Online Appendix to
"International Currencies and Capital Allocation"

[NOT FOR PUBLICATION]

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In this Online Appendix, we start by describing the construction of our dataset. We then discuss various robustness exercises, including conducting our analyses without matching issuers to their ultimate parents and without the holdings of funds domiciled in the EMU. We report additional results, such as the currency shares in sovereign bond holdings, our fund-level analyses at the country level, comparisons of domestic and foreign portfolio shares held in local-currency-only issuers at the industry level, and a comparison of these portfolio shares for equity and debt securities. Finally, we demonstrate that several of our results on how capital allocation to the US differs due to the dollar's international currency status attenuate when we conduct our analyses before the global financial crisis.

A.1 Dataset Construction

In this section of the Appendix, we discuss the construction of our dataset of global mutual fund and ETF holdings. Our primary data are provided by Morningstar, are monthly, and report the individual positions held by thousands of funds domiciled around the world. Morningstar identifies funds in their position-level data with a 7-digit "Master Portfolio ID" that can be mapped to a Morningstar "Fund ID" used in other files that include fund-level information on characteristics such as domicile and base currency of reporting.

Each fund reports the market value of its positions in a base currency, the currency used to report the returns of the fund. We use the end-of-month spot exchange rate to convert the market value of all positions to US dollars. In addition to the market value of all positions, the data describe the type of security (e.g. equity, corporate bond, sovereign bond, etc...), the currency of denomination, the country and sector of activity of the borrower, the CUSIP of the security, the ISIN of the security, the coupon, and the date of maturity.

Some fields are not standardized in the raw Morningstar data. For example, two funds can buy the exact same security, report the same CUSIP, coupon, and maturity dates, and have different security names. For instance, two funds can both own a Goldman Sachs dollar-denominated bond

with a 5 percent coupon maturing on December 31st, 2020, but one fund names the bond "Goldman Sachs Co." and the other fund names it "Goldman Sachs 12/31/20 5%". Analogous discrepancies occasionally occur across funds for other fields such us currency, type of security, or country. We standardize such entries by setting all fields for each CUSIP equal to their modal value across all funds in the data. For example, if a particular CUSIP is most often described by funds as a corporate bond, we impose that classification for all entries in our data for that CUSIP. For the currency field, we override the modal assignment in the rare cases in which it disagrees with external sources such as the Bloomberg open-source figi file.

We connect all securities to an ultimate parent issuer, which also determines the country of the issuer. We do this using the algorithm detailed in Coppola, Maggiori, Neiman and Schreger (2019), which combines information from SDC, Capital IQ, CUSIP Global Services, Factset, Dealogic, and Orbis. When a parent issuer is listed as domiciled in a tax haven, such as the Cayman Islands or Bermuda, we instead use the non-tax-haven country most frequently reported by the primary sources. We assign the nationality of the issuer as being the nationality of the ultimate parent company in order to more closely relate to the concept of nationality of an issuer as used in official public statistics. See Coppola et al. (2019) for a detailed account of the aggregation procedure and a summary of the reclassification across countries and industries implied by the procedure. Below, we demonstrate that our key results do not change qualitatively if we instead assume the identities of issuers and their nationalities using only the raw Morningstar data.

A number of records in the data are missing the CUSIP security identifier. If an ISIN is present, we fill in the CUSIP based on the master file provided by CGS that maps these two identifiers. The Morningstar dataset includes the field "external id", which is intended for funds to identify their own positions without any further prescriptions on its usage. Many funds often use one or more of the following lesser known identifiers within this field, including SEDOL, CUSIP8, COMMON, BLOOMBERG ID, ISIN, and FIGI. We parse the external id field for alphanumeric codes which are candidates for each of these identifiers, and scrape the open source website openfigi.com for matches on these records. For successful matches, we fill in the CUSIP information as provided by the openfigi service.

In the remaining cases for which a security identifier could not be obtained with the methods described above we perform a fuzzy merge within the Morningstar data to find possible matches. Intuitively, this procedure looks for records within the Morningstar data that have similar characteristics in terms of name, coupon, maturity, security type, and currency. We use the procedure with a conservative threshold and only accept matches of high quality.

