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Abstract

We analyze an aspect of the international monetary system that has been the subject of little research: the distinction between foreign exchange reserves held as deposits and held as securities. We assemble new data for 109 countries in the period 1950-2022 based on previously unutilized statistics from central bank annual reports. We show that there has been movement since the late 1990s toward holding a larger share of reserves in the form of securities. Securities now account for almost two-thirds of total foreign exchange reserves, up from one-third a quarter century ago. This shift is concentrated in the decade between the emerging market crises of the late 1990s and the 2008 global financial crisis. It is associated with the accumulation of excess reserves, what central bank reserve managers refer to as the ”investment tranche” of their reserve portfolios.

JEL Classification: F30, F31, F33

Keywords: International monetary system, Foreign exchange reserves

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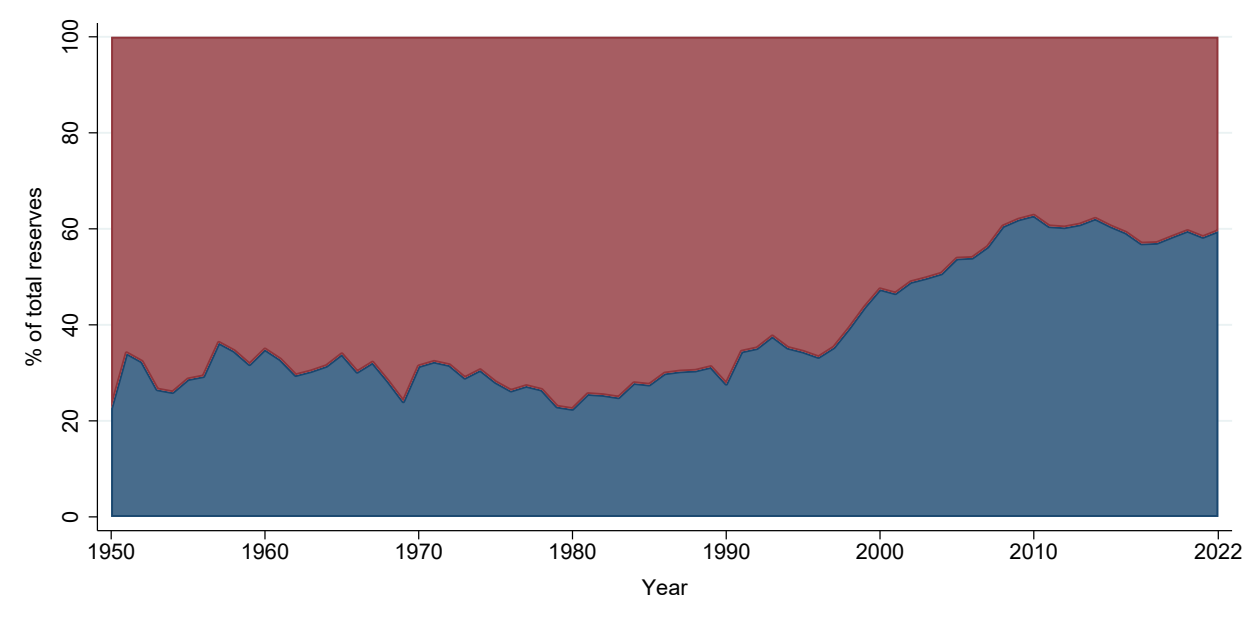
1 Introduction

In this paper we highlight an aspect of the international monetary system that has been the subject of little research: the distinction between foreign exchange reserves held as deposits and held as securities. We assemble new data for 109 countries in the period 1950-2022 based on previously unutilized statistics from central bank annual reports. We show that there has been movement since the late 1990s toward holding a larger share of reserves in the form of securities (see Figure 1). Securities now account for almost two-thirds of total foreign exchange (FX) reserves, up from one-third a quarter century ago. This shift is concentrated in the decade between the emerging market crises of the late 1990s and the 2008 global financial crisis. It coincided with the well-documented surge in FX reserve holdings worldwide (Rodrik, 2006; Eichengreen et al., 2018).[1]

It is not surprising that central banks hold different instruments in their reserve portfolios, since they hold reserves for different reasons. Reserves are held, for example, to fund interventions in the foreign exchange market. For this purpose central bank reserve managers prefer assets that are liquid (that are easy to buy and sell) and whose value is predictable, since this will help the trading desk responsible for interventions to know how much firepower it possesses. At the same time, reserves accumulated through past interventions that exceed those prospectively needed for future interventions may be valued for their income generating potential. Reserve managers may then prefer to hold these assets as part of a less liquid investment portfolio displaying a desired combination of risk and return. Correspondingly, central bank reserve managers not uncommonly refer to *liquidity* and *investment* tranches of their reserve portfolios (Lu and Wang, 2019; World-Bank, 2025).

[1] In the only previous paper looking at the breakdown between FX deposits and FX securities, McCauley and Rigaudy (2011) focused on the years around the 2008 global financial crisis and highlighted this post-crisis decrease in the ratio, without however making comparisons with long-term trends. They interpret this decrease as evidence that reserve managers suddenly realized that some deposits were not as safe as before. International institutions and central banks have also published handbooks and guidelines for reserve management (Nugee, 2000; Bernadell et al., 2004; IMF, 2014). The World Bank's annual Reserve Management Survey Report (RAMP) (World-Bank, 2025) has provided insights into the strategies followed by central banks since its first edition in 2018. Using the 2018 and 2019 RAMP surveys, Klingebiel et al. (2021) show how institutional settings and internal decision-making processes within central banks shape portfolio diversification. Other contributions (Bakker and Herpt, 2007; Bjorheim, 2020) assemble national perspectives to illustrate how local preferences influence reserve management frameworks and strategies. Across these studies, the distinction between deposits and securities is acknowledged, typically in the context of recommendations to strike a balance between highly liquid assets and higher-yielding instruments. However, this literature offers neither a long-run perspective on the evolution of these components nor a systematic analysis of the determinants of their relative shares across countries.

Figure 1: Average share of securities in FX reserves (in blue), 1950-2022



Note: Unbalanced panel of 109 countries. Total FX reserves are the sum of FX deposits and securities. The share of securities is in blue, and the share of deposits in red.
Source: authors' calculations based on CEPII dataset (see the text).

Deposits are a logical form in which to hold the liquidity tranche of the reserve portfolio, since these are easily withdrawn (liquidated) and their value is predictable (its value in foreign currency terms is likely to change only slightly day to day). Securities are an attractive form for the investment tranche, since they promise a higher return, though offering less predictability, while allowing the reserve manager to tailor the portfolio to achieve the desired balance of risk and return.

Thus, an obvious explanation for the shift in reserve composition away from deposits and toward securities since the late 1990s is additional reserve accumulation by emerging markets following the Asian financial crisis of 1997-8. Earlier authors have noted the tendency for central banks to accumulate reserves in the wake of this event. An important question emphasized in this literature is whether central banks accumulated these reserves for precautionary or mercantilist reasons. If they accumulated reserves for precautionary reasons – if the experience of the Asian crisis led them to anticipate the need for larger foreign exchange market interventions – then the aforementioned logic would lead one to expect additional investment in deposits. But if they accumulated reserves for mercantilist reasons – in an effort to keep their exchange rates from appreciating – then reserve accumulation in excess of that needed for intervention would lead one to expect additional investment in securities.

An early study (Aizenman and Lee, 2007), based on pre-2001 data, concluded that precautionary motives were more important in the years immediately following the event. More recently, Choi and Taylor (2022) have provided a different view. In a panel of 52 countries over 1980–2007, they show that the accumulation of foreign exchange reserves is associated with real exchange rate depreciation. This supports the idea of mercantilist motives and consequences. However, neither these nor other studies considered the implications for the instrument composition of reserves.

In what follows, we find that a higher share of securities in FX reserves is associated with a total level of FX reserves that exceeds standard benchmarks of reserve adequacy based on precautionary (liquidity) motives. These benchmarks include measures based on months of imports (following the Bretton Woods–era rule that reserves should cover three months of imports) as well as the IMF's Assessing Reserve Adequacy (ARA) index, which combines information on exports, M2, and external debt. We find a large and statistically significant relationship between the security share and excess reserves. About a third of the rise of the share of securities in FX reserves is attributable to this growth in central banks' investment tranche.

Second, the share of securities in total FX reserves is positively associated with capital account openness and floating exchange rate regimes. This suggests that a central bank is more likely to hold reserves as deposits when it operates a pegged exchange rate, potentially requiring extensive foreign exchange market intervention. It is more likely to hold reserves as securities when it has the financial depth and stability needed to maintain an open capital account.

Third, we identify political factors influencing the propensity to hold reserves as securities. Historically, members of the Sterling Area were more likely to hold securities, given that they were required to back 100% of their note issuance with sterling reserves. Since statute required them to maintain reserves in excess of those needed for intervention, these reserves did not need to take the form of deposits and could be (and were) invested in higher-yielding securities, namely UK government bonds (Schenk, 1994). For its part, the United Kingdom exerted pressure on Sterling Area countries to hold large reserves in order to help finance British public debt (de Bromhead et al., 2023).

We also find some evidence a positive correlation between the share of securities in reserves and geopolitical alignment with the United States. While we lack direct evidence on the currency and country denomination of those foreign securities for the entire sample of countries, it is plausible that U.S. allies are attracted to holding U.S. treasury bonds and bills, which offer an attractive combination of return (often in excess of that on bank deposits), liquidity (given the depth and breadth of the market), and safety (given treasuries'

traditional safe-haven character, reinforced by political alignment with the United States). This is consistent with Goldberg and Hannaoui (2024), who find, in more recent data, that "geopolitical distance from the United States and financial sanctions are associated with lower U.S. dollar shares mainly if the primary foreign currency liquidity needs of the central bank are already satisfied." However, our finding is sensitive to specification. While it is robust to the inclusion of year fixed effects, it does not survive the addition of country fixed effects.

These findings, with the exception of the immediately preceding, are robust across samples and specifications. They hold in our full (unbalanced) panel of 109 countries for the period since 1950 and in an alternative analysis using the IMF's International Reserves and Foreign Currency Liquidity (IRFCL) dataset. The IRFCL data, which begin in 1999 (with country coverage expanding over time), provide information on the breakdown of FX reserves between deposits and securities. Although this dataset lacks the historical depth of our primary dataset, it covers a larger number of countries in recent years and provides a useful point of comparison.

Our paper contributes to several strands of literature. First, there is a large body of work on the motives for holding foreign reserve holdings (Rodrik, 2006; Obstfeld et al., 2010; Monnet and Puy, 2020) and, more recently, on their currency composition (Eichengreen et al. (2018, 2019); Arslanalp et al. (2022). Our contribution is to observe that not all reserves should be treated alike. Motives for holding foreign deposits differ from those for holding foreign securities. Because the shares of securities and deposits have changed over time, the determinants of reserve accumulation almost certainly have changed as well.

Second, as already noted, a small but influential strand of literature on reserve accumulation asks whether reserves are held solely for precautionary purposes—linked to trade or capital account openness—or whether they are accumulated beyond liquidity needs to limit exchange rate appreciation (Aizenman and Lee, 2007; Korinek and Serven, 2016; Choi and Taylor, 2022). Using a theoretical model of precautionary needs for FX reserves in financially open economies, Jeanne and Rancière (2011) find that "the buildup of reserves in emerging market Asia can be explained only if one assumes a large anticipated output cost of sudden stops and a high level of risk aversion." Our paper provides a perspective on this question by focusing on the breakdown between FX deposits and securities. Like Choi and Taylor (2022), we find that a nontrivial share of reserve accumulation is driven by motives other than precautionary (liquidity) needs.

Finally, by highlighting the role of the sterling area and U.S. geopolitical links, we contribute to the rapidly growing literature on geopolitics and reserve accumulation (Eichengreen et al., 2019; Arslanalp et al., 2023; Goldberg and Hannaoui, 2024). This work is part

of the broader shift toward an emphasis on "geoeconomics" in international macroeconomic research.

Section 2 presents our data and describes the historical evolution of FX deposits and securities. It compares our data with other datasets on FX reserves. Section 3 adds information on conventions followed by central bank reserve managers, drawing on central bank reports and other sources. It confirms that foreign deposits are valued for their liquidity, while a significant fraction of foreign securities have long maturity. Section 4 reports a regression analysis of the determinants of the instrument composition of reserves (of securities vs. deposits). Following the conclusion, robustness checks and supplementary figures are presented in the Appendix.

2 Data description and historical trends

2 .1 New data

Our data provide a detailed breakdown of foreign reserves held by central banks since 1950. The central sources are central bank annual reports. While recent reports are published online, the vast majority had to be assembled from university libraries and central bank archives.[2] We are able to distinguish gold reserves; SDRs and IMF positions; contributions to regional funds (such as the European Monetary Fund in the 1970s and 1980s); foreign exchange reserves held as deposits (often reported as "balances abroad"); and foreign exchange reserves held as securities. Because the construction of this dataset was funded in part by CEPII (the main center for international economics in France), we refer to it as "CEPII data" in the comparisons that follow.

Although IMF data on foreign reserves have always (since 1948) distinguished gold, foreign exchange reserves, and other reserves (Monnet and Puy, 2020), the IMF has historically neither collected nor published a breakdown of reserves between deposits and securities. By turning to the reports of central banks, we can recover this distinction for a large number of countries. The breakdown of FX reserves is reported either in the full balance sheet of the central bank or in narrative sections of these annual reports.

The resulting panel is necessarily unbalanced, since many central banks were established after 1950 and not all central banks publish these data annually. For some countries, the series exhibit discontinuities. Table A1 in the Appendix provides the full list of 109 countries in the dataset (with all available country-year data). Although the sample does not cover all

[2]Annual reports were retrieved from the libraries of the Banque de France, Dauphine University, the National Institute of Statistics and Economic Studies (INSEE), Nanterre la contemporaine, Sciences Po, University of California, Berkeley; Kiel Institute; Free University of Berlin.

countries, there is no obvious selection bias between central banks that do and do not report this information, in that the dataset includes countries from all continents and encompasses advanced and emerging economies. Only Communist countries are systematically absent. A notable omission is China, for which we lack the relevant breakdown.

We begin in 1950 in order to capture the Bretton Woods period and to include a good representation of emerging economies, many of which first gained independence and established their own central banks in the decade following World War II. Starting in 1950 also facilitates comparison with the IMF's aggregate reserve series, which begins in 1948 but achieves broad coverage only from 1950. The level of detail in central bank annual reports increases markedly in the course of the 1950s. Still, country coverage in the 1950s remains limited; the number of central banks in our sample exceeds ten only from 1960 onward. For this reason, the main stylized facts presented below are based on series starting in 1960, although our conclusions are basically unchanged when the analysis is extended back to 1950.

2 .2 New facts

This long time span allows us to analyze reserve management across different international monetary regimes (the Bretton Woods System of pegged-but-adjustable exchange rates versus what the post–Bretton Woods nonsystem), as well as across countries with different levels of economic development, degrees of capital account openness, and exchange rate regimes.

