1. APPENDICES

Appendix 1: Measuring trade intensity

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

Where: is country *i*'s exports to country *j*

is *i*'s total exports

is j’s total imports,

is *i*'s total imports, and

is total world imports.

is subtracted from 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 is composed by the observed sterling balances of country *i* for year *t* and the second one a theoretical portfolio in which sterling share is set at a working level of 20%[[1]](#footnote-1) of the total central bank reserves. I define theoretical sterling balances .

I make the hypothesis that all sterling accumulated above that 20% threshold would be converted in dollar at the current exchange rate by the central bank and kept as dollar investment in the central bank reserve portfolio. I define the theoretical dollar reserve as:

I compare these two portfolios and .

I draw from Ben Bassat (1980) to calculate real rate of return of a currency *c* as function of the interest rate of and the inflation rate .

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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 and the rates of 10-years governments bonds for both the US and the UK from the IFS and the Jordà-Schularick-Taylor Macrohistory Database.[[2]](#footnote-2)

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

I can compute such measure for a sub-sample of my database for which I have annual observations from the period 1955[[3]](#footnote-3)-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*) | | | | |  | OLS |
|  | 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.*

Table 2: Robustness checks 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Tobit estimates | | | OLS estimates | GMM estimates |  | OLS |
|  | 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 *R2* | 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[[4]](#footnote-4) 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.

**Archival sources for sterling area countries:**

* TNA T236/5369
* BoE EID16
* BoE OV44/33
* BoE OV44/53
* BoE OV44/116
* BoE OV44/120
* BoE OV44/122
* 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 |
|  | 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  (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 |

REFERENCES

Ben-Bassat, Avraham. “The Optimal Composition of Foreign Exchange Reserves.” *Journal of International Economics* 10, no. 2 (1980): 285–95.

Jordà, Òscar, Moritz Schularick, and Alan M. Taylor. “Macrofinancial History and the New Business Cycle Facts.” *NBER Macroeconomics Annual* 31, no. 1 (2017): 213–63.

1. 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. [↑](#footnote-ref-1)
2. Jordà, Schularick and Taylor (2017) [↑](#footnote-ref-2)
3. 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. [↑](#footnote-ref-3)
4. Source: Archives of the Swiss National Bank, 9.1/9107. EPU. [↑](#footnote-ref-4)