling Area,* BIS, Basle, Jan. 1953. p.69-70. Federal Reserve Archives [hereafter Fed Archives], 563212. The report also states 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'.

[24] International Monetary Fund (1954), Schenk (1994).

[25] 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].

[26] See Penn World Table, output-based real GDP.

average growth of 11% experienced by most Western countries.[27] Britain was also a declining trade power during this period: Even though its exports increased during this period, its share in world trade decreased steadily from more than 10% in 1950 to 6.2% in 1970. Britain suffered from payments deficits due to trade and current account imbalances. Between 1945 and 1971, current account deficits occurred more than half of all years and trade deficits were recorded almost every year.[28]

The postwar period was also characterized by the breakdown of the British Empire. Twenty-nine countries of the sterling area gained independence between 1945 and 1971. The 1956 Suez crisis, along with the withdrawal from Greece in 1947, brought to the forefront the dwindling military power of Britain. To defend the pound sterling after the Suez crisis, Prime Minister Harold Macmillan had to cut defense expenditures and reconsider Britain's position as a world power.[29] The lasting difficulties faced by Britain, including recurring public deficits, were reflected in financial markets. This was evident in the significant increase in yields on British government bonds from 3% to 9% between 1950 and 1970.[30] Interest rates on British long-term government bonds were on average 40% higher than those of the US for the period 1950-1971.[31]

The City of London, Britain's financial center, began facing increasing competition from New York, starting in the interwar period.[32] Throughout the 1930s, the new capital issues for British colonies declined.[33] The implicit imperial guarantee that colonies would benefit from choosing to issue debt in London became less valuable after Britain's departure from the gold standard in 1931.[34] After WWII, New York became the world financial center while in London, the domestic money market was tight and tensions arose between the City and the Treasury which imposed capital controls on international

[27] Number calculated on a sample covering Austria, Belgium, Switzerland, France, Italy, and West Germany. CEPII, *TRADHIST*.

[28] See "A millennium of macroeconomic data for the United Kingdom", Bank of England, built originally by Ryland, Hills and Dimsdale (2010).

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

[30] "A millennium of macroeconomic data for the United Kingdom", Bank of England, built originally by Ryland, Hills and Dimsdale (2010).

[31] International Financial Statistics, IMF, section "interest rates", series "government bonds".

[32] Eichengreen and Flandreau (2012).

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

[34] Degive and Oosterlinck (2019).

transactions.[35] The emergence of the London Eurodollar market increased the significance of the US dollar in international finance, but it did not restore the international prominence of the pound sterling.[36]

These macroeconomic indicators pointed toward the high risks of holding sterling as a reserve currency. Weak performances in terms of macroeconomic strength, monetary stability and international monetary transaction imbalances suggested an impending devaluation.[37] As the issuer of the pound sterling, The United Kingdom lacked the necessary credibility, size, and military power, to fully support its currency as an international reserve currency, which may explain the low share of sterling in European countries' reserves. However, these factors cannot account for the continued importance sterling within the sterling area.

Bilateral drivers of the demand for sterling: an empirical investigation

Bilateral links between Britain and sterling holders constitute alternative drivers of the persistence of sterling in the reserves of some countries. Following the literature, I examine how trade relations impacted the share of sterling in reserve portfolios.[38] Countries with stronger commercial ties with the British market should hold a larger share of sterling in their reserves to help their importers settle transactions. I also investigate the role of the relative size of the economies of the holding countries in comparison to Britain. Richer economies have more agency and opportunities to orientate the composition of their reserves toward the assets that they deem safest and most useful for their international settlements. I study whether membership in the sterling area influenced the composition of a country's reserves and the elasticity of its reserve portfolio in response to change in its relative economic size and trade relations with Britain. If sterling area countries had the freedom to manage their reserve portfolio without interference, they should have a higher share of sterling, on average, than European countries and their reserves should be equally responsive to changes in their trade relations with the United Kingdom.

[35] Schenk (1998), Atkin (2004) and Davies (2017).

[36] See Kindleberger (1973) p.294, Schenk (1998), p.232 and BIS annual reports "Capital Market: net new issues, 1960-1970).

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

[38] Eichengreen et al. (2016 and 2018) for a survey.

My sample consists of nine European countries and twenty-two sterling area countries. I run the model over the period 1954-1971, as exchange controls on sterling holdings started to be lifted for non-sterling area countries from 1954 onward. I estimate the following equation (1) in line with the existing literature on the determinants of the composition of foreign exchange reserves.[39]

$$Share_{i,t} = X_{i,t}\beta + S\_Area_{i,t}\gamma + (X_{i,t} \times S\_Area_{i,t})\eta + Z_{i,t} + colonies_{i,t} + year_t + u_{i,t} \quad (1)$$

The dependent variable $Share_{i,t}$ denotes the share of sterling holdings in the reserve portfolio of country *i* for year *t*.[40] $X_{i,t}$ is a vector of bilateral explanatory variables, including the intensity of bilateral trade with the United Kingdom, measured by an index of trade intensity (see Online Appendix 1) and the relative GDP of the holding country *i* compared with the United Kingdom's GDP. $S\_Area_{i,t}$ is a dummy interacted with the explanatory variables, coding 1 for members of the sterling area.[41] By introducing the interaction, it becomes possible to observe whether the reserve portfolios of sterling area countries were equally responsive to the factors driving the demand for reserve currencies as those of European countries. $Z_{i,t}$ is a gravity control, that uses distance to the United Kingdom weighted by population size. $Colonies_{i,t}$ is a dummy controlling whether country *i* was a British colony in year *t*. Specific controls related to Britain, such as the credibility of its monetary policy or its financial depth are not included as they are captured by the year fixed effects, denoted here by $year_t$. All errors are clustered at the country level.

To estimate this model, I matched my data on foreign exchange holdings with the Historical Bilateral Trade and Gravity Dataset (TRADHIST) which gathers bilateral nominal trade flows, country-level aggregated nominal exports and imports, nominal GDPs, and gravity controls.[42] Column 1 reports the baseline without the interactions, which are added in Column 2. Column 3 includes country fixed effects. In column 4 and 5, I use a fractional logit model fitted by the method of quasi-maximum

[39] Chinn and Frankel (2008); Chitu, Eichengreen and Mehl (2014, 2016, 2019).

[40] Sterling's share was not independent from investment decisions in other currencies. Due to limitations of my sources, I cannot observe the share of currencies other than sterling in the reserves like. dollar, deutschmark, Swiss francs, for the majority of the countries of my sample. My dependent variable is thus limited to share of sterling within reserve portfolios (gold + foreign exchange).

[41] This variable is time-invariant as data constraints limited the sample of sterling area countries to those that remained in the sterling area from 1945 to 1971, for which the Bank of England collected yearly information.

[42] Fouquin and Hugot (2016).

likelihood as my dependent variable is continuous but bounded between 0 and 1. Other commonly used variables in similar settings are inertia, the credibility of the currency issuer and its financial depth. As reserve portfolios are strongly correlated over time, I include in column 5, a variable "inertia" measuring the sterling share of the reserves in 1953. This variable is used to account for the difference in the compositions of the reserve portfolios at the beginning of the period studied.

[Table 1 about here]

The results indicate that trade relations with Britain explain part of the persistence of the international role of sterling. Countries trading more with the United Kingdom tended to have a larger share of sterling within their portfolios. However, the impact of trade for sterling area countries is consistently smaller than those for European countries. This result is consistent across specifications, however when country fixed effects are included (column 3), they absorb the effect of the trade relationship with the United Kingdom and the trade coefficients are not significant, for either European or sterling area countries. The coefficients for relative GDP are negative, indicating that when countries grew faster than the United Kingdom, they tended to rebalance their portfolio away from sterling. [43] This result suggests that sterling was not an attractive reserve currency. The coefficients are larger for sterling area countries than for European countries, indicating that this effect was stronger for the former. This result is robust against the inclusion of country fixed effects and the use of fractional logit model with inertia.

Reserve portfolios were strongly associated with their past value, which is in line with the literature. When excluding the period of limited convertibility of European currencies from the sample (see Table 1, Column 1 in Online Appendix 3), the effect of inertia is more pronounced in sterling area countries compared to European countries. This finding indicates that European countries rebalanced their portfolios more quickly than sterling area countries. Finally, the coefficients for membership of the sterling area are positive and significant. Being a member of the sterling area was associated with an average increase of fifty percentage point in the share of sterling. Membership also affected the elasticity

[43] De Bromhead et al. (2023) who analysed the demise of the sterling area in the late sixties and seventies also find that richer countries diversified from sterling earlier while countries with stronger trade links remained in the sterling area longer.

of the reserves as sterling area countries and European countries reacted differently to the drivers of sterling holdings.