Figure 1 above highlights the main stylized fact. The average share of securities in reserves, after having fluctuated around one-third until the late 1990s, increased sharply and continuously up until the 2008 Global Financial Crisis. Since then, this share has remained relatively stable around two-thirds. Put differently, where securities were a minority of reserves before the late 1990s, they became dominant in the 2000s.

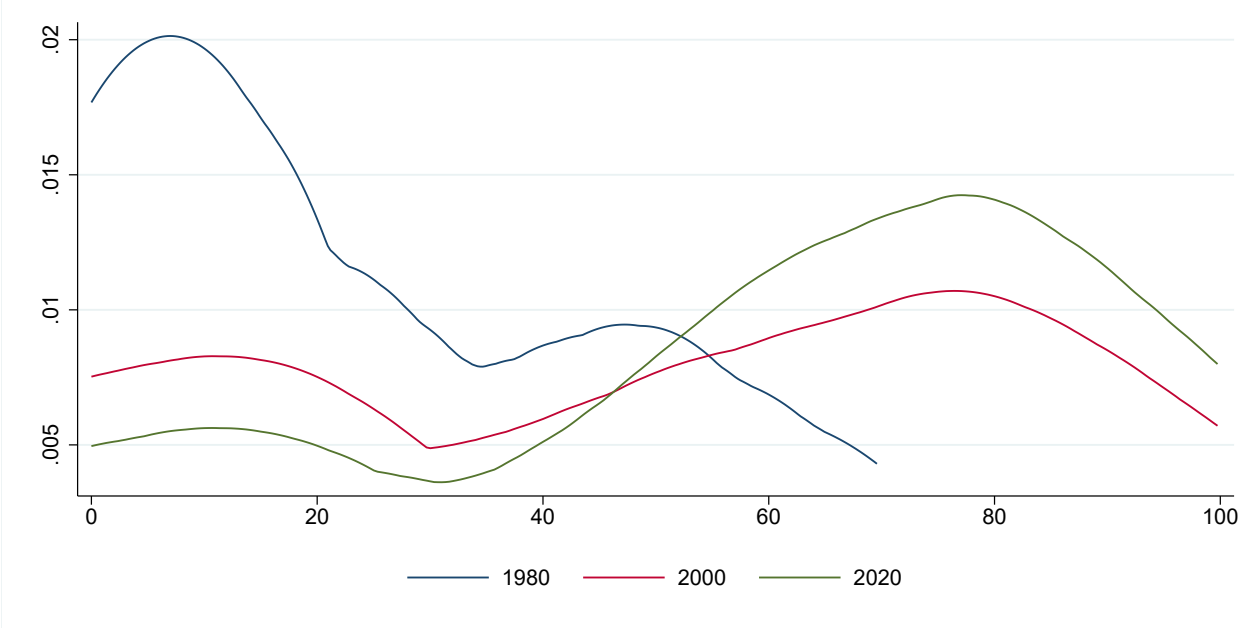
One might be concerned that the number of countries in our sample is not constant over time and that it increases in the 1990s. The trend in Figure 1 could, in principle, reflect changes in sample composition rather than a genuine change in reserve management and its determinants. To address this, we replicate the exercise while holding the set of country fixed at its 1995 composition, that is, just before the sharp increase in the ratio. As shown in Figure B.2 in the appendix, the result is very similar. The only notable difference is that, in this smaller balanced sample, the post-2008 share of securities is slightly lower, fluctuating around 60 percent.

Nor is the observed trend driven by a small subset of countries. When we consider the median rather than the mean ratio (Figure B.3 again in the Appendix), the same pattern emerges. It is, if anything, even more pronounced. The median share rises from around 25 percent before 1998 to about 70 percent in the late 2000s. Distinguishing between high- and

middle-income economies (using the IMF classification) reveals a similar upward trend in both groups (Figure B.4 in the Appendix). Thus, the shift is broad-based and not driven by a handful of large emerging markets.

Figure 2 displays the distribution of the share of securities in FX reserves for three benchmark years, 1980, 2000, and 2020, using all available country-year observations. (Figures B6 to B9 in the appendix also display more detailed distributions from 1960). In 1980, ratios above 60 percent are less frequent than lower values; by 2000, they have become equally frequent; and by 2020, they are more common than any ratio below 60 percent. Over time, the distribution becomes increasingly rightward-skewed, confirming that the rise in the share of securities is general.

Figure 2: Density of the share of securities in FX reserves



Source: Author's calculations using central bank annual reports (CEPII dataset).
Note: Unbalanced panel of 109 countries over time. Foreign exchange reserves are defined as the sum of the central banks' foreign exchange deposits and securities.

2 .3 Data Validation and Reliability

We can compare our data with two datasets published by the IMF. We first compare our data with the Foreign Exchange Reserves series from the IMF's International Liquidity database.[3] This comparison is relevant because central bank balance sheets do not always cover the

[3]According to the IMF, FX reserve data in the International Liquidity database are compiled from official country submissions by central banks and monetary authorities, reported under IMF statistical standards and disseminated after consistency checks.

entirety of a country's international reserves. It is important, therefore, to verify that any components we miss are limited. Figure 3 shows the two series along with the difference between them as a percent of GDP.[4] Overall, the gap between our total reserves series and the IMF's International Liquidity data is small (always below 3 percent of GDP). The two series have a correlation coefficient of 0.90. The gap between them widened slightly in the 1990s when measured relative to GDP. Since this coincided with the sharp increase in total reserves relative to GDP, the difference between the two series expressed instead as a share of total reserves did not widen over time.

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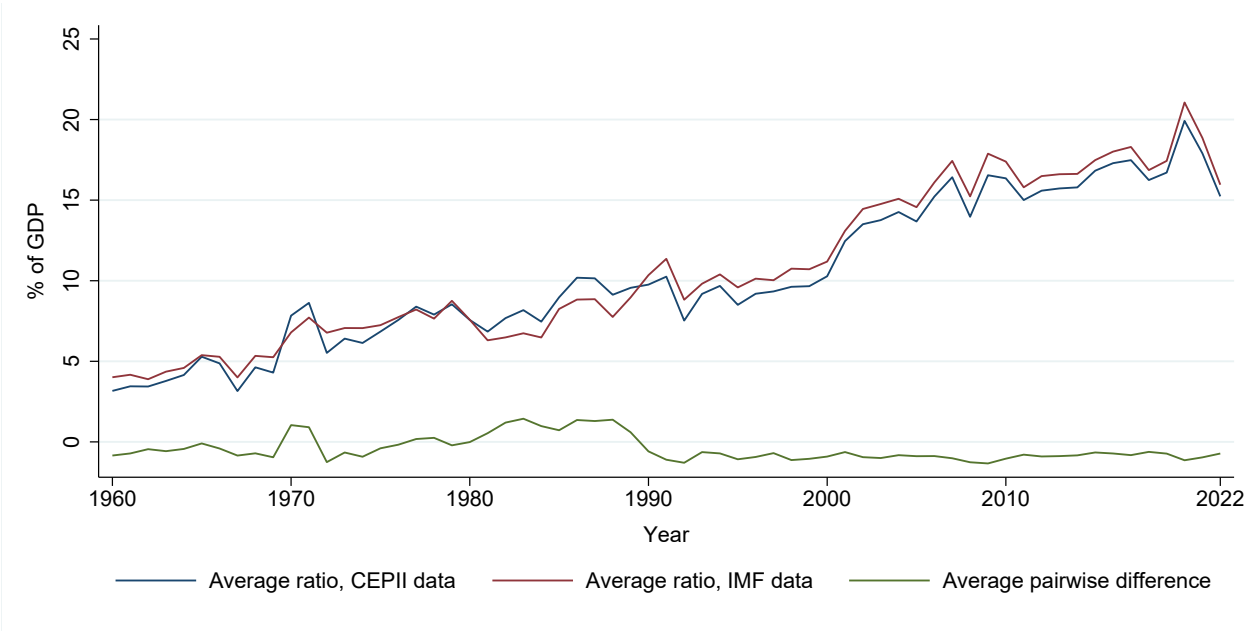
Figure 3: Comparison between CEPII and IMF (total reserves to GDP ratio)



Note: Unbalanced panel of 109 countries over time. The sample includes only observations for which data was available in both IMF and CEPII databases.
Source: Author's calculations using the "International Liquidity" database (IMF) and central bank annual reports (CEPII, dataset; see the text). GDP data are from the World Bank.

Second, we compare the share of securities in reserves according to our series with a the IMF's International Reserves and Foreign Currency Liquidity (IRFCL) database.[5] This dataset, which has not been used previously by academic researchers to our knowledge, is the only other dataset with international coverage that provides a breakdown between deposits

[4]Total reserves are measured as the sum of foreign exchange reserves (securities and deposits), IMF reserve positions, and Special Drawing Rights.

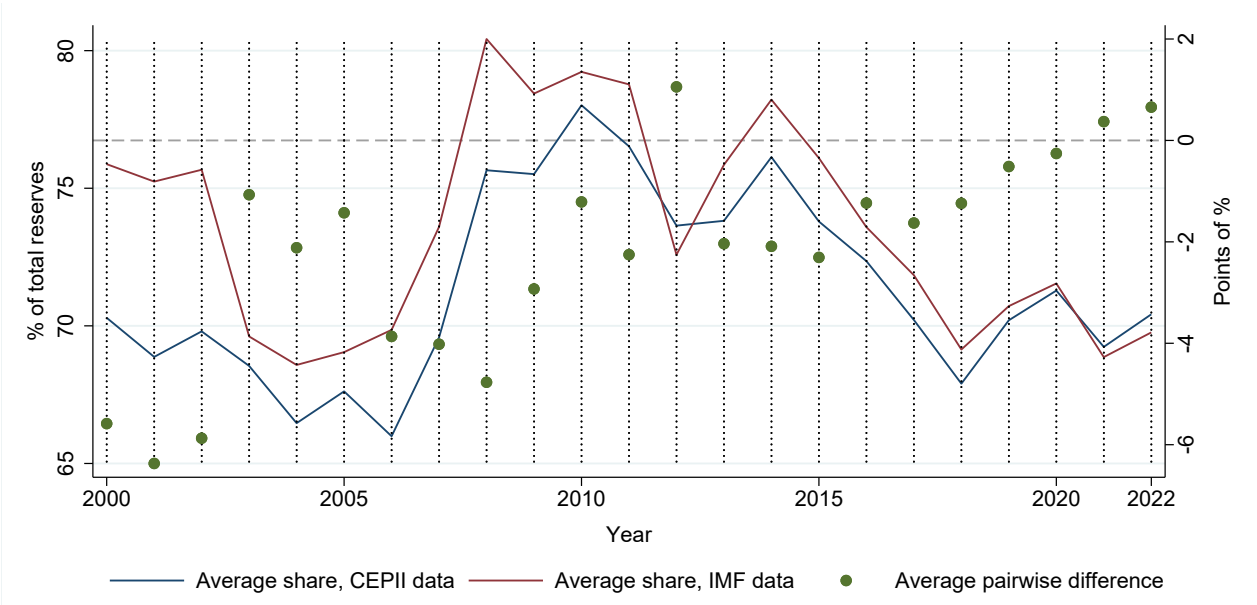
[5]The dataset is assembled from standardized reports submitted to the IMF by central banks.

and securities. IRFCL data cover a relatively short period, starting in 1999 with selective coverage in initial years. This means that this database does not capture the historical shift we highlight in this paper. Coverage becomes more encompassing in the most recent decade, with many countries, notably China, entering in 2014. As of 2024, coverage extends to 94 countries.

Recall that quite a number of countries in our dataset are not in IRFCL data, especially in the early 2000s. In addition, definitions of deposits may differ between IMF standardized norms and national central bank accounting.

Figure 4 shows the comparison for the 69 countries in both the CEPII and the IRFCL datasets. Recall that these subsamples are unbalanced, so pairwise comparisons (between specific country-year observations) are not available for all years. (Missing observations are especially frequent at the beginning of the sample, the start-up phase for IRFCL.) Although the CEPII data has, on average, a higher share of securities, the difference is not systematic (we observe both negative and positive differences depending on the year). Reassuringly, the difference never exceeds 5 percent of total reserves.

Figure 4: Comparison between CEPII and IRFCL-IMF datasets (share of securities)



Note: Unbalanced panel of 69 countries over time. The sample includes only observations for which data was available in both IRFCL and CEPII databases.
Source: Author's calculations using the IRFCL database (IMF) and central banks annual reports (CEPII dataset, see the text). GDP data are from the World Bank.

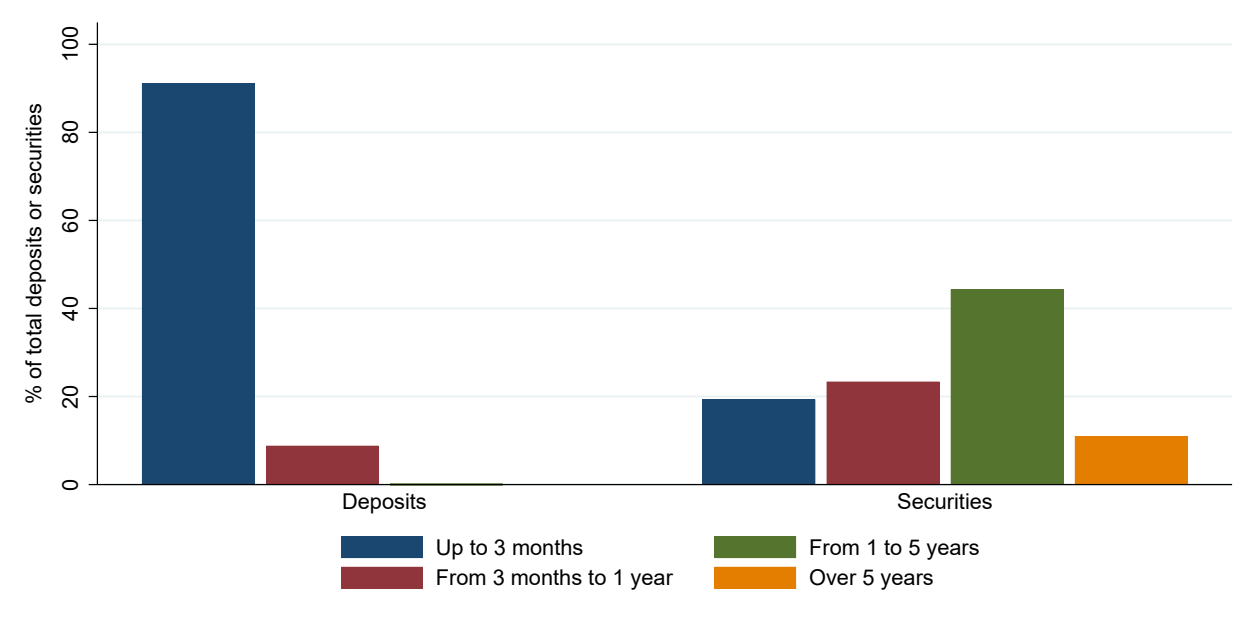
3 Foreign exchange management practices

This section provides additional information on foreign exchange reserve management practices to shed light on the choice between FX reserves and deposits.

Detailed information on the maturity structure of foreign reserves has appeared in central bank annual reports only recently. As a result, a systematic quantitative analysis of this dimension cannot be extended back in time. We therefore gathered data on the maturity of FX reserves for 30 countries for one recent point in time: the first half of 2024 (since not all central banks report their balance sheet on December 31st).[6]

Figure 5 shows that the overwhelming majority of deposits are short term. 63% of the central banks in our sample report that 100% of their deposits have a maturity shorter than three months. In contrast, more than half of securities held in reserve portfolios have a maturity of more than one year.

Figure 5: Average maturity of FX deposits and securities, first semester of 2024



Note: Sample of 30 countries.
Source: Authors' calculations using central banks' annual reports.

Consistent with the notion that securities held by central banks are predominantly long-term is the observation that most U.S. Treasury securities held by foreigners are relatively long-term. Treasury International Capital (TIC) data published by the U.S. Treasury De-

[6]Our subsample for maturity data is the following: Albania, Australia, Azerbaijan, Belize, Bangladesh, Bulgaria, Bahamas, Bermuda, Brazil, Brabados, Czechia, Eastern Carribean Central Bank, Ethiopia, Fiji, United Kingdom, Guyana, Island, Israel, Kyrgyzstan, North Macedonia, New Zealand, Papua New Guinea, Rwanda, Sweden, Seychelles, Tonga, Tanzania, Ukraine, South Africa, Zimbabwe.

partment provide comprehensive coverage of the maturity structure of U.S. debt held abroad from 2002. However, US debt is held abroad by a variety of institutions, not only central banks. Until 2022, official foreign holdings of U.S. debt accounted for more than half of the total. This has changed in recent years: by the end of 2025 this share had fallen to 42%. Moreover, this category ("official") includes sovereign wealth funds and other government agencies in addition to monetary authorities. In addition, foreign central banks also invest in non-U.S. securities. Notwithstanding these caveats, that only a small fraction of U.S. debt held abroad is short term reinforces the presumption that securities held as FX reserves tend to be longer maturity than corresponding deposits.

Table 3 reports maturity data for both U.S. Treasury and agency debt, the two often being treated as close substitutes by reserve managers. The share of short-term debt held by foreigners declined from 18.2% and 16.7% in 2004 to 10.5% and 4.8% in 2014 for Treasury and agency debt, respectively. In addition, these figures suggest that the rise in FX securities has not been associated with a shift toward short-term instruments. To the contrary, the expansion of securities in FX reserves has taken place in an environment in which foreign-held public debt has become, if anything, more heavily tilted toward longer maturities. This is consistent with our hypothesis of the rising weight attached to risk and return relative to liquidity associated with growth of the investment tranche of reserve portfolios.

Table 1: Foreign Holdings of U.S. Treasury and Agency Debt by Maturity

Year (June)	Treasury (Long)	Treasury (Short)	Agency (Long)	Agency (Short)	Treasury Short (%)	Agency Short (%)
2004	1,426.0	316.9	619.4	123.8	18.2	16.7
2014	5,382.2	633.1	827.1	42.0	10.5	4.8
2024	7,110.5	1,100.4	1,330.0	6.5	13.4	0.5

Notes: Values are in billions of U.S. dollars. Percentages are computed as the share of short-term debt in total (short-term + long-term) holdings for each category.
Source: U.S. Department of the Treasury, Treasury International Capital (TIC) System, *Foreign Holdings of U.S. Securities*, historical tables.

Our reading of central bank annual reports also yields insights into how assets are allocated between deposits and securities. First, deposits are consistently described as safer and more liquid than securities. Central banks typically shift the composition of their reserves toward deposits when they perceive greater instability or risk in the countries issuing securities. In periods of heightened uncertainty, the priority becomes safeguarding liquidity and capital at the cost of lower returns. A move toward deposits is typically framed as a search for safety and liquidity. An exception to this pattern was during the 2008 global financial crisis, when central banks reduced the share of deposits in their reserves because of uncertainty about foreign banks' exposure to U.S. mortgage-related assets. This evidence confirms the conclusions of McCauley and Rigaudy (2011).

In addition, when allocating reserves across instruments, central banks take into account factors that influence the valuation of foreign securities. In particular, the term structure of interest rates appears to influence the degree to which deposits and securities are substitutes. The shape of the yield curve affects both the maturity profile of the securities portfolio and the substitutability between deposits and short-term securities. Central banks also monitor interest rate risk by forming expectations about future monetary policy decisions (primarily by the Federal Reserve and the European Central Bank) which directly affect the future value of the foreign securities they may hold.

In sum, we find evidence that deposits are systematically associated with what reserve managers refer to as the "liquidity tranche" of foreign reserves (Lu and Wang, 2019; World-Bank, 2025), whereas securities largely belong to an "investment tranche" whose purpose is to generate returns.

4 Determinants

4 .1 Econometric specification and baseline results

To investigate our main hypothesis, we test whether countries hold a larger share of reserves as securities when reserve accumulation exceeds standard measures of precautionary reserve adequacy. We also take other potential determinants, such as trade openness (measured as the sum of exports and imports to GDP, extracted from the World Development Indicators of the World Bank), real GDP per capita (also from the World Bank), financial openness (as measured by de jure capital account openness index of Chinn and Ito (2008) (with data before 1970 extrapolated using the Quinn and Toyoda (2008) index) [7], and choice of exchange rate regime (as measured by the de facto exchange rate regime classification of Ilzetzki et al. (2019) (with data updated until 2021). Note that we code the ER regime as 0 if a country is pegged and 1 if it is floating (intermediate and flexible exchange rate regime).

All specifications include year fixed effects to absorb common time-varying factors such as interest rates on U.S. Treasury debt and, more generally, shifts in global financial conditions. We also add country fixed effects in columns 3 and 4 of the tables. In all estimations, we report Driscoll–Kraay standard errors, which are robust to heteroskedasticity, serial correlation, and cross-sectional dependence, and are appropriate in our setting given the long time dimension of the panel and the potential for common shocks across countries (Driscoll and Kraay, 1998). We use the full CEPII sample, which spans the decades both before and after the large shift

[7] The capital account openness variable is constructed by combining two sources. For the period 1950–1970, we use the Quinn–Toyoda index of current account openness, rescaled from its original 0–100 range to a 0–1 scale, while from 1971 onward we rely on the Chinn–Ito index, which is already normalized between 0 and 1.

in the share of reserves held in the form of securities. Due to data availability, the estimation sample with controls is limited to 96 countries. We estimate the following equation:

$$\textit{Share of securities}_{i,t} = \alpha + \beta RA_{i,t} + \gamma(RA_{i,t})^2 + \delta CO_{i,t} + \eta ER_{i,t} + \theta X_{i,t} + \lambda_i + \mu_t + \epsilon_{i,t}$$

where (i) $\textit{Share of securities}_{i,t}$ is the share of FX reserves held as securities by country i in year t (ii) $RA_{i,t}$ represents a metric measuring reserve adequacy for country i in year t (total reserves scaled by another variable, as discussed in the following) (iii) $CO_{i,t}$ and $ER_{i,t}$ respectively denote capital account openness and the exchange rate regime for country i in year t (iv) $X_{i,t}$ gathers a set of controls (as previously detailed) (v) α is a constant, whereas λ_i and μ_t are respectively country and time fixed effects.

We first examine whether there is a correlation between the size of foreign reserves (scaled by GDP) and the share of securities in FX reserves (Table 2). If the rise in FX securities were fully driven by a common time trend or by discrete shifts in capital account openness and exchange rate regimes, this would be fully absorbed by time fixed effects and other controls. In fact, we find a strong and statistically significant relationship between the ratio of foreign reserves to GDP and the share of securities in total reserves. When we include country fixed effects, the coefficient is significant only when we allow for nonlinearity (column 4, Table 2). We capture this nonlinearity by including both the ratio of reserves to GDP and its square. This nonlinearity is intuitive: as the share of securities approaches one, further increases in the level of reserves are no longer associated with increases in that share. (See below for further discussion.)

In column 4 of Table 2, the coefficient on the linear term is 0.888, while the coefficient on the squared term is -0.008. These estimates imply that the effect falls to zero when the ratio of reserves to GDP reaches roughly 50 percent. This is well above the sample mean of 12.7 percent (see the descriptive statistics at the bottom of Table 2). At 12.7 percent, a one–standard deviation increase in the reserves-to-GDP ratio (16.35) implies an increase in the share of FX securities of roughly 9 percentage points. Starting from a ratio of 5, an increase to 20 raises the share of FX securities by about 10 percentage points. Although these magnitudes do not account for the entirety for the historical rise in the share of FX securities from roughly one-third to two-thirds (figure 1), they explain a sizable part.

Several other results in Table 2 are worth highlighting. More advanced countries (with a higher per capita GDP) hold a larger share of reserves in the form of securities, perhaps reflecting a greater appetite for risk or better developed risk-management capacity of their reserve managers. In addition, we find a positive correlation between the share of securities in

reserves on the one hand and both capital account openness and exchange rate flexibility on the other. Countries with floating exchange rates are not expected to intervene systematically in foreign exchange markets, so their reserves are more likely to be allocated to the investment tranche.

Similarly, it might be thought that financial openness, by making for larger capital inflows and outflows and thereby accentuating liquidity pressures, encourages central banks to hold larger prudential buffers and shifts the instrument composition of reserves toward deposits. Our analysis points in the opposite direction. It suggests the existence of a second channel: external financial liberalization that makes securities easier to buy, sell, trade and manage, encouraging central bank reserve managers to shift the instrument composition of their portfolios away from deposits. This effect holds for a given level of FX reserves and a given degree of reserve adequacy. Evidently, international financial liberalization has had two cross-cutting effects on reserve management: it encourages countries to accumulate larger reserve buffers for precautionary purposes, and it alters the composition of those reserves toward securities by making the latter easier to purchase, trade, and manage.

4 .2 Reserve adequacy

GDP is an imperfect proxy for the liquidity needs motivating reserve accumulation. Two countries with the same level of GDP may require very different amounts of reserves if, for example, one is more financially and commercially open to the rest of the world and therefore more exposed to adverse trade shocks or capital outflows.

We turn to standard metrics from the literature to assess whether and where reserves exceed the levels justified by precautionary motives. The most widely used measure of reserve adequacy during and since the Bretton Woods era is the ratio of reserves to months of imports. The standard rule prescribed by the IMF over much of this period was that reserves should equal to three months of imports (Monnet and Puy, 2020; Jeanne and Sandri, 2020). The additional explanatory variable in Table 3 is thus total FX reserves scaled by the value of three months of imports. The average of this variable in our sample is 1.4 (see descriptive statistics at the bottom of table 3). As before, the dependent variable is the share of securities in total FX reserves.

Table 3 shows a positive and statistically significant association of the ratio of reserves to imports on the one hand and the share of securities in reserves on the other. We focus on specifications that include both country and year fixed effects. When nonlinearity is ignored, an increase in reserves equivalent to one month of imports is associated with a 3.9 percentage point rise in the share of FX securities (column 3). A one–standard deviation increase in the reserves-to-imports ratio (1.5 months) therefore implies an increase of about 6 percentage

Table 2: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/GDP (%)	-0.001***	0.160***	0.222*	0.888***
	(0.000)	(0.044)	(0.088)	(0.209)
Trade/GDP		-0.016	0.005	0.010
		(0.011)	(0.029)	(0.028)
Capital openness		0.882	7.326*	6.814
		(3.064)	(3.482)	(3.641)
Real GDP p.c. (log)		6.336***	11.443***	9.964***
		(1.317)	(2.739)	(2.615)
ER regime		7.937***	5.159***	4.972***
		(2.050)	(1.315)	(1.301)
Squared reserves/GDP				-0.008***
				(0.002)
Constant	34.101***	-14.799	-79.914***	-74.867***
	(0.000)	(9.143)	(14.525)	(14.828)
Observations	3907	2802	2802	2802
Countries	109	96	96	96
R-squared	0.168	0.262	0.596	0.602
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2802	48.33	34.76	0.00	99.99
Reserves/GDP (%)	2802	12.72	16.35	0.00	121.87

points.[8]

Allowing for nonlinearity (column 4), we obtain a coefficient of 6.945 on the linear term and -0.370 on the squared term. These estimates imply that when reserves equal 3 months of imports (the level recommended for liquidity purposes) an increase of one additional month of imports raises the share of securities in reserves by 2 percentage points. Because of the squared term, the marginal effect falls to zero when the ratio of reserves to imports reaches 28 (two years and four months worth).

Table 3: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/imports (3 months)	-0.020***	2.028***	3.918***	6.945***
	(0.001)	(0.385)	(0.878)	(1.680)
Trade/GDP		0.013	0.046	0.062
		(0.011)	(0.035)	(0.037)
Capital openness		0.800	6.822*	6.742*
		(3.097)	(3.363)	(3.351)
Real GDP p.c. (log)		6.177***	10.088***	9.686***
		(1.347)	(2.861)	(2.679)
ER regime		7.939***	5.315***	5.317***
		(2.027)	(1.315)	(1.317)
Squared reserves/imports				-0.370**
				(0.125)
Constant	33.589***	-16.024	-78.724***	-79.717***
	(0.001)	(9.163)	(15.348)	(14.166)
Observations	3391	2802	2802	2802
Countries	102	96	96	96
R-squared	0.167	0.265	0.602	0.605
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2802	48.33	34.76	0.00	99.99
Reserves/imports (3 months)	2802	1.36	1.54	0.00	15.14

[8] Conclusions are similar if we use the ratio of reserves to exports rather than reserves to imports (see Table C2 in the appendix).

The ratio of reserves to months of imports is a limited measure of a country's foreign liquidity needs. It is most appropriate for financially closed economies where capital flows are not relevant for reserve management (Jeanne and Sandri, 2020). For financially open economies, the literature has turned to financial indicators that better capture the central bank's liquidity needs in the event of sudden capital outflows—most affecting the money supply (Obstfeld et al., 2010) and short-term external liabilities (Jeanne and Rancière, 2011).

These considerations are incorporated in the IMF's 'Assessing Reserve Adequacy' (ARA) measure. The ARA metric compares reserves to a weighted sum of exports, short-term external debt, broad money (M2) and other liabilities, with weights that depend on the exchange rate regime. Reserves are deemed adequate when they reach 100 percent of the ARA benchmark. Note that the IMF's ARA dataset covers only emerging market economies and begins in 1990, with coverage expanding over time (IMF, 2014). In total, it includes 78 emerging markets.