These results withstand a series of robustness checks, such as excluding colonies and replacing the index of bilateral trade intensity with alternative measures of trade relationships, such as the ratio of exports to the United Kingdom on total exports and the ratio of exports to all members of the sterling area on total exports. Tables 1 and 2 in Online Appendix 3 reports the estimates of these robustness checks. Only when the trade relationship is proxied by imports from the sterling area, the odds of association between trade and the share of sterling are the same for European countries and sterling area countries. This suggests when sterling area countries increased their imports from the area, they rebalanced their portfolios toward sterling at a similar pace to that of European countries. But members of the sterling area were slower to rebalance their portfolios away from sterling when diversifying their export destinations. The results are also robust to alternative specifications, such as tobit regressions and an Arellano-Bond linear dynamic panel-data estimation.

These estimates contradict the characterization of sterling area monetary authorities as "free portfolio managers." Instead, they reveal the existence of a "sterling area effect" in the international distribution of sterling holdings, which creates a distortion similar to the "empire effect" presented by Accominotti et al. (2011). The "empire effect" describes the biased relationship between the macroeconomic fundamentals and borrowing costs for countries that belonged to the British Empire. I argue that exchange controls surrounding the sterling area distorted their reserve portfolios. The sterling area was not a free market which one could enter and leave at will because Britain threatened potential defectors with economic sanctions and asset freezes. Because of switching costs, sterling area countries were restricted in their ability to rebalance of their portfolio away from sterling.

THE STERLING AREA AS A CAPTIVE MARKET

British authorities sought to maintain the existence of the sterling area to ensure that its members, which collectively held 65% of net UK liabilities in 1945, did not sell their sterling holdings more quickly than what the Bank of England could tolerate. To achieve this goal, British authorities enforced a system of controls, economic inducements, and sanctions on the sterling area members. The British Treasury imposed strict rules on the currency composition of members' official reserves in

exchange for allowing them to participate in the sterling area. Sterling area members were not allowed to build up independent reserves or diversify their assets towards the dollar or gold. Rather, they were required to pool their gold and dollars earned from capital and current account transactions at the Bank of England.[44] British authorities controlled any withdrawal from the central gold and dollar reserves when making payments to a country outside of the sterling area, to minimize drains on the Bank of England's reserves. Failing to comply with this system of controls meant expulsion from the sterling area. In the words of British policymakers, the sterling area worked similarly to Bentham's panopticon, whereby a central authority disciplined members who surrendered their earnings: [45]

> 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.[46]

One dimension of this picture changed in December 1958: for persons outside of the sterling area, sterling became freely transferable anywhere.[47] But controls over the United Kingdom and sterling area members remained.

The first pillar of the system was exchange controls on transactions between the sterling area and the rest of the world. These controls dated from the outbreak of WWII in 1939. They were institutionalized by the Exchange Control Act of 1947 and remained in place until 1979. Any capital or current account transactions that might affect the reserves of the Bank of England required the consent of the British Treasury.[48] Individuals and businesses located outside the sterling area needed permissions from the Treasury to engage in commercial transactions with the United Kingdom in the form of international payments, securities transactions, coupons, or gold and foreign exchanges. Company

[44] Exceptions were granted to the gold producing countries, South Africa and Australia, see Kennedy (2018) and Henshaw (1996).

[45] Bentham (1791).

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

[47] Naef (2022).

[48] In practice, most of the Treasury's responsibilities under the act was devolved to the Bank of England, which delegated some responsibilities to British commercial banks.

ownership and international lending were also regulated. Violating the Exchange Control Act was punishable by imprisonment and the freezing or seizure of the concerned funds. These controls also applied to transactions between residents of the sterling area and entities outside the area, but not between Britain and sterling area members. If a country decided to exit the sterling area, its residents would be required to seek permissions from the British Treasury for capital and current account transactions with the United Kingdom and remaining members. The July 1958 Iraqi revolution provide an illustration: the British Treasury was anxious that the new regime would disregard the rules of the area and liquidate Iraq's sterling liabilities. The Bank of England responded by announcing that it had the power to block any payments in sterling from Iraq to countries outside of the sterling area.[49] In addition, British officials "scrutinised payments, whether from the Bank of England or from commercial banks, on behalf of Iraq to addresses outside the Sterling Area."[50]

The second pillar of the British system of controls on the sterling area was threats of commercial sanctions. The majority of the sterling area countries were also members of the Commonwealth, which was granted preferential treatment by the United Kingdom.[51] The Commonwealth was exempt from the general 10%[52] tariff imposed on imports to the United Kingdom since the Import Duties Act of 1932.[53] The postwar negotiations and the inception of the General Agreement on Tariffs and Trade prohibited granting the Commonwealth new trade preferences, but existing preferences remained in place until 1973, when Britain joined the European Economic Community (EEC).[54] In addition, from 1945 to the early 1960s, the United Kingdom relied on a system of quantitative controls on imports to limit payments in foreign currencies and protect the reserves of the Bank of England. [55] Imports from the sterling area were consistently the most favored throughout the 1950s while dollar area imports were the most restricted. Leaving the sterling area threatened participation in the Commonwealth. Departing countries

[49] M.E.Johnston, top secret correspondence to R. Glaves-Smith, 16th July 1958 "Iraq". TNA236/4415.

[50] D.h.R. to Sir Roger Makins, "Iraq sterling balances" 16th July 1958. TNA236/4415.

[51] Bank for International Settlements. "The Sterling Area", January 1953. Fed Archives, Box 671672200.

[52] Between 1959 and 1972, the average tariffs on semi-manufactures and finished goods outside of the Commonwealth Preference System were always above 10%, see Morgan and Martin (1975).

[53] De Bromhead et al. (2018).

[54] Cain and Hopkins, (2014), p. 684.

[55] Hemming, Miles and Ray (1959), Brennan and Milward (1996), Schenk (1994).

would suffer from higher tariffs on trade with the United Kingdom as well as increased quantitative import controls.[56]

The third pillar of British controls on the sterling area was the threat of losing access to the London capital market. The British Treasury advertised for sterling area members free transit of private capital from the United Kingdom as well as access to the London market for private and public purposes. British authorities promoted the sterling area as an international payment system, which simplified international transactions for its members.[57] Only Commonwealth members could float government loans in the City, and enjoy the favorable borrowing terms advertised by British authorities. Banks and other financial institutions of sterling area countries could freely access the London money market to meet their short-term liquidity needs.[58]

When several British colonies gained independence and considered leaving the sterling area, the British Treasury outlined the negative economic consequences that would result from their exit due to the measures in place. For example, consider the discussion on the case Ghana in 1957:

> 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[59]

They also threatened that "it is […] doubtful whether Commonwealth preference would survive […] if the sterling area did not exist" and stated that terminating the sterling area would "be a major disruption of world trade".[60]

[56] In 1958, 33% of the imports from the dollar area were still subjected to restrictions and import controls, against 0.5% for imports from the sterling area. These controls were progressively dismantled in 1959. See Hemming, Miles and Ray (1959).

[57] "The advantages of membership of the Sterling Area", Confidential, T.L. Rowan, 2 October 1958. TNA T236/5362.

[58] A.W. Taylor to D. Rickett. "1. The question put by Sir Leslie Rowan...", 27 September 1957. TNA T236/5362.

[59] A.W. Taylor to D. Rickett "Leaving the Sterling Area" , 27 September 1957. TNA T236/5362.

[60] A.W. Taylor to D. Rickett "Leaving the Sterling Area" , 27 September, 1957. TNA T236/5362.

The Exiters: Trading diversification of reserves against exchange controls

The departure or exclusion of Egypt (1947), Iraq (1959), and Burma (1966) illustrate how British Authorities treated countries seeking autonomy in the management of their reserves.[61]

The exclusion of Egypt

As of 1946, Egypt was the second largest holder of sterling liabilities, after India. It held £440 million, of which £345 million was in the reserves of the public authorities. Moreover, £400 million had come from British military expenditures during the WWII.[62] In 1947, Egypt requested permission to accumulate an independent gold reserve equal to 25% of its currency or to release some of its blocked sterling liabilities. The British authorities, who were negotiating for a partial cancellation of their war debts with Egypt, deemed these requests "completely unacceptable"[63] and instead offered to accept a gradual release of the blocked sterling of £10 million per year.[64] While Egypt was a member of the sterling area, it had the right to request access to the Bank of England reserves in order to settle its international transactions denominated in dollars. Within just a few months of the negotiations, the British authorities began to contemplate expelling Egypt from the sterling area to block Egyptian liabilities. As the pound was not convertible outside of the sterling area, expelling Egypt from the area rendered Egyptian sterling fully unconvertible. In addition, Egypt would lose its right to access to the reserves of the Bank of England.