We pursue two strategies to incorporate ARA into the analysis. First, we employ IMF data in order to assess the extent to which our main conclusions can be reached using the existing, publicly available IMF measure. This measure cannot capture the historical shift in the composition of FX reserves evident in Figure 1, since the IMF has published its measure only since 1990. Second, we exploit our original dataset with much longer historical coverage to construct a "pseudo-ARA" measure for all countries from 1970 onward (1970 rather than 1950 because data on external liabilities are limited prior to that date). Short-term external debt is sourced from the World Bank.[9]

Figure B.14 in the Appendix shows the ratio of reserves to our pseudo-ARA metric. The preceding figures (B.10 to B.13) allow for comparison with the ratios of reserves to trade and to money. Given data limitations (especially for short-term external liabilities), the resulting sample covers 49 countries. Figure B.14 shows that the average ratio of reserves to "pseudo-ARA" was typically below one (below 100%) before 1990. According to this metric, countries under-accumulated reserves before catching up rapidly in the 1990s. The ratio of reserves to ARA reached about 150 percent in the late 1990s and 200 percent in the early 2000s, although this average hides considerable heterogeneity across countries.

Figures C.2 and C.3 in the Appendix plot the relationship between the share of securities and the ratio of reserves to our reconstructed ARA and to the IMF's Adequacy of Reserves Assessment (ARA). A common pattern emerges. For low values of reserve adequacy (when

[9]In the original ARA metric, weights vary by exchange rate regime. Under a fixed regime, the weights are 0.1 for broad money, 0.1 for exports, and 0.2 for "other liabilities" (nonresident equity holdings and medium- to long-term debt outflows). Under a floating regime, the corresponding weights are 0.05, 0.05, and 0.15. In both regimes, the weight on short-term debt is 0.3. Owing to data limitations, we cannot include "other liabilities" and therefore omit this component. Data for the remaining variables are drawn from the World Bank. We use the same exchange rate regime classification as in our econometric analysis.

reserves are low relative to liquidity needs), the share of securities in total FX reserves spans the full range of possible values. It can be very low, average, or very high. A variety of factors may account for this heterogeneity, including country and year fixed effects, capital account openness, or the exchange rate regime. But as we move right along the horizontal axis (that is, to higher levels of reserves relative to liquidity needs), we observe only high shares of FX securities. Put differently, there is no country with very large reserves that predominantly holds these in the form of deposits. In contrast, countries with low or moderate reserves populate the entire range of the FX securities share.

Note that a nontrivial number of observations, especially among countries with low or moderate reserves, exhibit a share of securities in reserves of 100%. In other words, the dependent variable can reach its upper limit even at relatively low values of the explanatory variable. This points to the importance of considering nonlinear effects, which we do by including the squared value of the reserve adequacy measures.

Table 4 examines the relationship between the ratio of reserves to the IMF's ARA metric and the share of securities in total reserves. The sample begins in 1999; it is unbalanced and limited to 50 countries for which we are able to merge IRFCL data with the IMF's official ARA series. The econometric specification and control variables are those used in the previous tables. As before, we include country fixed effects, year fixed effects, and a nonlinear term (column 4); this is our baseline. Accounting for nonlinearity proves especially important in this sample, as the linear effect is not statistically significant in column 3.

According to Table 4, column (4), when the ratio of reserves to ARA equals 100% (that is, when reserves are exactly "adequate" according to the IMF benchmark) an increase of one percentage point in this ratio raises the share of securities in reserves by 0.121 percentage points (taking into account the squared term). Due to non-linearity, the marginal effect vanishes at a ratio of about 131. An increase in the reserves-to-ARA ratio from 100 to 150 is therefore associated with a 6 percentage point rise in the share of FX securities. In this IMF sample with limited temporal coverage, capital account openness and the exchange rate regime are no longer significant.

Table 5 reports similar regressions using our "pseudo-ARA" measure for a much longer period together with CEPII data on reserve concentration. The number of observations is both larger and less concentrated in recent years, although the number of countries for which we can construct consistent series is now smaller (49). The non-linear effect (squared term) is not statistically significant in this sample. A shift from 100 to 150 percent in the reserves-to-ARA ratio is associated with a 2.2 percentage point increase in the share of FX securities. A shift in the reserves-to-ARA ratio from 50 to 200 percent (roughly corresponding to the average evolution between the 1980s and the 2000s) is associated with a 6.6 percentage point

increase in the share of securities in FX reserves.

The much smaller effects in Table 5 likely arise from the fact that our "pseudo-ARA" displays a much larger standard deviation (157.28) than the original IMF metric (58.5). Ours reachs its maximum at 1,281%, whereas no country holds more than 337% of ARA in the IMF's sample. In this longer sample, the variable measuring capital account openness is again statistically significant, confirming that access to international capital markets was an important additional driver of the move toward holding FX reserves in the form of securities. We also recover statistical significance for the exchange rate regime, which supports the idea that countries with fixed regimes have higher needs in terms of foreign reserves' liquidity.

Table 4: Share of securities in FX reserves, IMF data, 1999-2024

	(1)	(2)	(3)	(4)
Reserves/ARA (%)	0.075***	0.065***	-0.007	0.131**
	(0.013)	(0.016)	(0.015)	(0.043)
Trade/GDP		0.067**	-0.172***	-0.155**
		(0.025)	(0.051)	(0.050)
Capital openness		11.386***	2.116	0.497
		(2.857)	(4.572)	(4.558)
Real GDP p.c. (log)		4.051**	-1.451	0.388
		(1.356)	(7.674)	(7.629)
ER regime		8.883***	1.097	1.808
		(2.054)	(2.407)	(2.396)
Squared reserves/ARA				-0.0005***
				(0.000)
Constant	82.948***	39.095	81.292	50.758
	(24.443)	(26.016)	(62.363)	(62.472)
Observations	960	719	719	719
Countries	54	49	49	49
R-squared	0.052	0.146	0.688	0.694
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	719	70.15	24.34	0.00	99.89
Reserves/ARA (%)	719	106.98	58.50	0.11	337.66

Table 5: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/ARA (recons.) (%)	0.042***	0.035***	0.044***	0.075**
	(0.006)	(0.006)	(0.010)	(0.024)
Trade/GDP		-0.069*	-0.058	-0.066
		(0.027)	(0.044)	(0.048)
Capital openness		1.220	9.687*	8.691*
		(4.160)	(4.019)	(4.289)
Real GDP p.c. (log)		5.139**	19.765***	20.477***
		(1.601)	(2.899)	(2.820)
ER regime		9.183*	6.845***	6.347**
		(3.553)	(1.831)	(1.839)
Squared reserves/ARA (recons.)				-0.000
				(0.000)
Constant	33.132***	-3.537	-137.912***	-145.179***
	(0.411)	(10.600)	(16.227)	(15.750)
Observations	1298	1289	1289	1289
Countries	49	49	49	49
R-squared	0.118	0.155	0.620	0.623
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	1289	37.81	32.84	0.00	99.98
Reserves/ARA (recons.) (%)	1289	170.09	157.28	0.03	1281.22

‘

4 .3 Geopolitical factors

The recent literature has emphasized the importance of geopolitical factors in the accumulation and management of reserves, both historically and in recent decades (Eichengreen et al., 2019; Goldberg and Hannaoui, 2024). Table 6 therefore extends the baseline specification (using full sample of countries in the CEPII dataset) by adding two geopolitical variables that are relevant for the share of FX securities in this period: membership in the Sterling Area and geopolitical proximity to the United States.

Membership in the Sterling Area implied that a country pegged its currency to sterling and held the majority of its reserves in that currency. Most sterling area countries were legally required to back domestic currency issuance with sterling and actively encouraged by the United Kingdom to invest their reserves in U.K. government securities (Schenk, 1994). Following the 1967 devaluation of sterling, the United Kingdom committed, under the 1968 Basel Facility, to protect the dollar value of sterling reserves held by member countries. In exchange, these countries agreed not to reduce their official sterling holdings below specified thresholds (Eichengreen, 2005).

Consistent with these institutional arrangements, our dataset shows that Sterling Area countries held an unusually high share of their FX reserves in securities between the 1950s and 1970s, and that this share tended to decline once a country exited the Sterling Area.[10]

We measure countries' geopolitical alignment using the United Nations General Assembly (UNGA) Ideal Points dataset developed by Bailey et al. (2017). This dataset estimates countries' latent foreign policy positions based on roll-call voting behavior in the UN General Assembly. The methodology relies on a dynamic item-response framework that extracts ideal points from observed voting patterns, summarizing countries' positions along the primary geopolitical dimension structuring international politics.

The resulting indicator captures time-varying foreign policy orientation and allows for consistent cross-country and intertemporal comparisons. Higher values indicate stronger alignment with the United States and Western allies, while lower values reflect greater distance from the Western bloc. Because the measure is derived from revealed voting behavior rather than stated diplomatic positions, it provides a systematic and comparable proxy for geopolitical alignment over the long run. This indicator has notably been used by Gopinath et al. (2025).

That the U.S. dollar has been the dominant reserve currency since World War II and that

[10]Data on Sterling Area membership are taken from de Bromhead et al. (2023).

U.S. the market in Treasury securities historically has been deep, liquid and stable suggests that countries geopolitically aligned with the U.S. are apt to feel more comfortable holding U.S. Treasuries. To encourage this behavior, in the 1960s and 1970s, the U.S. government issued so-called "Roosa bonds"— nonmarketable securities that could be held only by foreign central banks. These instruments offered higher returns than deposits and were designed to sustain foreign official demand for U.S. government debt (Makin, 1971). Importantly, access was limited to close U.S. allies such as Germany, Japan and Austria. Nonmarketable U.S. securities held by foreign central banks, such as Roosa bonds, were negligible after the 1970s, but it is plausible that holdings of U.S. government debt continue to be shaped by geopolitical considerations, whether as a signal of political alignment or as part of broader security and economic relationships with the United States (Goldberg and Hannaoui, 2024).

Adding these two geopolitical variables in Table 6 confirms that geopolitics matters for the composition of foreign exchange reserves. Both membership in the Sterling Area and geopolitical proximity with the US are associated with a substantially higher share of FX securities. The coefficients are large: membership in the Sterling Area increased the share of FX securities in total reserves by 52 percentage points. Being allied to US is associated with a 58 percentage point increase (according to column 2). Whether these effects reflect informal pressure, privileged access, or a desire to signal political alignment is uncertain. What is clear is that geopolitical relationships shape not only the level and currency composition of reserves, but also their internal structure between deposits and securities.

Evidence for an impact of geopolitical proximity to the United States is less robust. We obtain a significant positive coefficient when including year fixed effects (in column 2). But this effect does not survive the addition of country fixed effects in columns 3 and 4.

Importantly, adding these geopolitical variables leaves our core results unchanged. The ratio of reserves to imports remains strongly and positively associated with the share of securities in FX reserves, and the nonlinear pattern documented earlier is preserved. Capital account openness and exchange rate flexibility continue to be significant determinants of the composition of reserves.

Tables reported in Appendix D show that we reach similar conclusions when using alternative measures of reserve adequacy as independent variables (reserves-to-exports, reserves-to-M2, or ARA).

Table 6: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/imports (3 months)	-0.020***	2.858***	2.968***	5.276***
	(0.001)	(0.419)	(0.631)	(1.408)
Trade/GDP		0.025*	0.015	0.028
		(0.012)	(0.027)	(0.029)
Capital openness		-0.826	9.313**	9.155*
		(2.598)	(3.445)	(3.434)
Real GDP p.c. (log)		3.867**	8.606*	8.423*
		(1.254)	(4.048)	(3.920)
ER regime		7.963***	4.812**	4.801**
		(1.916)	(1.702)	(1.688)
Sterling area		55.864***	52.456***	52.326***
		(13.110)	(9.215)	(9.232)
Geopolitical proximity with US		58.620***	-2.211	-2.030
		(6.393)	(19.902)	(19.625)
Squared reserves/imports				-0.272*
				(0.114)
Constant	35.066***	-38.930***	-77.277*	-78.728**
	(0.001)	(9.901)	(29.461)	(28.551)
Observations	3321	2697	2697	2697
Countries	102	96	96	96
R-squared	0.165	0.318	0.632	0.633
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2697	49.03	34.63	0.00	99.99
Reserves/imports (3 months)	2697	1.38	1.55	0.00	15.14

5 Conclusion

An important question in international economics concerns motives for the accumulation and management of foreign reserves. While earlier studies have considered the level of reserves, their currency composition, and whether they are held for precautionary reasons or as a corollary of policies designed to limit exchange rate appreciation, their instrument composition – whether central banks hold reserves in the form of deposits or securities – has been all but entirely neglected.

We show that securities are more likely to be included in the investment tranche of reserves, since they can be expected to yield an attractive return and allow reserve managers to balance risk with return, while deposits dominate the liquidity tranche, where they can be tapped to meet immediate liquidity needs. We use this insight to shed light on the question of whether the expansion of reserve holdings since the late 1990s reflected growing precautionary buffers or an increased tendency to accumulate and invest reserves beyond immediate liquidity needs. Using a new dataset, we document a striking increase in the share of securities in foreign exchange reserves concentrated in the period 1998-2008. Econometric analysis suggests that the share of securities in reserves rose when total reserves exceeded liquidity needs, as measured by standard indicators such as the ratio of reserves to imports or the IMF's Adequacy of Reserves Assessment. This is consistent with the conjecture that the sharp increase in reserve holdings in the decade following the Asian Financial Crisis reflected mercantilist motives.

Our analysis identifies additional determinants of the choice of whether to hold reserves as securities versus deposits. We find that with the shift toward more flexible exchange rates countries had lower liquidity (precautionary) needs and responded by shifting the instrument composition of their reserves toward securities. Financially open economies are better able to purchase and trade financial instruments internationally, and exporters in these countries can obtain foreign currency directly on the market rather than through the central bank; such countries are more likely to hold their reserves in the form of securities. By contrast, in financially closed economies with fixed exchange rates, importers typically obtain foreign currency through the central bank, which therefore has stronger incentives to hold liquid assets in the form of deposits.

Geopolitical factors also play a role. The historical experience of the Sterling Area illustrates how the issuer of a reserve currency can encourage countries in its sphere of influence to hold its securities, helping to its debt. Similarly today, there is a suggestion in the data that countries with close geopolitical ties to the United States tend to hold a larger share of their reserves as securities – all but certainly U.S. government debt, given the dollar's

dominant role as a reserve currency.

The instrument composition of reserves has the potential to shed light on other debates in international economics. An example is America's "exorbitant privilege." Many discussions equate this with preferential demand for U.S. government debt, assuming that foreign reserves held in dollars are invested entirely in U.S. Treasury securities. Although our data do not allow us to observe the currency composition of deposits and securities separately, it is likely that the patterns documented in this paper indicate concurrent developments in the demand for U.S. dollar instruments by central banks, given the dollar's prominence in global reserves. Put differently, given that the alternative to holding U.S. Treasury securities is not just holding foreign Treasury securities but also holding bank deposits, it should not be taken for granted that a majority of global foreign exchange reserves will continue to be held, indefinitely into the future, in the form of U.S. Treasury bonds.