> 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.[65]

[61] A fourth case is Rhodesia which unilaterally declared its independence from the United Kingdom in November 1965. Its departure from the sterling area was not driven by monetary issues, but resulted from a set of the economic sanctions imposed by Britain.

[62] Notes from a report made to the Egyptian Government by Paul van Zeeland on Egypt's Sterling balances. 19 November 1946 TNA T236/761.

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

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

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

The 4 June 1947 the British authorities concluded that the exclusion of Egypt from the sterling area was necessary to maintain full control over the pace of the liquidation of Egyptian liabilities. A top-secret memorandum written at the time stated,

> 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 Sterling Area (in the Exchange Control meaning of the phrase) will suffice.[66]

Excluding Egypt from the area would thus protect the reserves of the Bank of England. Next, British authorities stated that Egypt must choose between either leaving the area with an agreement on the partial release of their holdings or be "push[ed …] out to make a block effective".[67]

The Egyptian authorities opted to "go outside the sterling area by agreement" to avoid a complete block, and secure an immediate partial release of £8 million with a promise of an additional gradual release of £12 million. Egypt was officially excluded from the sterling area in July 1947.[68] However, due to the decline in British dollar reserves during the 1947 convertibility crisis, British authorities decided to limit the amount of sterling they would convert to only £1.5 million, despite having agreed to £12 million a few weeks earlier.[69] Egypt now faced a dollar shortage, yet the British authorities asserted:

> Egypt left the sterling area at her own request with effect from 15th of July, 1947. There is therefore no obligation on the United Kingdom to assist her in her dollar difficulties. […] It is clearly out of the question that we should make up in full

[66] Top secret Treasury, OF.36/10/9 "Egypt and the sterling area", 4 June 1947, TNA T236/767.
[67] Letter to Sir Wilfrid Eady, 9 June 1947. TNA T236/767.
[68] Sudan was pegging its currency to the Egyptian pound and was forced out the area along with Egypt.
[69] Telegram from Foreign office to Cairo, 18 August 1947. TNA T236/769. See Newton (1984) for more details on the convertibility crisis.

> the Egyptian dollar deficit. Egypt must be asked to accept some further degree of dollar austerity.[70]

Egypt reached its maximum dollar withdrawal amount on October 20, and was prevented from withdrawing more until the end of the year, which resulted in an exchange crisis.[71] A Treasury official later commented that "the chance of getting the precedent of a voluntary blocking established for a Sterling Area country was too good to be missed".[72]

The Bank of England used exchange controls to maintain a full freeze on Egyptian sterling liabilities until the next calendar year when another short-term limited release of sterling was authorized. In 1951, a long-term agreement on the settlement of sterling liabilities was finally reached. British authorities permitted the conversion of £20 million per year.[73]

Due to concerns that news of the exclusion may negatively impact ongoing negotiations with other independent countries of the sterling area, the British Treasury propagated a narrative that Egypt had chosen to leave the sterling area due to technicalities on the exchange controls.[74] In July 1947, *The Economist* reported on the narrative of Egypt's voluntary departure from the sterling area,

> 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[75]

The departure of Iraq

The second major case of departure from the sterling area was Iraq. In 1955, the Iraqis began asking to be allowed to diversify of the currency cover of the Iraq dinar. However, their request was frowned upon by the British authorities:

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[70] "Dollars, Egypt", 26 August 1947. TNA T236/769.

[71] "Egypt", memorandum for C.N.C. Undated, TNA T236/769.

[72] Symons, R.S. "Sterling Balances since the War". Treasury Historical Memorandum. Great Gorge Street, London: HM Treasury Chambers, January 1972. TNA T267/29.

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

[74] Letter to Sir Wilfrid Eady, 12 June 1947, TNA T236/767.

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

> 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.[76]

The British Treasury allowed Iraq to convert just £5 million of its liabilities into gold between 1955 and 1957. In 1957, Iraq still held around £127 million in liabilities and demanded more conversion of sterling.[77] The Chancellor of the Exchequer answered that it would go against Iraqi's best interests to "make the switch at a bad time" as the Suez Crisis was already draining the United Kingdom's reserves.[78]

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 they considered blocking Iraq's holdings and releasing them gradually as they had done with Egypt. Eventually, British authorities abandoned this strategy to safeguard confidence in sterling. In in the aftermath of the Suez Crisis, they were apprehensive about signaling to other Middle East countries such as Jordan or Libya that their sterling liabilities could be blocked. [79] They chose to allow a limited conversion of sterling, for the purpose of current payments.[80]

In June 1959, amidst ongoing financial negotiations, the Iraqis asked for a gold guarantee or, at least, a convertibility guarantee of their sterling holdings, which British authorities refused.[81] In response, Iraq decided to leave the sterling area. They held about £100 million in sterling and £20 million worth in gold and other foreign currencies. The following statement by the Iraqi Minister of Finance highlights the economic costs of staying within the sterling area and the impossibility of establishing of a fully independent monetary policy:

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

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

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

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

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

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

> 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.[82]

British authorities publicized Iraq's departure as primarily driven by the specific political context of Iraq rather than by the costs of staying within the sterling area.[83] Upon departure, Iraq lost the most-favored-nation status for imports to the United Kingdom and faced new import controls. By the end of 1960, the share of exports to the United Kingdom in Iraq's total exports faced a cumulative decrease of 12% compared to the year before the departure.[84] Iraq also became subject to the exchange controls applicable to countries outside the area, as described above.[85] However, since 1958, sterling had been formally convertible outside of the sterling area, therefore Iraq managed to convert some of its sterling holdings. At the end of 1959, Iraq's reserves totaled £106 million, of which 37% was in sterling, compared with 82% a year earlier, a decrease of £60 million. By comparison, only £20 million had been converted from sterling to gold or dollars from 1955 to 1958.[86]

The requested departure of Burma

In 1966, Burma's departure from the sterling area represented the third significant instance of exit. In 1962, the Burmese, which held £35 million, negotiated a diversification of its reserves with the British authorities and built an independent gold holding of £15 million.[87] Between 1964 and 1965, an increase of imports due to domestic shortage resulted in an annual trade deficit of £10 million.[88] Therefore, during this period, the Burmese spent much of their sterling holdings, keeping only 7% of

[82] Statement by minister of finance, *Iraq Times*, 7 June 1959. TNA T236/4794.
[83] Memorandum "Kuwait, Baghdad and Bharein", [probably early June 1959]. TNA T236/4795.
[84] Source: author's calculation using the TRADEHIST dataset.
[85] Letter to Mr. M.E. Johnston, 18 June 1959. TNA T236/4795.
[86] BIS annual report 1960, p.147.
[87] P.L. Hogg to H.S. Lambert, Esq. "Burma", 13 August 1964. TNA T317/460.
[88] TRADHIST and British Embassy in Rangoon to J.E. Cable, Esq. FO. 22 July 1964, TNA T317/460.

their reserves in sterling.[89] They also starting selling their forward sterling accruals against foreign currencies.[90] In addition, they introduced exchange guarantees in their commercial contracts in the form of gold clauses, to hedge against a potential sterling devaluation. The clauses stipulated that if the gold content of sterling changed, then all upcoming payments would be corrected so that the original price expressed in gold would still be paid to the seller. Options to terminate a contract in case of sterling devaluation were also used.

British authorities condemned such clauses for sending a negative signal on the general confidence in the strength of sterling.[91] The Foreign Office sent a warning to Burmese authorities in October 1966, advising against these practices. In a later meeting, they repeated that the Burmese should remove the "offending" gold clauses and renegotiate the proportion of Burma's reserves that should be held in sterling.[92] They warned that, if these steps were not taken, Burma would be expelled from the sterling area by the end of month.

Burma moved ahead without waiting for official expulsion. The 17 October 1966, they publicly announced their withdrawal from the sterling area, without informing the British authorities in advance. In the local press, they stated that this move was motivated by a 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".[93] Following the departure, transactions between residents of the sterling area and Burma became subject to the exchange controls. By the end of 1967, the share of Burmese exports to the United Kingdom among all Burmese exports dropped by 14% compared to the year before the departure.

The Commonwealth office requested that no mention of the fragility of sterling be made in association with the Burmese departure and stressed that there were "rules of the club which each

[89] D.F. Murray to L.J.D. Wakeley, Esq., 30 September 1966. TNA FO 371/185957.

[90] S. Goldman to Sir Denis Rickett, "Burma" 16 September 1966. TNA T295/249.