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Appendix A Available countries and years

Table A1: Available countries and years for the variable Share of securities in CEPII database

Country	Years
Angola	2007-2024
Argentina	1944-1949, 1981-1988, 1992-2024
Armenia	1997-1998, 2004-2022
Australia	1999-2024
Austria	1999-2024
Azerbaijan	1998-2023
Bahamas	1974-1975, 1978-2024
Bahrain	1966-1972, 2002-2024
Bangladesh	1975-2024
Barbados	1973-2024
Belgium	1945-1975, 1978-1980, 1988, 1999-2024
Belize	1977-2024
Bolivia	1946-1970, 1998-2024
Botswana	1976-1991, 2001-2024
Brazil	1967-1981, 1998-2024
Brunei Darussalam	2011-2024
Bulgaria	1991-2024
Burundi	1964, 1966-1986, 2010-2017
Cabo Verde	1997-2024
Canada	1935-2024
Cayman Islands	1997-2024
Chile	1935-1971, 1978-2024
Colombia	1927-2024
Comoros	2004-2024
Costa Rica	1950-1957, 1959-1964, 2002-2024
Croatia	1993-2024
Curaçao	2010-2017, 2021-2024
Czechia	1994-2024
Denmark	2000-2024

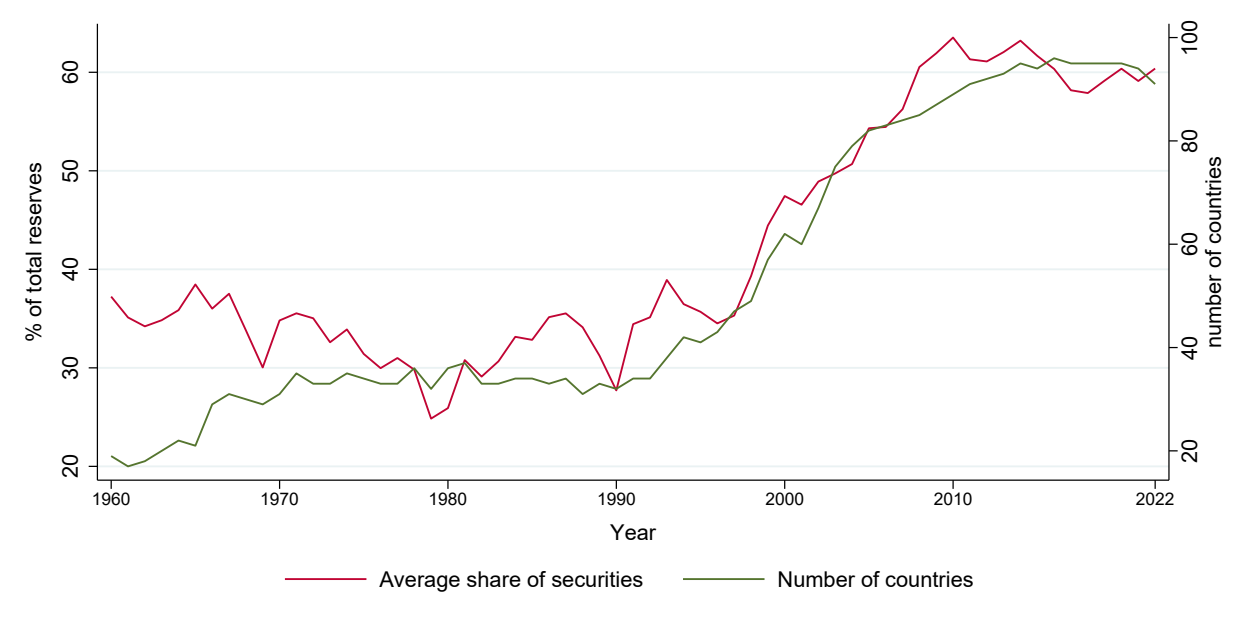
Country	Years
Djibouti	2012-2024
Dominican Republic	1947-2024
Ecuador	1952-1964, 1966-1969, 1971-1972, 1975-1978
El Salvador	1961, 1999-2024
Estonia	2008-2024
Ethiopia	1963-1978, 1980-1990, 1996-1997, 2019-2025
Fiji	1989-2024
Finland	1914-1982, 2005-2024
France	1960-1973, 1975-1995, 1999-2024
Germany	1951-2024
Greece	1950-1959, 1980-1986, 1998, 2003-2024
Honduras	1950-1953, 1956-1958, 1960, 1970-1975, 2008-2024
Hungary	2000-2024
Iceland	1947-1989, 1993-2016
India	1945-2025
Indonesia	1966-1967, 1999-2024
Ireland	1943-1945, 1947-1987, 1999-2024
Israel	1998-2021
Italy	1999-2024
Jamaica	1970-2024
Japan	1998-2024
Jordan	1951-1966, 1968-2021
Kazakhstan	1999-2002, 2004-2023
Kenya	1967-1976, 1978-1994, 2003-2024
Korea	1959-2024
Kuwait	1971-2022
Kyrgyzstan	2003-2024
Latvia	2009-2024
Lebanon	2014-2024
Liberia	1974-1991, 2002-2024
Lithuania	1994-2024
Luxembourg	1997-2024

Country	Years
Madagascar	1993-2024
Malawi	1965-2024
Malaysia	1990-2024
Maldives	1986-2024
Malta	1968-1971, 1993-2024
Mexico	1971-1975, 1977-1978, 1980-1981, 2014-2024
Mongolia	2001-2003, 2005-2023
Morocco	1950-1954, 2000-2024
Mozambique	1994-1997, 1999-2000, 2002-2024
Namibia	1990-2024
Nepal	1973-1974, 1978, 1980, 1983-1985, 1987, 1989-1991, 1993-1994, 1996-1997, 1999-2001, 2003-2024
Netherlands	1945-1987, 1992-2024
New Zealand	1932-2025
Nicaragua	1962-1978, 1989-2024
Nigeria	1962-1966, 1969-1976, 1979-1980, 1984-1985, 1992-2024
Norway	1893-1991, 1997-2024
Oman	1972-2022
Palestine	1996-2023
Pakistan	1950-1968, 1970-1972, 1974-1976, 1981-2024
Papua New Guinea	1979-1990, 2000-2024
Paraguay	1952-1963, 1997-1998, 2001-2024
Peru	1962-2024
Philippines	1949-1971, 1973-1998, 2003-2024
Poland	1993-1996
Portugal	1991-2024
Qatar	1966-2020
Romania	1997-2024
Russia	1998-2021
Rwanda	1966-1980, 1993-2008, 2016-2025
Saudi Arabia	1961-2020
Singapore	2002-2022
Slovakia	1993-2024

Slovenia	1991-2024
Somalia	2013-2024
South Sudan	2011, 2013-2024
Spain	1944-1948, 1955-1980, 1998-2024
Sri Lanka	1951-2024
Sudan	1960-1982, 1984-1989, 1995-2023
Sweden	1951-1981, 2002-2024
Switzerland	1959-1972, 1989-2024
Tajikistan	2010-2023
Tanzania	1967-1988, 2002-2025
Thailand	1951-1956, 1966-2024
Trinidad and Tobago	1999-2023
Tunisia	1959-1961
Uganda	1967-1968, 1987-2001, 2003-2025
Ukraine	1994-2024
United Arab Emirates	1981-2018
United States	2018-2024
Uruguay	1992-2024
Venezuela	1940-1956, 1958-2024

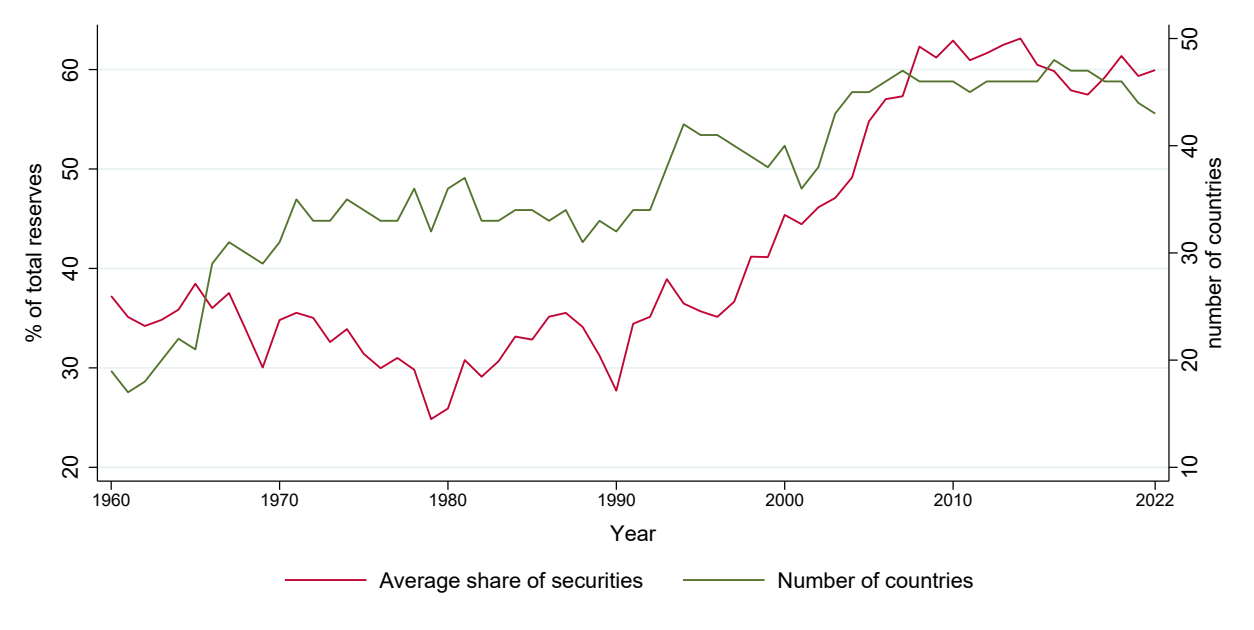
Appendix B Additional statistics

Figure B.1: Average share of securities and sample size by year



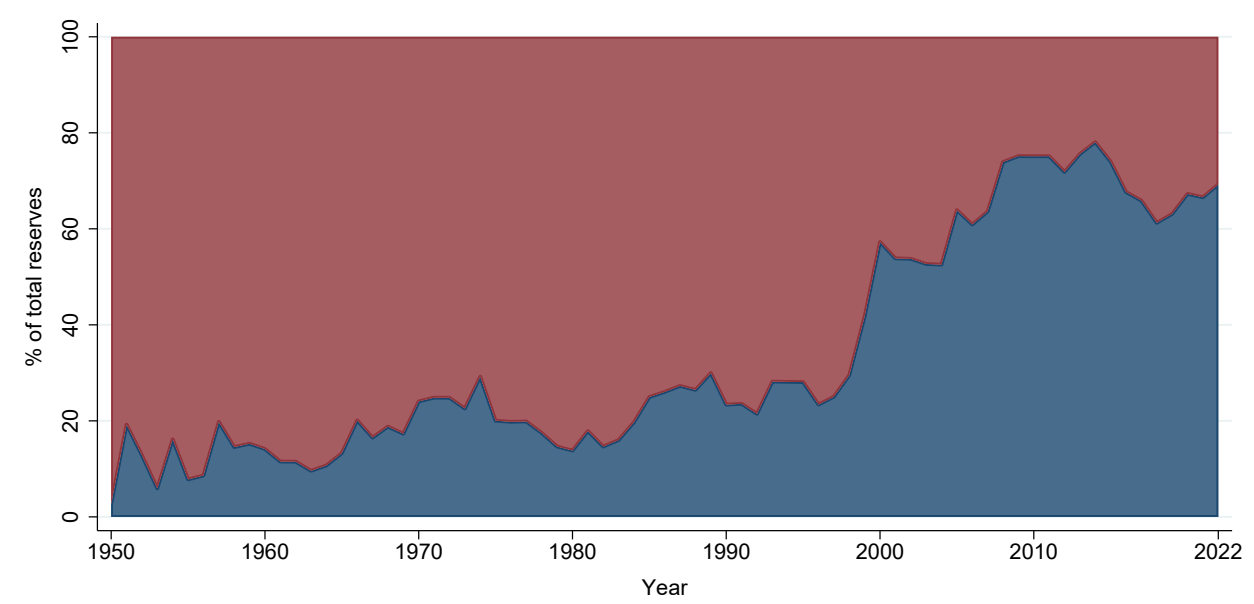
Note: Sample of 109 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.2: Average share of securities and sample size by year. Sample of countries fixed from 1995 onwards.



Note: Sample of 78 countries. No new country entry after 1995.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.3: Median share of securities in FX reserves (in blue), 1950-2022.



Note: Sample of 109 countries. Total FX reserves are the sum of FX deposits and securities. The share of securities is in blue, and the share of deposits in red.
Source: authors' calculations based on CEPII dataset (see the text).

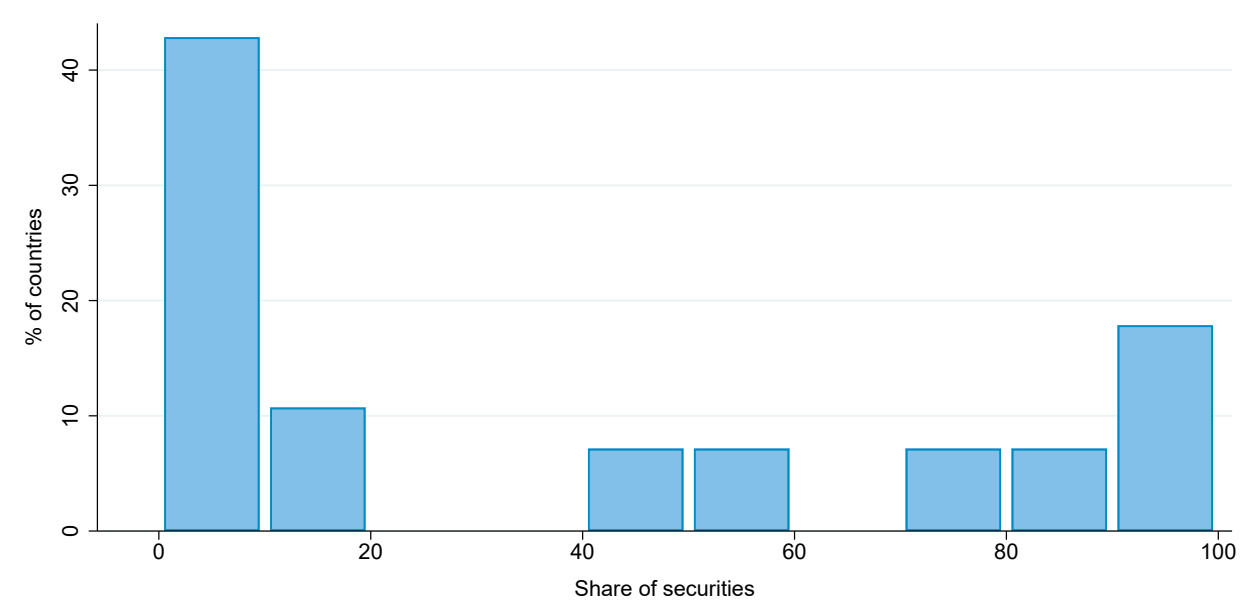
Figure B.4: Average share of securities in FX reserves, by income group

Note: Sample of 109 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.5: Reserves/GDP ratio, by income group

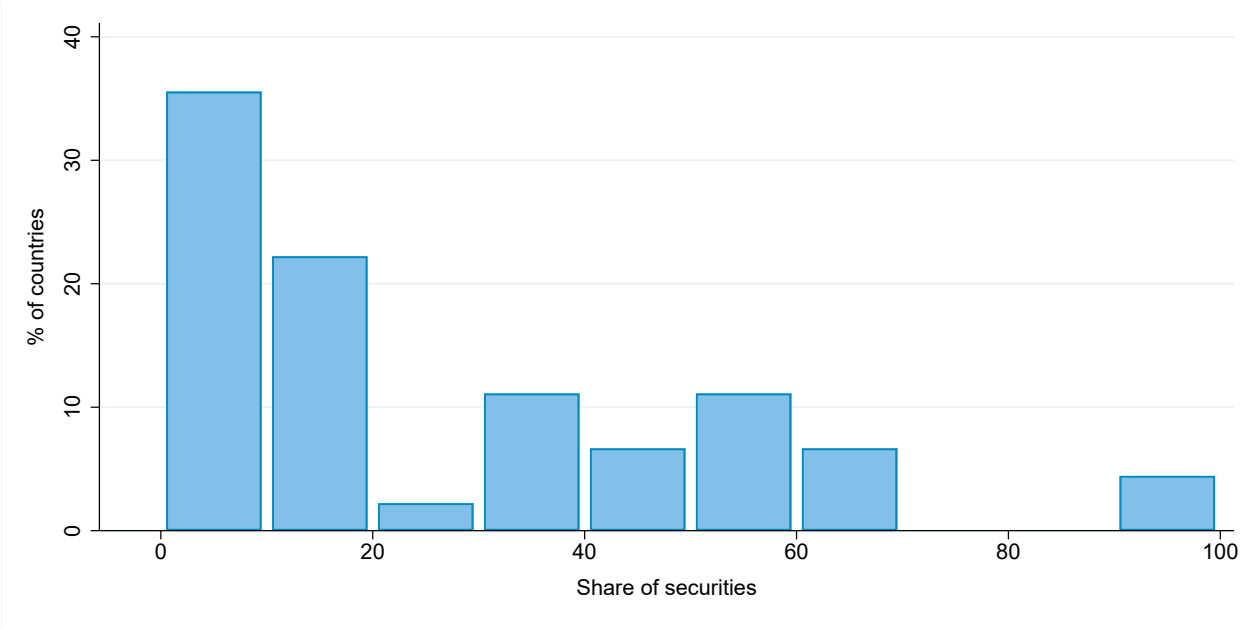
Note: Sample of 109 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.6: Distribution of share of securities, 1960



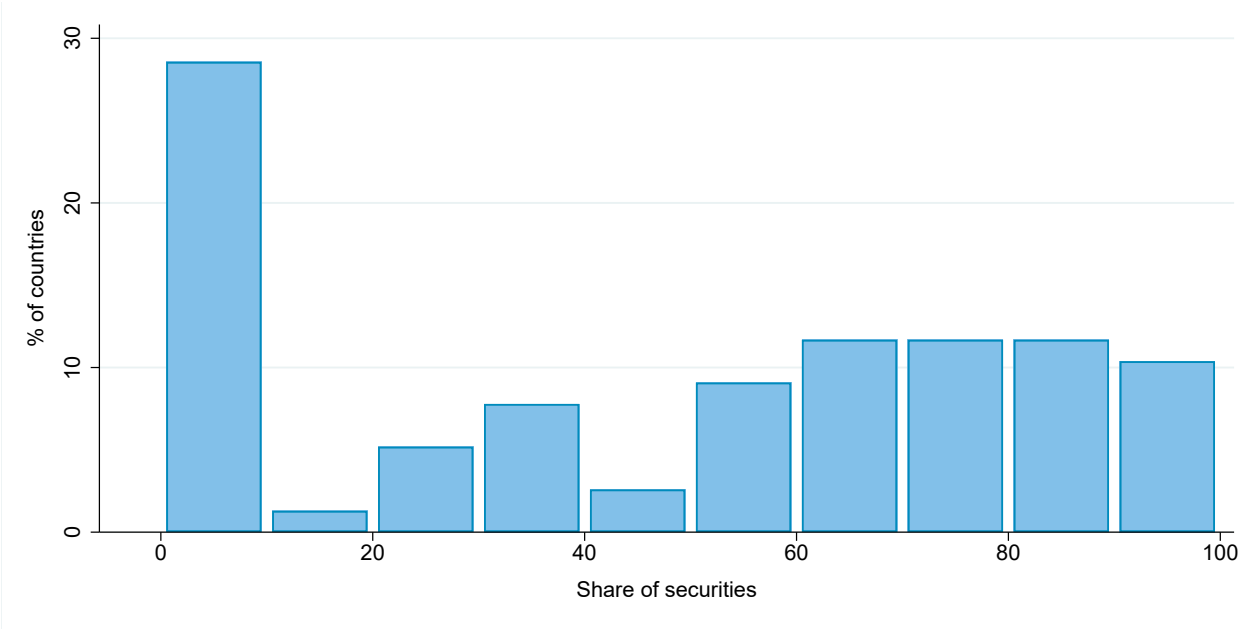
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.7: Distribution of share of securities, 1980



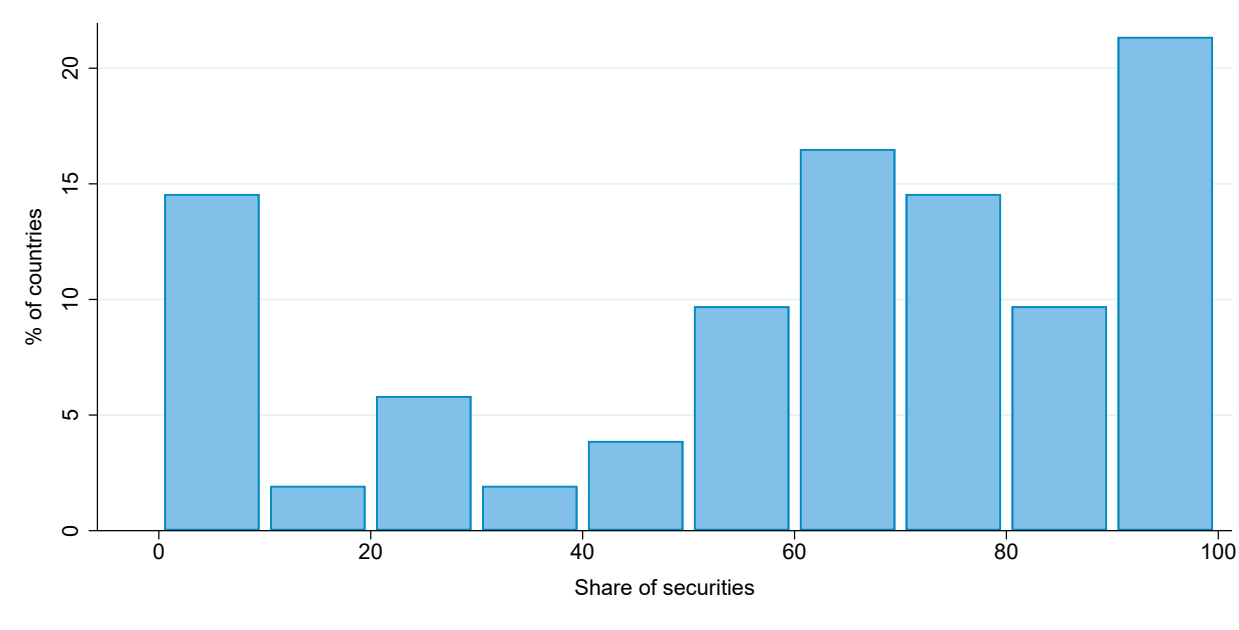
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.8: Distribution of share of securities, 2000



Source: authors' calculations based on CEPII dataset (see the text).

Figure B.9: Distribution of share of securities, 2020



Source: authors' calculations based on CEPII dataset (see the text).

Table B1: **Countries with the highest average share of securities, 1960-80**

	Country	Share of securities	Reserves/GDP
1	**Bahrain**	**97.11369**	**10.71599**
2	**Uganda**	**96.32205**	**.5144895**
3	**Sweden**	**90.91366**	**2.279235**
4	**Pakistan**	**77.98473**	**3.861114**
5	**Ireland**	**69.71387**	**15.57267**
6	**Netherlands**	**64.98808**	**.9629424**
7	**Sudan**	**63.91749**	**3.611022**
8	**India**	**63.50171**	**1.212895**
9	**Iceland**	**61.64546**	**7.119133**
10	**Nepal**	**58.90712**	**6.594913**

Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B2: **Countries with the highest average share of securities, 1980-00**

	Country	Share of securities	Reserves/GDP
1	**Hungary**	**93.84147**	**7.647309**
2	**Cayman Islands**	**92.85189**	
3	**Israel**	**89.39894**	**18.10558**
4	**Indonesia**	**88.30172**	**1.829516**
5	**Denmark**	**85.87637**	**.4011908**
6	**Philippines**	**84.92218**	**4.809718**
7	**Colombia**	**82.4436**	**8.335979**
8	**Namibia**	**81.31622**	**4.593339**
9	**Portugal**	**81.0854**	**.7315618**
10	**Switzerland**	**80.79972**	**6.546525**

Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B3: **Countries with the highest average share of securities, 2000-2020**

	Country	Share of securities	Reserves/GDP
1	**Colombia**	**99.31211**	**11.74347**
2	**Namibia**	**98.49236**	**11.35767**
3	**Finland**	**93.86951**	**2.213913**
4	**Sweden**	**92.72329**	**6.786901**
5	**Switzerland**	**92.12239**	**50.52272**
6	**Korea**	**91.29258**	**22.65102**
7	**Indonesia**	**90.69887**	**13.06821**
8	**Slovakia**	**87.99191**	**4.132175**
9	**Estonia**	**87.69816**	**1.767957**
10	**Hungary**	**86.41132**	**22.40399**

Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B4: **Countries with the highest average reserves/GDP ratio, 1960-1980**

	Country	Share of securities	Reserves/GDP
1	**Saudi Arabia**	**23.80534**	**36.20146**
2	**Jordan**	**41.56881**	**30.10011**
3	**Botswana**	**30.25501**	**25.81655**
4	**Malta**	**51.68325**	**25.03006**
5	**Papua New Guinea**	**53.58762**	**19.85536**
6	**Nicaragua**	**57.51006**	**17.70442**
7	**Ireland**	**69.71387**	**15.57267**
8	**Bahrain**	**97.11369**	**10.71599**
9	**Oman**	**10.11837**	**8.693048**
10	**Kuwait**	**13.02787**	**8.244579**

Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B5: **Countries with the highest average reserves/GDP ratio, 1980-2000**

	Country	Share of securities	Reserves/GDP
1	**Saudi Arabia**	**57.24199**	**55.57242**
2	**Botswana**	**35.36787**	**39.64896**
3	**Malta**	**29.45647**	**35.43374**
4	**Jordan**	**10.14501**	**18.85398**
5	**Israel**	**89.39894**	**18.10558**
6	**Fiji**	**15.36993**	**17.85324**
7	**Trinidad and Tobago**	**42.22339**	**16.53437**
8	**Kuwait**	**4.22555**	**16.27418**
9	**Czechia**	**79.83789**	**15.1755**
10	**Oman**	**20.40531**	**14.51083**

Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B6: **Countries with the highest average reserves/GDP ratio, 2000-2020**

	Country	Share of securities	Reserves/GDP
1	**Singapore**	**85.80588**	**81.98567**
2	**Lebanon**	**21.20258**	**77.47165**
3	**Botswana**	**83.24668**	**60.13254**
4	**Saudi Arabia**	**68.52048**	**59.62737**
5	**Switzerland**	**92.12239**	**50.52272**
6	**Malta**	**68.12144**	**44.05628**
7	**Jordan**	**43.23096**	**38.68993**
8	**Malaysia**	**85.34479**	**36.56708**
9	**Bulgaria**	**72.08881**	**33.73235**
10	**Czechia**	**82.39626**	**30.98922**

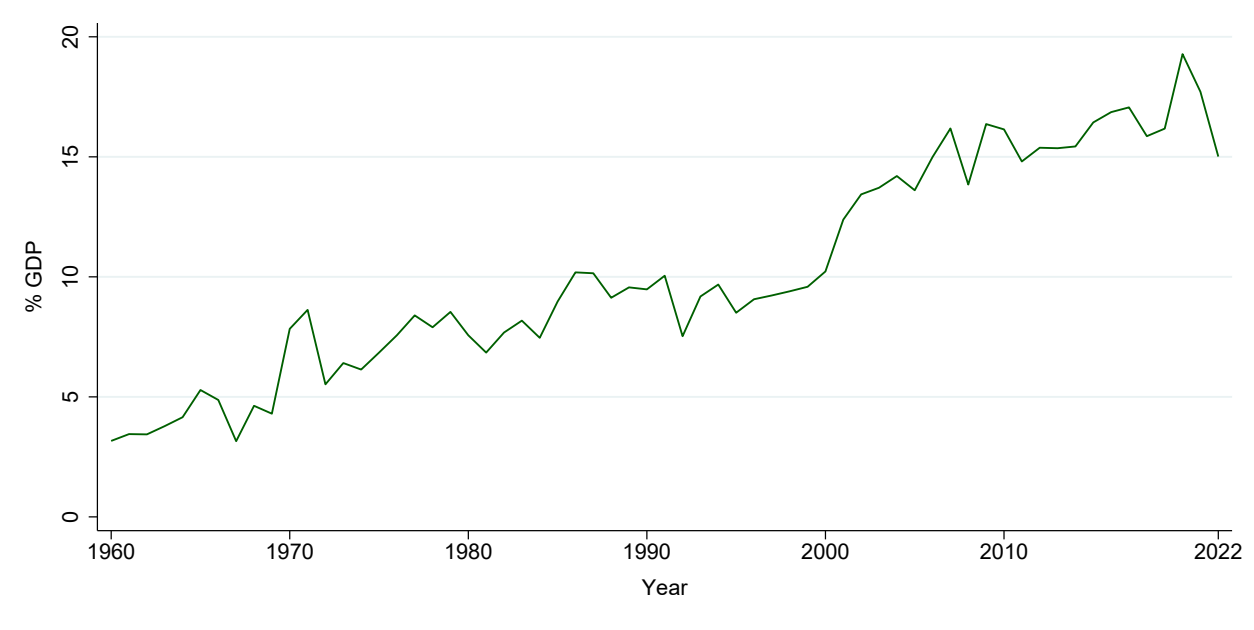
Note: average share of securities, countries with at least 10 observations during the period. Source: authors' calculations based on CEPII dataset (see the text).