[91] Secret memorandum from A.K. Rawkinson to Mr. Hubback "Burma and the Sterling Area". 15 September 1966. TNA T295/249.

[92] The Foreign Office thus followed the Bank of England's call. J.Morse to Rickett, "Burma" 20July 1966, TNA T317/460. and Telegram n°289, from Foreign Office to Rangoon, 7 October 1966. TNA FO371/185957.

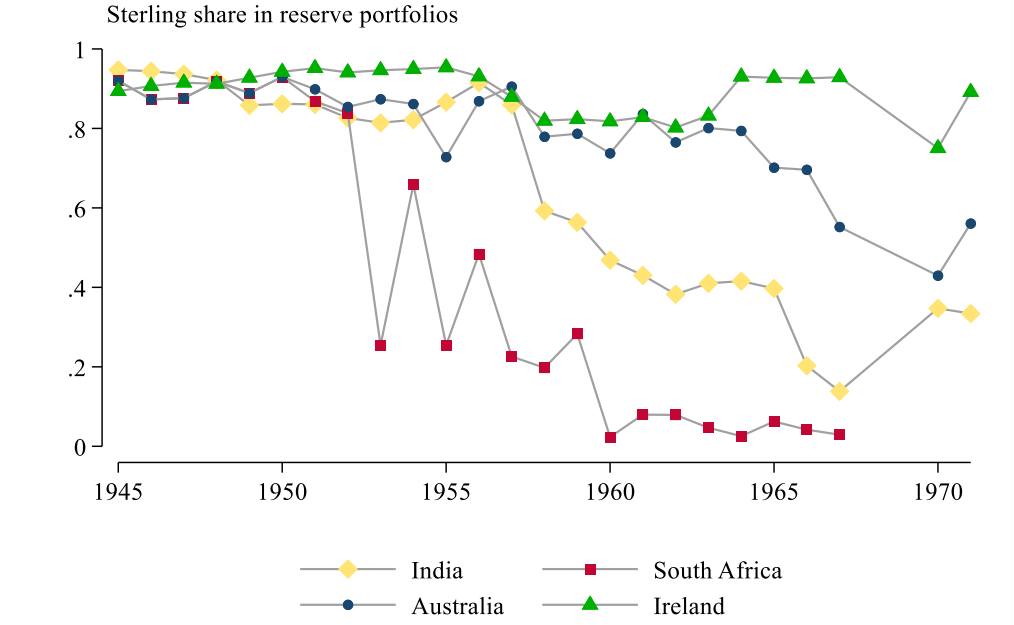
[93] Telegram n°252 from Rangoon to Foreign Office, 18 October 1966. TNA FO371/185957.

country is expected to observe".[94] 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 […] So, pushed, Burma opted out. It was this or expulsion."[95]

Voicing concerns and challenging sterling area membership

Newly independent countries of the sterling area were also eager to diversify their reserves. Figure 2 shows the evolution of the share of sterling among the reserves of large independent members of the sterling area. It reveals that some countries managed to diversify more than others. I investigate their different situations in the following sections.

Figure 2: Sterling share of reserves in major independent members of the sterling area



Source: Author's dataset, see text.

The diversification of India

In 1945, Sterling liabilities held in India amounted to £1.3 billion.[96] After gaining independence in 1947, India gradually liquidated its reserves through the partition, the payments of British imports and pension capitalization.[97] Following independence, India faced expulsion of the sterling area on several occasions. Financial negotiations in 1947 and 1948 were tense as India was pressing for the

[94] Confidential telegram from The Commonwealth office to the British High Commissions, 18 October 1966. TNA T317/460.

[95] 'Sterling Are, One Down…' *The Economist,* 22 October 1966.

[96] Abreu (2017), p. 586

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

conversion of some blocked sterling into dollars, and British authorities were considering excluding India from the sterling area to prevent such conversions. Exclusion was eventually ruled out, as Indian exports were essential to Britain and sterling area countries. The British Treasury used the Egyptian precedent to pressure India to accept an agreement, ultimately reached in 1948. While India had asked for a release of £200 million in three years, of which half was to be convertible, the United Kingdom allowed conversions amounting to a total of £80 million in equal installments from 1948 to 1951. The first year, only £15 million of it could be converted into dollar.[98] The releases were aimed at facilitating British exports to India at a time when the UK Government was anxious to support British industry.[99]

In the mid-1950s, India's trade and payments liabilities deteriorated, mostly due to the material and equipment purchased in connection with the Second Five Year Plan, a development program that came into operation in 1956.[100] India's distrust towards sterling grew in 1956 when the United Kingdom blocked the Egyptian sterling liabilities following the Suez Crisis.[101] However, British authorities were opposed to an acceleration of the release of Indian sterling liabilities, which were then fixed at £35 million per year. They considered again expelling India from the sterling area, but because sterling had been de facto convertible since 1954 for countries outside the area, such a move would render India's £400 million convertible into dollars. The Bank of England's dollar reserves could not cover this amount. The British authorities would have to float sterling or block Indian sterling holdings. The first scenario was opposed by the United States. The second was no longer an option after the Suez Crisis as many countries, especially those in the Persian Gulf, saw their holding of sterling as a political weapon in the hands of the United Kingdom. Further use of the blocking "could only be regarded as the end of sterling as an international currency and would be suicidal".[102] The British authorities eventually decided to negotiate that India would draw $127.5 million from the IMF in March 1957 and another $72.5 million

[98] Abreu (2017), p. 594.
[99] Tomlinson (1985), p. 155.
[100] IMF annual report, 1957.
[101] Telegram n°147 From the UK High Commissioner in India to the Commonwealth Relations Office, "Independent dollar holdings", 6 February 1957. TNA T236/4760.
[102] Bank of England study, to Armstrong, Esq. "India", 8 February 1957. TNA T236/4760.

in June of the same year. As India was not permitted to accumulate a large dollar reserve, these dollars were then sold to the Bank of England.[103]

Despite the resistance of British authorities limiting the release of India's sterling liabilities, the Indian authorities gradually reduced their sterling holdings by running trade deficits with the United Kingdom. While India's 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

On several occasions, South Africa either considered exiting the sterling area or was threatened with expulsion.[104] In 1947, British authorities contemplated expelling South Africa because of large capital flows to South Africa. But because "[British] paramount interest in the gold mining industry must be protected", they instead negotiated an agreement whereby South Africa would directly cover hard currency drawn from the Bank of England reserves through sales of an equivalent amount of gold.[105] 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 its reserves, and, by 1967 this percentage had fallen to 3%.[106] In the mid-1950s, South Africa demonstrated a willingness to exit the area to signal its economic independence. However, the British authorities promptly threatened to restrict South Africa's access to the British markets for its exports in retaliation. Because Britain was the largest market for South Africa's exports and because Afrikaners could not afford to lose access to the London capital market while apartheid policies were turning away prospective investors and creditors, South Africa chose to remain in the sterling area and send much-needed gold to the Bank of England.[107]

For the loyals: a "sterling trap"

Australia and Ireland, which were major independent players in the sterling area, appeared to remain loyal to sterling. However, internal debates occurred among local officials, leading to the

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

[104] Henshaw (1996).

[105] Henshaw (1996), p. 210.

[106] Author's calculation. See data sources in the section "Method and Sources".

[107] Henshaw, (1996) p. 216 – 17.

adoption of undisclosed measures aimed at reducing their exposure to sterling. In 1966, Australia sterling holdings represented 13% of the official sterling holdings of the sterling area and 32% of the Bank of England's gold and foreign exchange reserves. These same percentages were 5% and 13%, respectively, for Ireland.

Both Australian and Irish officials anticipated the 1967 devaluation of sterling, but refrained from liquidating a significant share of their sterling reserves, out of fear of sanctions. Additionally, such liquidations would have spurred speculation, as they were major players in the market. They found themselves in a "sterling trap" similar to the one France experienced in 1931.[108]

The Reserve Bank of Australia (RBA) repeatedly voiced concerns to the Australian Treasury over the stability of sterling between 1962 and 1968, calling for greater diversification of reserves, but the Treasury declined to act.[109] In July 1965, the RBA asked British authorities for a forward cover of around half of their sterling holdings, which was denied.[110] The RBA subsequently called for a reduction of sterling risk "without attracting attention"[111], indicating that they understood that British authorities would refuse a deviation from sterling area rules. Egypt and Iraq constituted a clear precedent. Tensions rose between the RBA board in Sydney and the Treasury in Canberra, with the former adopting a more aggressive stance on the question of the diversification away from sterling due to the weakness of the British economy. The RBA noted that "one's currency only stays in demand as a reserve currency when one is a dominant trader".[112] However, the Australian Treasury prioritized maintaining access to the London capital market for government borrowing, which was dependent on adhering to the rules of the sterling area.[113] Only a few weeks away before the 1967 sterling devaluation, RBA officials wrote,

[108] Accominotti (2009).
[109] Kennedy (2018).
[110] Secret memorandum 'Guarantees for sterling balances' 13 October 1965. TNA PREM 13/2037.
[111] RBA: IT-a-642-1 [c], cited in Kennedy (2018) p. 23.
[112] 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.
[113] Schenk and Singleton (2015), p. 1168.