Table B7: **Observations with the highest share of securities**

	Country	Year	Share of securities	Reserves/GDP
1	**Slovakia**	**2003**	**99.99306**	**.8872446**
2	**Colombia**	**2006**	**99.98107**	**8.808788**
3	**Colombia**	**2012**	**99.98029**	**9.40531**
4	**Colombia**	**2014**	**99.97815**	**12.53365**
5	**Colombia**	**2008**	**99.9781**	**9.346194**
6	**Colombia**	**2010**	**99.97493**	**9.184919**
7	**Colombia**	**2009**	**99.97305**	**9.944149**
8	**Namibia**	**1993**	**99.97254**	**2.388857**
9	**Colombia**	**2011**	**99.97247**	**8.908381**
10	**Colombia**	**2013**	**99.97035**	**10.76427**
11	**Netherlands**	**2015**	**99.96786**	**1.334257**
12	**Colombia**	**2007**	**99.96488**	**9.528057**
13	**Bulgaria**	**1992**	**99.96075**	**3.627874**
14	**Netherlands**	**2016**	**99.9605**	**1.054197**
15	**Kenya**	**1967**	**99.95793**	**3.058536**
16	**Belgium**	**2023**	**99.95502**	**1.416473**
17	**Colombia**	**2015**	**99.94578**	**16.34415**
18	**Netherlands**	**2013**	**99.94215**	**1.298244**
19	**Chile**	**1997**	**99.9401**	**21.31185**
20	**Netherlands**	**2014**	**99.93626**	**1.384834**

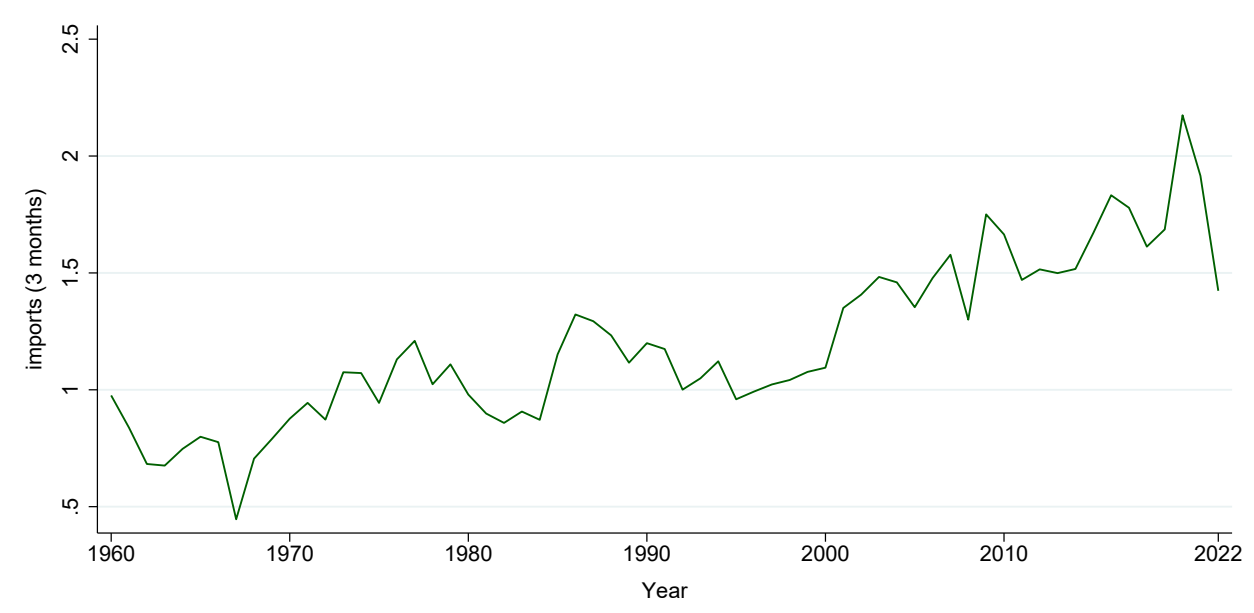
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.10: Average reserves/GDP ratio



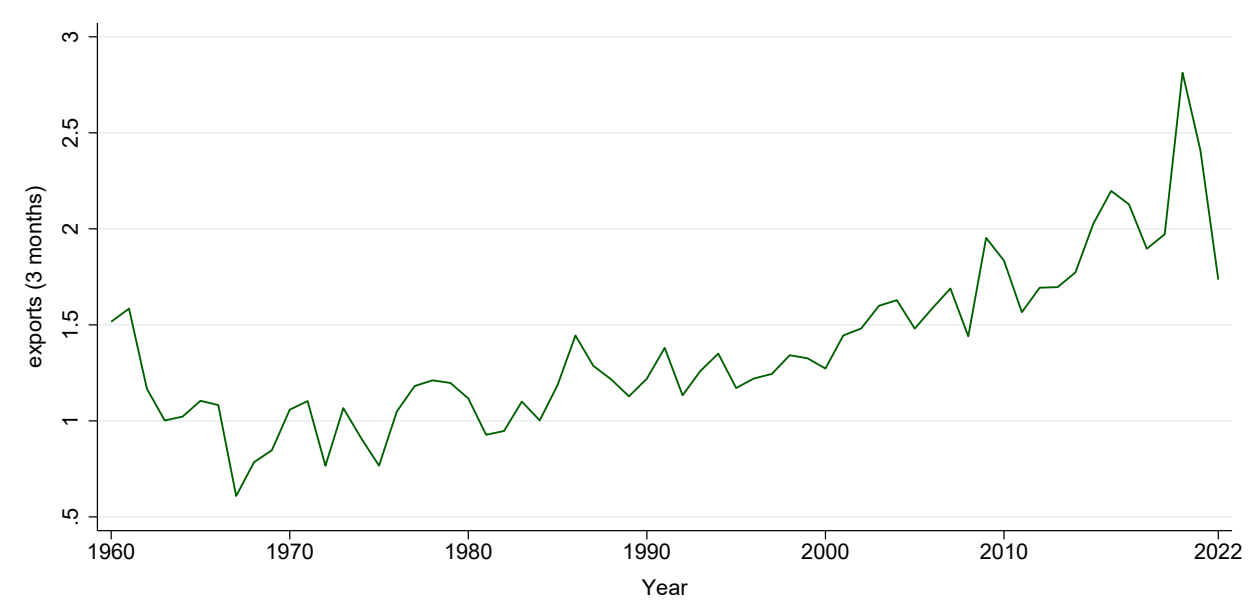
Note: Unbalanced panel of 109 countries over time.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.11: Average reserves/imports (3 months) ratio



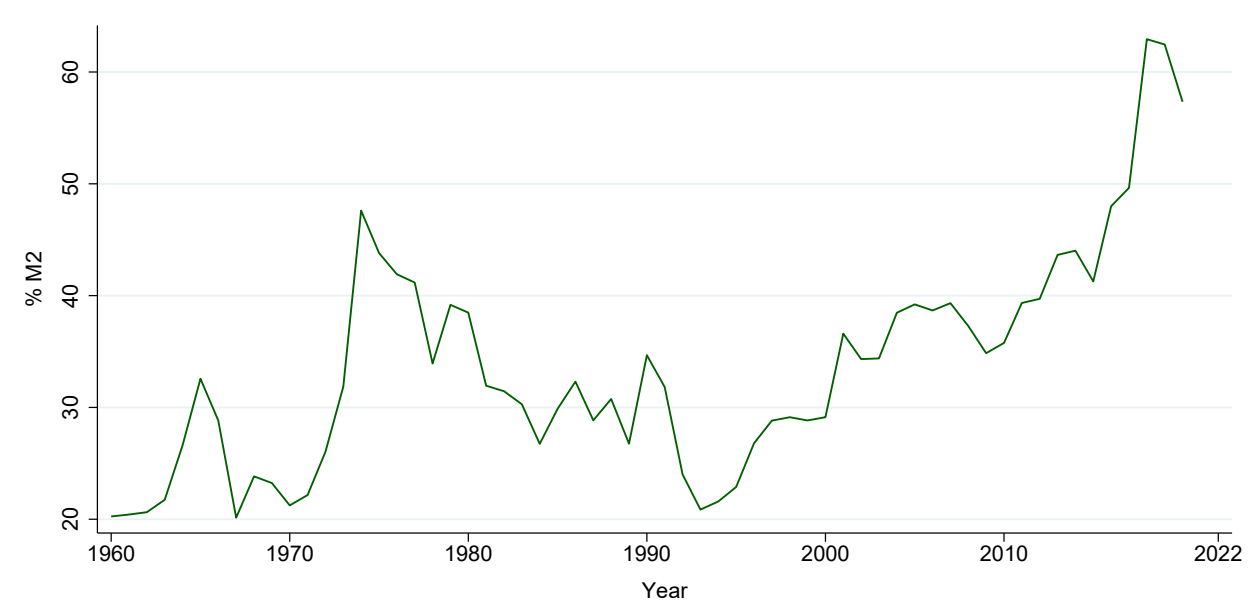
Note: Unbalanced panel of 102 countries over time.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.12: Average reserves/exports (3 months) ratio



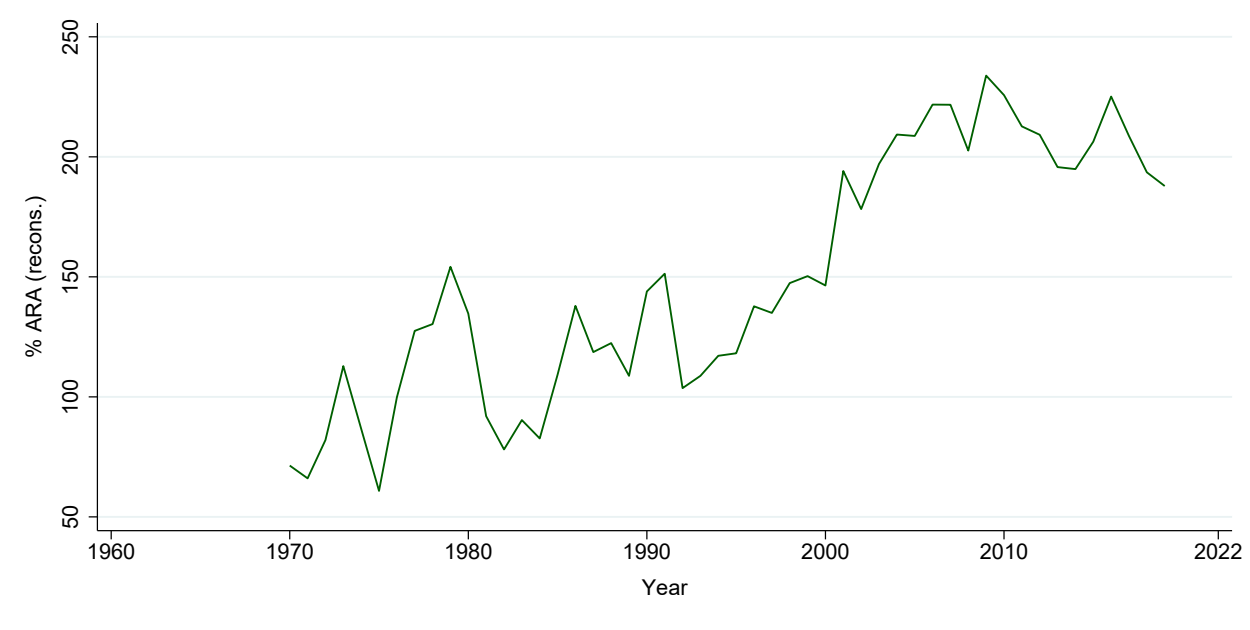
Note: Unbalanced panel of 102 countries over time.
Source: authors' calculations based on CEPII dataset (see the text).

Figure B.13: Average reserves/M2 ratio



Note: Unbalanced panel of 85 countries over time.
Source: authors' calculations based on CEPII dataset (see the text).

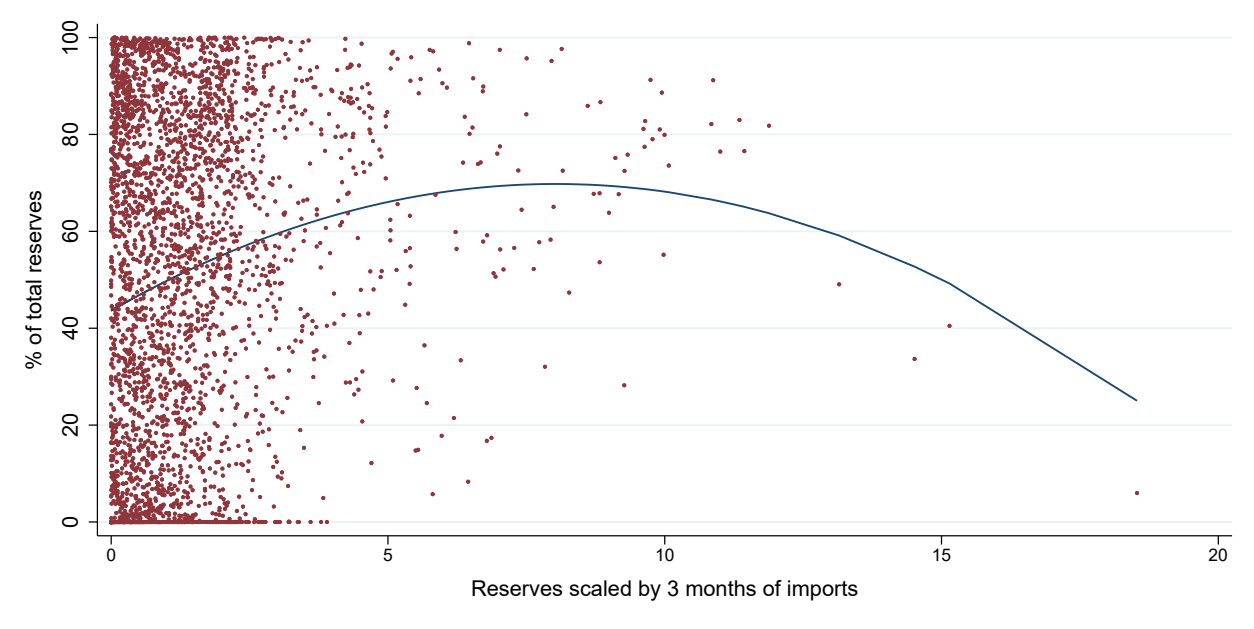
Figure B.14: Average reserves/ARA (recons.) ratio



Note: Unbalanced panel of 49 countries over time.
Source: authors' calculations based on CEPII dataset (see the text).

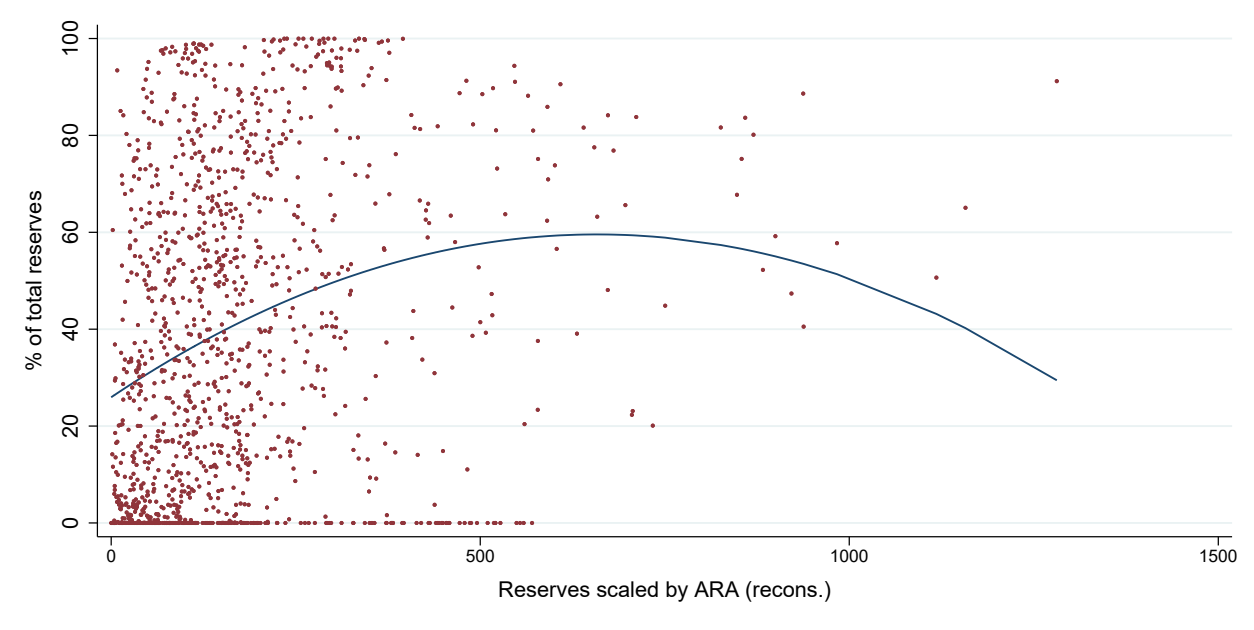
Appendix C Additional regressions

Figure C.1: Share of securities and reserves/imports, non-linear fit, CEPII data, 1950-2023



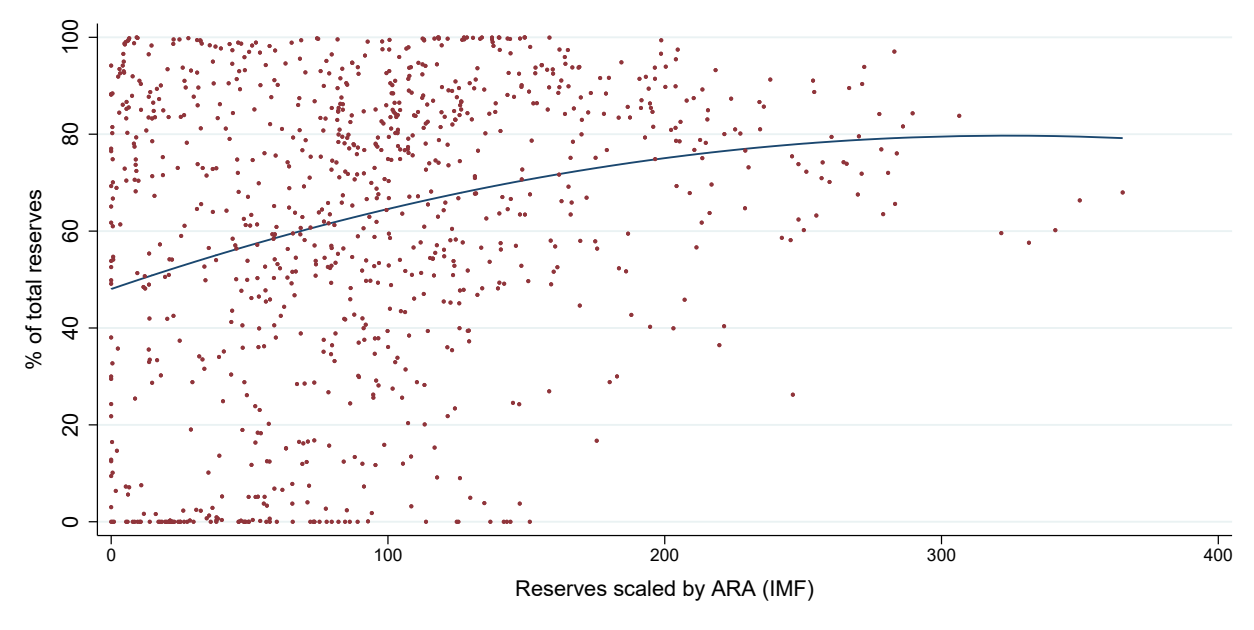
Note: Sample of 102 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Figure C.2: Share of securities and reserves/ARA (recons.), non-linear fit, CEPII data, 1950-2023



Note: Sample of 49 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Figure C.3: Share of securities and reserves/ARA (IMF), non-linear fit, CEPII data, 1950-2023



Note: Sample of 49 countries.
Source: authors' calculations based on CEPII dataset (see the text).

Table C1: Share of securities in FX reserves, IMF data, 1999-2024

	(1)	(2)	(3)	(4)
Reserves/imports (3 months)	1.336**	2.247***	1.113	2.286
	(0.411)	(0.467)	(0.714)	(1.651)
Trade/GDP		0.035***	-0.043	-0.040
		(0.010)	(0.029)	(0.029)
Capital openness		8.092***	1.823	1.859
		(2.344)	(3.797)	(3.798)
Real GDP p.c. (log)		6.111***	13.296**	13.327**
		(0.705)	(4.832)	(4.833)
ER regime		4.000**	1.674	1.682
		(1.367)	(1.768)	(1.768)
Squared reserves/imports				-0.189
				(0.239)
Constant	73.269***	1.072	-46.249	-48.549
	(12.088)	(12.456)	(40.047)	(40.159)
Observations	1697	1274	1274	1274
Countries	91	80	80	80
R-squared	0.023	0.173	0.680	0.680
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	1274	73.26	23.34	-0.00	99.89
Reserves/imports (3 months)	1274	1.54	1.40	0.00	11.10

Table C2: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/exports (3 months)	-0.006***	1.284**	2.495**	6.261***
	(0.000)	(0.442)	(0.920)	(1.418)
Trade/GDP		0.012	0.039	0.060
		(0.012)	(0.036)	(0.035)
Capital openness		0.868	6.713	6.293
		(3.103)	(3.524)	(3.581)
Real GDP p.c. (log)		6.564***	12.127***	12.120***
		(1.321)	(2.691)	(2.676)
ER regime		8.216***	5.608***	5.471***
		(2.022)	(1.286)	(1.326)
Squared reserves/exports				-0.424***
				(0.111)
Constant	33.578***	-18.830*	-88.875***	-93.457***
	(0.000)	(8.891)	(15.696)	(15.847)
Observations	3391	2802	2802	2802
Countries	102	96	96	96
R-squared	0.167	0.261	0.598	0.603
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2298	45.61	34.67	0.00	99.98
Reserves/M2 (%)	2298	33.50	45.63	0.00	789.98

Table C3: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/M2 (%)	-0.001	0.047*	0.068	0.269***
	(0.012)	(0.023)	(0.039)	(0.046)
Trade/GDP		-0.025	-0.116*	-0.122*
		(0.021)	(0.046)	(0.048)
Capital openness		-1.478	4.622	4.136
		(3.761)	(3.484)	(3.321)
Real GDP p.c. (log)		6.154***	11.080***	11.528***
		(1.219)	(2.838)	(2.917)
ER regime		11.668***	9.658***	10.456***
		(2.376)	(1.474)	(1.445)
Squared reserves/M2				-0.000***
				(0.000)
Constant	37.629***	-10.261	-67.402***	-79.091***
	(0.253)	(8.220)	(14.870)	(17.087)
Observations	3103	2298	2298	2298
Countries	86	77	77	77
R-squared	0.133	0.226	0.593	0.603
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	1531	44.35	33.39	0.00	100.00
Reserves/M2 (%)	1531	34.37	49.38	0.00	789.98

Appendix D Geoeconomics

Table D1: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/GDP (%)	-0.001***	0.226***	0.172*	0.695***
	(0.000)	(0.051)	(0.078)	(0.174)
Trade/GDP		-0.016	-0.017	-0.014
		(0.013)	(0.024)	(0.023)
Capital openness		-0.402	9.873**	9.444*
		(2.616)	(3.570)	(3.745)
Real GDP p.c. (log)		4.286***	9.755*	8.979*
		(1.216)	(3.925)	(3.865)
ER regime		8.027***	4.680**	4.565**
		(1.947)	(1.715)	(1.687)
Sterling area		55.610***	53.573***	52.706***
		(12.976)	(9.219)	(9.157)
Geopolitical proximity with US		54.184***	-2.458	-4.404
		(6.336)	(20.208)	(19.924)
Squared reserves/GDP				-0.006***
				(0.002)
Constant	31.506***	-37.306***	-80.823**	-78.340**
	(0.000)	(9.815)	(28.656)	(29.180)
Observations	3773	2697	2697	2697
Countries	108	96	96	96
R-squared	0.168	0.312	0.629	0.633
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2697	49.03	34.63	0.00	99.99
Reserves/GDP (%)	2697	13.04	16.55	0.00	121.87

Table D2: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/imports (3 months)	-0.020***	2.858***	2.968***	5.276***
	(0.001)	(0.419)	(0.631)	(1.408)
Trade/GDP		0.025*	0.015	0.028
		(0.012)	(0.027)	(0.029)
Capital openness		-0.826	9.313**	9.155*
		(2.598)	(3.445)	(3.434)
Real GDP p.c. (log)		3.867**	8.606*	8.423*
		(1.254)	(4.048)	(3.920)
ER regime		7.963***	4.812**	4.801**
		(1.916)	(1.702)	(1.688)
Sterling area		55.864***	52.456***	52.326***
		(13.110)	(9.215)	(9.232)
Geopolitical proximity with US		58.620***	-2.211	-2.030
		(6.393)	(19.902)	(19.625)
Squared reserves/imports				-0.272*
				(0.114)
Constant	35.066***	-38.930***	-77.277*	-78.728**
	(0.001)	(9.901)	(29.461)	(28.551)
Observations	3321	2697	2697	2697
Countries	102	96	96	96
R-squared	0.165	0.318	0.632	0.633
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2697	49.03	34.63	0.00	99.99
Reserves/imports (3 months)	2697	1.38	1.55	0.00	15.14

Table D3: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/exports (3 months)	-0.006***	1.732**	1.860*	5.041***
	(0.000)	(0.506)	(0.810)	(1.187)
Trade/GDP		0.023	0.008	0.027
		(0.013)	(0.029)	(0.028)
Capital openness		-0.357	9.272*	8.794*
		(2.738)	(3.562)	(3.635)
Real GDP p.c. (log)		4.692***	9.881*	9.929*
		(1.204)	(3.936)	(3.976)
ER regime		8.472***	5.018**	4.936**
		(1.926)	(1.710)	(1.701)
Sterling area		55.417***	53.045***	52.380***
		(12.956)	(9.157)	(9.157)
Geopolitical proximity with US		51.935***	-2.597	-3.043
		(6.236)	(19.953)	(19.603)
Squared reserves/exports				-0.345***
				(0.097)
Constant	35.056***	-41.259***	-83.057**	-86.549**
	(0.000)	(9.998)	(28.599)	(29.392)
Observations	3321	2697	2697	2697
Countries	102	96	96	96
R-squared	0.165	0.310	0.630	0.633
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2697	49.03	34.63	0.00	99.99
Reserves/exports (3 months)	2697	1.53	1.71	0.00	16.70

Table D4: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/M2 (%)	-0.003	0.055*	0.058	0.243***
	(0.012)	(0.023)	(0.034)	(0.035)
Trade/GDP		-0.012	-0.155***	-0.160***
		(0.023)	(0.042)	(0.043)
Capital openness		-1.365	7.811*	7.147*
		(3.377)	(3.430)	(3.307)
Real GDP p.c. (log)		4.679***	7.569	7.939
		(1.267)	(4.104)	(4.374)
ER regime		11.126***	9.684***	10.342***
		(2.174)	(1.988)	(1.944)
Sterling area		56.505***	50.402***	50.303***
		(13.787)	(8.801)	(9.004)
Geopolitical proximity with US		51.917***	-14.981	-17.778
		(9.089)	(25.575)	(24.948)
Squared reserves/M2				-0.000***
				(0.000)
Constant	34.339***	-39.792***	-48.351	-56.917
	(0.387)	(8.192)	(28.979)	(32.803)
Observations	2993	2197	2197	2197
Countries	85	77	77	77
R-squared	0.134	0.278	0.634	0.642
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	2197	46.27	34.57	0.00	99.98
Reserves/M2 (%)	2197	34.12	46.21	0.00	789.98

Table D5: Share of securities in FX reserves, CEPII data, 1950-2023

	(1)	(2)	(3)	(4)
Reserves/ARA (recons.) (%)	0.042***	0.035***	0.043***	0.073**
	(0.006)	(0.005)	(0.010)	(0.023)
Trade/GDP		-0.073**	-0.056	-0.064
		(0.027)	(0.044)	(0.047)
Capital openness		1.430	9.002*	8.094
		(4.202)	(4.059)	(4.292)
Real GDP p.c. (log)		5.202**	19.693***	20.398***
		(1.702)	(2.832)	(2.747)
ER regime		9.129*	5.913*	5.426*
		(3.660)	(2.250)	(2.228)
Sterling area		45.375***	52.563***	52.433***
		(4.265)	(6.181)	(6.235)
Geopolitical proximity with US		10.507	40.535	38.166
		(29.550)	(21.542)	(21.423)
Squared reserves/ARA (recons.)				-0.000
				(0.000)
Constant	33.132***	-25.580*	-172.628***	-178.818***
	(0.411)	(11.204)	(18.582)	(18.418)
Observations	1298	1287	1287	1287
Countries	49	49	49	49
R-squared	0.118	0.164	0.632	0.634
Year FE	Yes	Yes	Yes	Yes
Country FE	No	No	Yes	Yes

Driscoll–Kraay standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

	N	Mean	SD	Min	Max
Share of securities	1287	37.83	32.85	0.00	99.98
Reserves/ARA (recons.) (%)	1287	170.30	157.31	0.03	1281.22