> 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.[114]

In July 1968, the RBA Research Department regarded the 2% interest premium on sterling as insufficient compensation for the risks.[115] Limited action was taken by the RBA to accumulate IMF liquidity, the "gold tranche", to diversify their reserves without changing sterling liabilities held in London.

A similar situation developed in Ireland. In July 1966, the governor of the Central Bank considered writing to the Bank of England to express a willingness to increase the proportion of Irish reserves held other than in sterling up to £25 million by drawing from the IMF liquidity and by purchasing foreign currencies accruing from Irish commercial banks.[116] This strategy would have allowed Ireland to diversify its reserves without drawing on the Bank of England's gold and foreign exchange reserves, even if these reserves were assertedly available to sterling area members. The Irish authorities knew that any move against the sterling area principles would antagonize the Bank of England. The head of the department of Finance T.K. Whitaker replied to the governor of the Central Bank of Ireland with the following message:

> 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.[117]

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

[115] RBA: BM-Pe-95)., cited in Kennedy (2018, p.22).

[116] Draft letter to the Bank of England, 20 July 1966, Archives of the Central Bank of Ireland, 51/65 "External Assets" Part. 3.

[117] 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 1960s, countries such as Malaysia realized that a devaluation was imminent and pressed the Bank of England for guarantees; but the Bank of England assuaged fears of any devaluation. The 14.3% devaluation of the pound sterling in 1967 was not announced in advance to sterling area countries and many of them felt betrayed by the Bank after this episode.[118] The devaluation caused heavy losses on several sterling holders, as seen in table 3 in Online Appendix 4. Kuwait, which suffered losses amounting to 5.89% of its GDP, had also requested in 1964 a guarantee on the value of its sterling holdings. The request had been denied on the promise that there would be no devaluation.[119] In response, Kuwait decreased its sterling exposure by limiting its pooling of gold and dollar earnings in London. This allowed it to keep its sterling holdings in London untouched while decreasing the share of sterling in its reserves from 80% to 62% between 1964 and 1966.

After the second British application to the EEC and the 1967 devaluation, there was little hope that the sterling area could continue. Its members tried to diversify their reserves away from sterling by buying gold and US dollars from local banks, on the Euromarkets 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".[120] They rapidly decreased their sterling holdings from £123 million in April 1968 to £85 million at the end of August 1968, 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%.[121] As these shifts occurred in most of sterling area countries, the Bank of England considered possible responses, such as threating exclusion, enacting stronger exchange controls, freezing assets, providing an exchange guarantee or asking for liquidity support from 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

[118] On the devaluation, see also Bordo, MacDonald and Oliver (2009). Schenk (2008 p. 203) details the case of Malaysia, which lost around $80 million in reserves.

[119] Secret memorandum, "Guarantees for sterling balances," 13 October 1965. TNA PREM 13/2037.

[120] 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.

[121] 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.

> 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. […].[122]

Eventually, United Kingdom officials asked for international support from the G10 and the IMF in September 1968.[123] The central banks of the G10 agreed to provide a $2 billion line of credit, which the Bank of England could draw on to offset declines in its reserves caused by the diversification of sterling area reserves. In exchange, they insisted that the United Kingdom negotiate bilateral agreements with sterling area countries, in which the latter would commit to keep a minimum proportion of their reserves in sterling. In exchange, the Bank of England would guarantee the US dollar value of 90% of the sterling reserves held by these countries. If a country were to break the agreement and lower the sterling proportion of its reserves, it would lose the dollar exchange guarantee.[124] The agreements also included a guarantee to maintain, at least to a degree, the sterling area's privileged access to capital exports from Britain.[125]

Minimum Proportions of Sterling agreements (MSP) were negotiated bilaterally. For example, New Zealand was offered an MSP of 80%. The local authorities deemed this proposal unacceptable as it would penalize New Zealand for having "played by the rules" while other sterling area countries had been diversifying their reserves as quickly as they could.[126] New Zealand eventually secured an MSP of 70%, while Australia negotiated 40% and Ireland which had more than 75% of its reserve in sterling in early 1968, obtained 55%. The outcomes of the negotiations were uneven, colonies and recent newly independent countries receiving the highest MSP while developed sterling area countries were allowed to diversify more.

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[122] Sterling area working party, conclusions, draft 09.01.1968. BoE Archives, OV44/116.
[123] Schenk (2010).
[124] Schenk (2010) p. 273.
[125] Cohen (1971) p. 85.
[126] 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.

The MSP agreement succeeded in stopping the 1968 run on the pound by sterling area countries. Cohen (1971) argues that the MSP agreements were "a kind of ransom paid by Britain to keep the sterling system going"[127] while Schenk and Singleton (2015) state that sterling holders "were eventually rewarded with a dollar value guarantee for their official sterling reserves."[128] I see the MSP agreements as a form of "acceptable freeze" on sterling liabilities to allow for a continuation of the sterling area. These agreements constituted another initiative meant to limit the diversification of the reserves of sterling area countries. The British had jeopardized confidence in the value of the pound sterling with the 1967 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 dollar markets of Hong Kong and Kuwait prevented the United Kingdom from stopping the 1968 run on sterling.[129] The dollar 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, compelling the United Kingdom to devalue its currency once again.

GAINS AND LOSSES IN THE LONG LIFE OF THE ZOMBIE

The sedation of sterling holders

British policymakers were not caught by surprise by the difficulties which arose after the 1967 devaluation. By 1966, they already knew that "the sterling area [was] a bank with insufficient assets to meet its deposit liabilities", and therefore they would soon face a sterling crisis due to the low level of United Kingdom reserves compared to sterling liabilities.[130] In 1965, they considered offering a guarantee to sterling holders but decided that British interest rates qualified as a form of compensation for the risks of devaluation. Moreover, a guarantee to all sterling area holdings would be too costly in the event of a devaluation.[131] They chose "to slow down the erosion [of the sterling area] to a manageable pace", that is, they pursued "the sedation of holders of sterling".[132]

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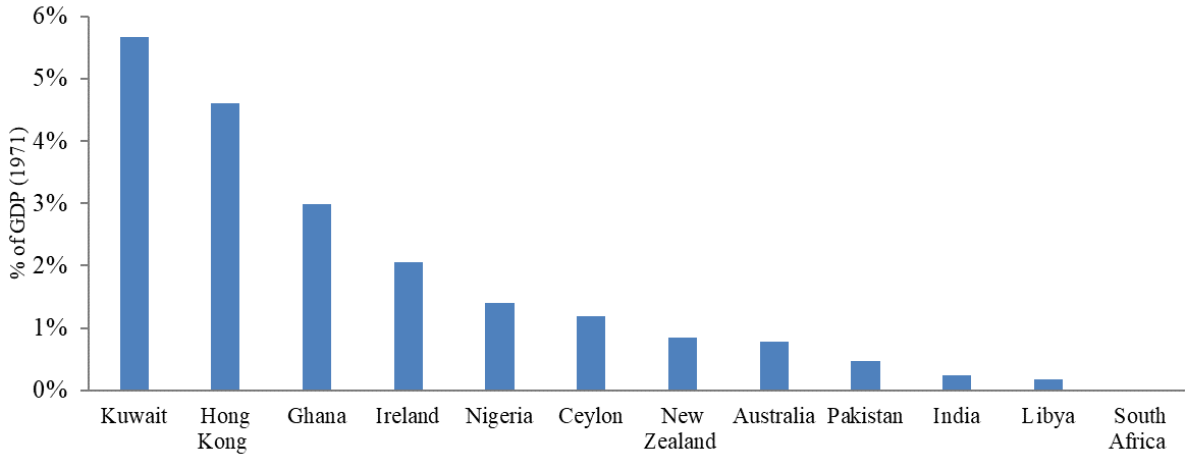
[127] Cohen (1971), p. 85.
[128] Schenk and Singleton (2015) p. 1166.
[129] On the Hong Kong gap, see Schenk (1994b).
[130] "The Sterling Area", S.W.P. memorandum, 29 July 1966, BoE Archives, OV44/33.
[131] Secret memorandum "Guarantees for sterling balances," 13 October 1965. TNA PREM 13/2037.
[132] Letter to the chief of overseas, "The Sterling Area." S.W.P. memorandum of 29 July 1966. 3 August 1966, BoE Archives, OV44/33.

To assess the losses of the limited diversification outside sterling induced by this strategy of "sedation of sterling holders", I conduct a counterfactual analysis.[133] I compare the return of observed sterling holdings with a theoretical portfolio in which sterling share is set at a working level of 20% of reserves and all sterling accumulated above that 20% threshold is converted in dollars, and kept as dollar investments. Figure 3 displays the spread of portfolio returns between sterling holdings and the theoretical mixed dollar-sterling portfolio, express as % of end of the period GDP. If Ireland could have reduced its sterling share to 20% of its reserves, it would have made real gains cumulatively representing 2% of its GDP by 1971. This assessment demonstrates the existence of a portfolio loss for sterling area countries. Despite the relatively higher interest rates in the United Kingdom compared to the US, sterling was not a profitable choice because of devaluations and higher inflation. If sterling had been convertible after the WWII, sterling area countries would have made more profitable investments by converting the majority of their sterling into US dollar.

Figure 3: Spread of portfolio returns between a mixed sterling and dollar reserve portfolio and a sterling portfolio.



Note: Cumulative difference in returns between observed portfolios and counterfactual portfolios, 1955-1971, expressed as percent of end of the period GDP. Author's calculation. See Online appendix 2 for details and sources

British and US gains: sterling over-valuation and the international monetary system

The persistence of the sterling area after the immediate postwar years mostly benefited Britain and the City. The sterling area worked as a mechanism to restrict sterling conversion into dollars and gold when British reserves were low, firstly after the sterling crisis of 1931 and then after the WWII. Most of the external sterling liabilities were held in the sterling area and formed "an important part of

[133] See Online Appendix 2 for detailed calculations and sources.

the inherent weakness of sterling".[134] In the late 1930s, the United Kingdom had managed to accumulate enough gold and foreign exchange to cover 100% of its liabilities.[135] However, the British Treasury was never able to durably replenish British 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 United Kingdom foreign liabilities.[136] On the contrary, the large western economies had a large coverage of their foreign liabilities by their reserves.[137]

As monetary authorities from both the UK and the US opposed a float of the pound sterling, the Bank of England also resorted to window dressing for its foreign exchange reserves in the 1960s to hide its difficulties and avoid confidence crisis.[138] It organized short-term swaps with the US Federal Reserve (Fed) to artificially inflate its reserves just before publishing the level of the reserves in the press and in its quarterly bulletins. The Bank borrowed over £460 million from the Fed to the Treasury in May 1968 to publish a reserve level of £500 million despite its real reserves amounting to just approximately £30 million.[139] This was at that time when the United Kingdom foreign liabilities were higher than £5 billion.

The Bank of England relied on numerous international liquidity support programs throughout the period to resist the drain on its gold and dollar reserves. A $5 billion loan was first negotiated with the United States and Canada after the WWII, followed by the $89 million of the Marshall Aid in 1948.[140] The 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 United States to reassure markets. Further agreements were negotiated during the 1960s with the IMF, the BIS and Western European central banks. From 1965 onwards, the Bank of England had to draw regularly on international liquidity, as seen in Figure 4.

Figure 4: International liquidity assistance used by the Bank of England

[134] "The working of the balances of payments". Sterling Area working party, 30 October 1956. BoE archives OV44/33.

[135] "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.

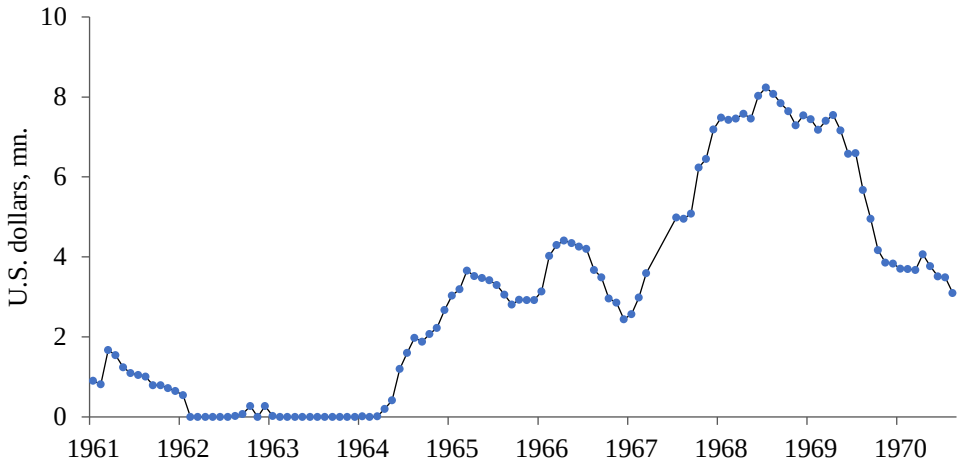
[136] Bank of England, Statistical Abstract, n°1, 1970.

[137] See IFS, indicator 16C and from the Bank of England Statistical Abstract, n°1, 1970.

[138] Naef (2020).

[139] Naef (2020).

[140] 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 enabled British authorities to maintain an international presence of sterling within the Bretton Woods international monetary system. Had foreign sterling liabilities 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 devalue. In the words of United Kingdom officials, capital and exchange controls aimed at supporting the international use of sterling to "give [the United Kingdom] command of resources" and help them "remain a first-class power".[141] The pooled gold and dollars reserves of sterling area countries at the Bank of England also helped to finance the United Kingdom's own deficits and the expansion of its expenditure.[142]

By being forced to hold sterling as their primary reserve, sterling area countries also contributed to the prosperity of the City of London.[143] British banks and insurers benefited from the fact that sterling was used in invoicing 25% to 30% of international trade.[144] The Bank of England considered that relieving the United Kingdom 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 follows the flag

[141] Letter to the Deputy Governor, 8 February 1955. BoE Archives, OV44/53.
[142] "The Sterling Area", S.W.P. memorandum, 29 July 1966, BoE Archives, OV44/33.
[143] Krozewski (1993) and Schenk (2010) pp. 212-219.
[144] Susan Strange, Sterling study group paper. Royal Institute of International Affairs. 5 December 1966. TNA T312/1648.

(or the £)."[145] However, the reality was that the flag was mostly gone, trade was mostly gone but foreign sterling liabilities persisted.

After WWII, the United States permitted the continuation of the sterling area, perceiving several advantages, even if exchange controls and commercial preferences violated Bretton Woods principles. In the late 1940s, the United States feared that the termination of the sterling area would weaken the link between some of its countries and the Western world. In the context of the developing Cold War, they regarded the currency area as a mechanism to deter its nations from aligning with the Eastern bloc.[146] From the early 1960s onward, they started to object the conversion of the foreign sterling liabilities into dollar as such operations would increase the pressure on the reserves of the Fed which were already frequently under attacks from speculators.[147] Moreover, US authorities were committed to an international monetary system based fixed exchange rate stability: sterling was seen as the first line of defense for the dollar.[148] Sterling's devaluation in 1967 renewed speculation on the dollar parity with gold, resulting in the closure of the US gold window in 1969.

CONCLUSION

This paper examines the international role of sterling during the Bretton Woods era and characterizes it as a zombie international currency, that is, a currency that would not have survived as a reserve currency without British authorities' interventions in the forms of exchange controls, threats, and economic sanctions. Similar mechanisms were actively put in place by Russia in the wake of the 2022 Ukrainian war. Therefore, studying the sterling's history provides an example of the potential gains and losses associated with such interventions.

After WWII, the United Kingdom did not have the economic fundamentals of an issuer of an international currency. Countries that could access alternative foreign exchange reserves, such as Western European countries or Iraq, chose not to hold sterling. I show that trade relation with the United Kingdom had a low impact of the composition of sterling area countries reserves compared to European

[145] To Mr Rootham, "Working party on the future of the sterling area", draft (6 October 1966). BoE Archives, OV44/33.

[146] Cairncross and Eichengreen, (1983).

[147] In 1961, external dollar liabilities became larger than the US gold stock. Bordo, Monnet and Naef (2019).

[148] Bordo, Monnet and Naef (2019).

countries' reserves. In the 1930s, the sterling system had been based on the carrot of a strong, highly desired 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 reserves in sterling. The area was designed to prevent the liquidation of foreign sterling liabilities and protect the fragile reserves of the Bank of England. British authorities used threats, propaganda, and sanctions to curtail the divestment of sterling assets. These manufactured high switching out costs explain most of the permanence of these foreign sterling holdings. The expulsions of Egypt from the area and the departure of Iraq and Burma resulted from 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 policies of trade liberalization and the development of Euromarkets, sterling area members increasingly free-rode the rules of the area to decrease their exposure to sterling risk, which led to an erosion of the reserve role of sterling. Only a G10 intervention compelled British authorities to provide a guarantee in exchange for the limitation of the divestment out of sterling.

This research illustrates the unsustainability of the coercive diplomacy to maintain a zombie currency. Investors seek a liquid and easily convertible international currency and avoid exchange controls and asset freezes. Imposing exchange controls to prevent asset liquidations can only delay the problem of investors trying to run the zombie currency. Coercion can only last for so long. Like a zombie bank, the zombie currency issuer will eventually need to negotiate with its creditors if it wishes to resume normal operations and reopen its capital markets.

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Table 1: Panel regressions.

	(1)	(2)	(3)	(4)	(5)
		OLS estimates		Fractional Logit	
	Baseline	Baseline w/ interaction	Country FE	*Odd ratios*	w/inertia
Sterling area membership		0.55***		99.36***	2.82
		(0.00)		(0.00)	(0.32)
Trade intensity w/UK	0.26**	0.13***	0.13	2.19**	2.41**
	(0.01)	(0.00)	(0.28)	(0.02)	(0.02)
Trade × Sterling area		-0.08*	-0.13	0.050*	0.49*
		(0.06)	(0.49)	(0.05)	(0.07)
GDP ratio	-0.31***	-0.34***	-0.57***	0.07	1.12
	(0.01	(0.00)	(0.00)	(0.40)	(0.90)
GDP ratio × Sterling area		-0.21***	-0.55***	0.40	0.84**
		(0.00)	(0.00)	(0.78)	(0.02)
Inertia					285***
					(0.00)
Inertia × Sterling area					0.78
					(0.77)
Controls					
Colonies	Yes	Yes	No	Yes	Yes
Weighted Distance	Yes	Yes	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	No	No
Adjusted R^2	0.625	0.808	0.938	NA	NA
Observations	406	406	422	406	406

*Note: the dependent variable is the share of sterling in reserves. All errors are clustered at country level. All variables are winsorized at level 1% and 99% levels. To report marginal effect in columns 1-3, I standardized the variables by rescaling them using the z-score method. Column 4 and 5 report odds ratios, a coefficient smaller than 1 indicates lower odds of association between the explanatory variable and the share of sterling, while a coefficient greater than one indicates greater odds of associations. P-values are in parenthesis. *p<0.1, **p<0.05, ***p. p<0.01.*

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: Counterfactual analysis of portfolio returns between a mixed sterling and dollar reserve portfolio and a sterling portfolio.

I compare the cumulative returns of two portfolios for sterling area countries: the first portfolio $P^{O}_{(i,t)}$ is composed by the observed sterling balances $£^{O}_{i,t}$ of country *i* for year *t* and the second one $P^{th}_{(i,t)}$ a theoretical portfolio in which sterling share is set at a working level of 20%[149] of the total central bank reserves. I define theoretical sterling balances $£^{th}_{i,t} = 0.2 * total\ reserves_{i,t}$.
I make the hypothesis that all sterling accumulated above that 20% threshold would be converted in dollar at the current exchange rate ϵ_t by the central bank and kept as dollar investment in the central bank reserve portfolio. I define the theoretical dollar reserve as:

$$\$^{th}_{i,t} = \sum_{y=1}^{t} \left(\frac{£^{O}_{i,y} - £^{th}_{i,y}}{\epsilon_y} \right)$$

I compare these two portfolios $P^{O}_{(i,t)} = £^{O}_{i,t}$ and $P^{th}_{(i,t)} = £^{th}_{i,t} + \$^{th}_{i,t}$.
I draw from Ben Bassat (1980) to calculate real rate of return ρ_c of a currency *c* as function of the interest rate r_c of and the inflation rate e_c.

$$\rho_c = \frac{(1+r_c)}{(1+e_c)} - 1.$$

As investments in foreign exchanges can have multiple forms, I draw from Schenk (1994) p.42 who quotes a 1957 study of the Bank of England and describes that "half of the sterling balances were held as securities and half in liquid form. Of the liquid assets, half were held in deposit and current accounts and half were UK Treasury Bills." I make a simplifying hypothesis for demonstration purpose that the distribution of the types of investments was stable across time and countries. I fix that one third of each currency would be invested in Treasury bills and two thirds in securities. I collected Treasury bills rates r^{Tb}_c and the rates of 10-years governments bonds r^{s}_c for both the US and the UK from the IFS and the Jordà-Schularick-Taylor Macrohistory Database.[150]

I calculated the cumulated real returns X_i at the end of the period for each portfolio, valuing the total cumulated returns in dollar in 1971 sterling.

$$X^{O}_{i} = \sum_{y=1955}^{1971} \left(\left(\frac{1}{3} £^{O}_{i,y} * \rho^{Tb}_{£}\right) + \left(\frac{2}{3} £^{O}_{i,y} * \rho^{s}_{£}\right) \right)$$

[149] I chose the arbitrary level of 20% based on the observed average share of sterling that Libya, India and South Africa reached toward the mid-1960s as these countries managed to find ways to diversify their reserve and this level is thus susceptible to represent their preferred level of exposition to sterling. A more conservative level could have been 10% as European countries were always under 10% on average but the economic interrelations of Britain and Sterling Area countries and the sterling peg would have probably induced a higher level of sterling share in sterling area countries compared to European countries.

[150] Jordà, Schularick and Taylor (2017)

$$X_i^{Th} = \sum_{y=1955}^{1971} ((\frac{1}{3}£_{i,y}^{th} * \rho_£^{Tb}) + (\frac{2}{3}£_{i,y}^{th} * \rho_£^{s})) + [\epsilon_{1971} * \sum_{y=1955}^{1971} ((\frac{1}{3}\$_{i,y}^{th} * \rho_\$^{Tb}) + (\frac{2}{3}\$_{i,y}^{th} * \rho_\$^{s}))\ ]$$

I can compute such measure for a sub-sample of my database for which I have annual observations from the period 1955[151]-1971, except for 1968 and 1969.
Finally, I measure the difference between the two investment strategies and I express it as % of end of the period GDP in Figure 3 of the paper. While this is a simplified portfolios analysis, it shows the overall trend.

Appendix 3: Robustness tables

Table 1: Robustness checks 1

	(1)	(2)	(3)	(4)	(5)
	Fractional logit (*Odd ratios*)				
	Post 1957	No colony	Exports to the UK	Exports to the sterling area	Imports from the sterling area
Sterling area membership	0.63	2.82	5.03*	6.99*	1.82
	(0.65)	(0.32)	(0.08)	(0.07)	(0.60)
Trade intensity w/UK	2.44**	2.41**	1.13***	1.12***	1.11**
	(0.02)	(0.03)	(0.00)	(0.00)	(0.02)
Trade × Sterling area	0.49*	0.48*	0.90***	0.91***	0.92
	(0.07)	(0.07)	(0.00)	(0.00)	(0.10)
GDP ratio	1.21	1.24	1.97	1.08	0.26***
	(0.85)	(0.83)	(0.42)	(0.89)	(0.00)
GDP ratio × Sterling area	0.06**	0.05**	0.05***	0.08***	0.71
	(0.01)	(0.02)	(0.00)	(0.00)	(0.62)
Inertia	65.2***	285***	420***	530***	153***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Inertia × Sterling area	9.44**	0.78	0.50	0.368	1.29
	(0.06)	(0.77)	(0.40)	(0.36)	(0.85)
Controls					
Dummy Colony	Yes	No	Yes	Yes	Yes
Weighted Distance	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	321	353	406	408	408

*Note: the dependent variable is the share of sterling in reserves of monetary authorities of European and sterling area countries. All errors are clustered at the country level. All variables are winsorized at level 1% and 99% levels. The coefficients are odds ratio, a coefficient <1 indicates lower odds of association between the explanatory variable and the importance of sterling in the reserve portfolio, while a coefficient > 1 indicates greater odds of association. P-values are in parenthesis. * p<0.1, ** p<0.05, *** p<0.01.*

[151] I chose 1955 as sterling became de facto convertible for current account transactions for European countries. So, in my counterfactual analysis, I make the hypothesis that sterling area countries would have been granted freedom of composition of their reserve portfolio from that date onward.

Table 2: Robustness checks 2

	(1)	(2)	(3)	(4)	(5)
		Tobit		OLS	GMM
	Baseline	Country FE	inertia	w/ inertia	
Sterling area membership	0.56***		-0.06	0.08	
	(0.00)		(0.40)	(0.20)	
Trade intensity w/UK	0.27***	0.06	0.22***	0.13***	0.53*
	(0.00)	(0.54)	(0.00)	(0.00)	(0.07)
Trade × Sterling area	-0.31***	-0.11	-0.19***	-0.05	-0.53*
	(0.00)	(0.52)	(0.00)	(0.23)	(0.09)
GDP ratio	-0.35***	-0.55***	-0.19***	-0.18***	0.24*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)
GDP ratio × Sterling area	-0.20***	-0.50***	-0.15***	-0.13***	-0.08*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)
Inertia			0.91***	0.80***	0.42***
			(0.00)	(0.00)	(0.00)
Inertia × Sterling area			0.14***	0.24***	
			(0.00)	(0.00)	
Sigma	0.24**	0.06***	0.12***		
	(0.01)	(0.00)	(0.00)		
Controls					
Dummy Colony	Yes	No	Yes	Yes	No
Weighted Distance	Yes	No	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	No	Yes
Log likelihood	-294.6	-80.1	-182.5	NA	NA
Adjusted R^2	NA	NA	NA	0.896	NA
Observations	406	422	406	406	311

*Note: the dependent variable is the share of sterling in reserves of monetary authorities of European and sterling area countries. All variables are winsorized at level 1% and 99% levels. In column 1 to 4 errors are clustered at the country level. Variables in column 4 are standardized using the z-score method. In column 5, robust standard errors are used. P-values are in parenthesis. * p<0.1, ** p<0.05, *** p<0.01.*

Appendix 4: impact of the 1967 sterling devaluation

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 TRADHIST CEPII.

Appendix 5: Archival sources

Sources of European data:

Austria: Annual data on the foreign official assets of the Oesterreichische Nationalbank was obtained from Bank History Archives for the period 1948-1972. The source is the yearly publication Rechnungsabschluss. There is no data for 1950 and 1952 as the corresponding volumes are lost.

Belgium: Annual data on the foreign official assets for Belgium was obtained from the archives of the Bank of Belgium. The source is 'Analyse détaillée du bilan, du compte de profits et pertes et des comptes d'ordre au …'.

France: Annual data on the foreign official assets for France was obtained from the Bank of France Archives for the period 1945-1972. The reserves were composed by sight deposits in foreign central banks, others assets of the Bank of France and assets of the Fonds de stabilization des changes. The source is 1463200401/50-51 and 1463200401/131-133.

Germany: Annual data on the foreign official assets for Germany was obtained from the archives of the Bundesbank for the period 1953-1972. The source is Devisenposition und devisenstatus, B330/20780-20792.

Italy: Annual data for on the foreign official assets for Italy was obtained from the archives of the Bank of Italy for the period 1946-1973. The source for the period 1962-1973 is the Relazione annual of the Bank of Italy. For the period 1946-1961, the source is the balance sheet of the Ufficio Italiano dei Cambi which reports the decomposition of the reserves for end of June. From the source of the Situaziono dell'Ufficio Italiano dei Cambi (1945-1970) by F.Samuelli, I retrieved the value of the total of the reserve portfolio at the end of December of each year and I applied a percentage of each currency from the June's portfolios to produce estimates of the decomposition of the reserves at the end of year.

Norway: Annual data on the foreign official assets of the Norges Bank for the period 1945-1972 comes from Eitrheim, Ø. and M. Fevolden (2019). "Norges Bank's international reserves, 1817-2017", Chapter 3 in Eitrheim, Ø., J.T. Klovland and J.F. Qvigstad (eds.), *Historical Monetary Statistics for Norway* - Part III, Norges Bank Occasional Papers no. 5x, Oslo, 2019, Tables 3.A.1-3.

Portugal: Annual data for the foreign official assets of the Bank of Portugal for the period 1945-1971 comes from the historical archives of the Bank of Portugal. The source is 'Departamento de Contabilidade Geral. Reservas em moeda estrangeira. 1939-1974. [Documentação não tratada]'.

Switzerland: Annual data for the foreign official assets for Switzerland for the period 1945-1972 comes from the archives of the Swiss National Bank (SNB). The source is the yearly 'Protokoll uber die Verhandlungen des Bankausschusses der Schweizerischen Nationalbank'. From 1959 onward, the reserves of the SNB were composed only of gold and dollar. Anecdotal evidences show some European currencies were held by the Bank among the 'other assets' of its balance sheets. These foreign currency holdings, observed in 1965 and 1967[152] represented less than 0.1% of the dollar holdings of the SNB.

Spain: Annual data for the foreign official assets for Spain for the period 1945-1971 comes from the archives of the Bank of Spain. Elena Martinez Ruiz kindly shared her unpublished data from her work in the archives for the period 1939-1962. The source for the period 1963-1971 'Departamento extranjero I.E.M.E. Intervencion y Contabilidad' files 4330-4482. The Spanish reserves were held by the Instituto Español de Moneda Extranjera.

United Kingdom: Annual data for the foreign official assets for the UK for the period 1947-1970 comes from the archives of the Bank of England. The UK reserves were held by the Equalization Account General Ledger. The source is 'Exchange Equalization Account, General Ledger' EA141/1-17.

<u>Archival sources for sterling area countries:</u>

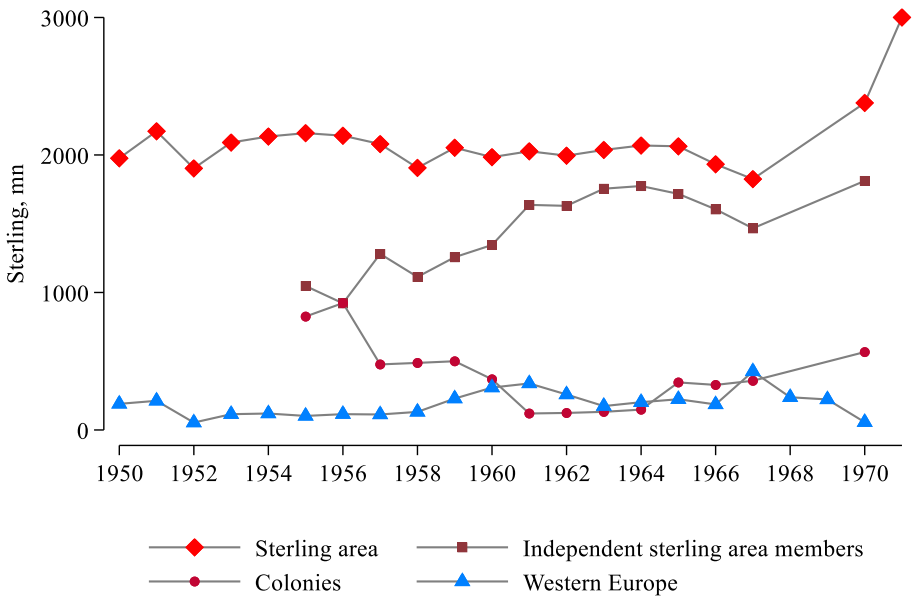
- TNA T236/5369
- BoE EID16
- BoE OV44/33
- BoE OV44/53
- BoE OV44/116
- BoE OV44/120
- BoE OV44/122

[152] Source: Archives of the Swiss National Bank, 9.1/9107. EPU.

- BoE OV44/155
- BoE OV44/161

Appendix 6: Supplementary figures

Figure A1: Volume of sterling holdings in central banks' reserves.



Source: Author's dataset, see text.
Note: The line for the sterling area represents the volume of sterling for all members of the sterling area. This group is also divided among the British colonies and the independent sterling area members.

Appendix 7: Summary Statistics

Variable Name	Definition	# obs.	Mean	Min	Max
$Share$	The share of sterling holdings within reserve portfolios of year *t*. The denominator is the sum of gold and foreign exchange holdings.	489	0.59	0	1
Sterling area membership	Dummy coding 1 for countries that were member of the sterling area on year *t*.	495	0.71	0	1
Trade intensity w/ UK	Koijma index of trade intensity for year t $I_{i,j} = (\frac{X_{ij}}{Xi})/(\frac{M_j}{M_w - Mi})$ (see Online Appendix 1)	455	2.76	0	11.1
GDP ratio	Ratio of country *i*'s GDP and British GDP for year *t*, measured in nominal terms.	456	0.16	0.01	1.68
Inertia	The sterling share of the reserves of country *i* in 1953.	495	0.68	0	1
Colonies	Dummy coding 1 if country *i* is a British colony in year *t*.	495	0.78	0	1
Weighted Distance	Distance from country *i* to the United Kingdom, weighted by population size.	479	6077	425	18521