A final transformation of the data unwinds positions of a fund in other funds, such as when a mutual fund holds shares in an ETF. We refer to a fund holding such a position as the "holding fund", and to the fund whose shares are in the holding fund's portfolio as the "investing fund". We

reallocate positions away from the investing fund into the holding fund in proportion to the market value of the investing fund that is held by the holding fund.[1]

A.2 Comparisons with Other Public Data Sources

In this section of the Appendix, we report the coverage of our mutual fund and ETF data relative to aggregates provided by the Investment Company Institute (ICI), compare portfolio shares in our data with those reported by the US Treasury's International Capital Flow data (TIC) and by the IMF's Consolidated Portfolio Investment Survey (CPIS), and confirm that the shift from use of euros to US dollars for denominating bonds held by foreign investors is also present in Bank for International Settlement (BIS) data covering a somewhat different set of fixed income securities.

A.2.1 Comparisons to Mutual Fund and ETF AUM in ICI Data

Section 2 of the main text compared the total AUM in our data and in ICI's aggregate reporting for fixed income funds domiciled in the US and abroad. Figures A.1 and A.2 offer additional comparisons, including for equity and allocation funds.

Figure A.1a demonstrates that our data exhibit meaningful coverage of overall US-domiciled fund AUM starting in the mid-1990s and by the end of the series account for more than 95 percent of the total value reported by ICI. Figures A.1b, A.1c, and A.1d plot equivalent comparisons for the value of AUM broken down by funds specializing in equities, fixed income, and allocation (or hybrid), respectively. By the end of the sample, the coverage of our data for the US is nearly complete across all major types of funds.

Our data also include holdings of funds domiciled in more than 50 other countries. Substantial coverage of these funds in our data starts in the early-to-mid 2000s. Figures A.2a and A.2b show that over the last decade our data capture between half and two-thirds of equity and fixed-income funds outside the US. Figures A.2c and A.2d further show that our data on funds domiciled in the European Monetary Union (EMU) and the UK track over time the equivalent aggregates provided by ICI.

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[1]Since derivatives are reported erratically and often enter with negative signs, we use a conservative approach in reallocating positions of investing funds that have large negative market value positions (i.e. shorts and derivatives). For those funds, we use the total absolute value of positions rather than the net value, thus effectively reducing the share held in these holding funds by any investing funds.

A.2.2 Comparisons to Portfolio Shares in US TIC Data

We compare the positions of US-domiciled funds in our data to the positions reported in TIC for total fixed income and equity foreign investment by US residents. Figures A.3a and A.3b plot US positions in each foreign country as shares of total outward investment from the United States in equities and fixed income, respectively. The x-axis in these figures captures the share of a country in the total positions in the TIC data and the y-axis captures the country's share in our fund data. We plot data from 2005, 2010, and 2017 and distinguish these years with different marker shapes.

In Figure A.3a nearly all countries closely bunch along the solid 45 degree line across all three years, indicating that our data are highly representative of overall capital flows within outward equity investment. Among the few data points that lie away from the line are Bermuda (BMU) and the Cayman Islands (CYM), major tax havens for the United States. The data in Figure A.3b also cluster around the 45 degree line, but some important countries, including Great Britain and Canada, have larger portfolio shares in TIC than in our data.

Figures A.3c and A.3d plot investment in the US by each foreign country as a percentage of total Rest of the World investment in equities and fixed income, respectively. A clear pattern emerges. On the one hand, countries in the EMU appear to represent significant shares of foreign investment in US equities and fixed income securities, though the shares are significantly higher in our mutual fund data than in the TIC data. On the other hand, there are also large inward flows from China and the Cayman Islands in the TIC data, whereas these countries invest almost nothing in the US through mutual funds in our data. Some of these instances, particularly for fixed income, reflect foreign official holdings of US Treasuries.

For US outward investment in foreign fixed income, we can further decompose the holdings into the intersection of four categories: Dollar-denominated or local-currency-denominated (LCU) debt, and sovereign or corporate debt. Figure A.4 plots the corresponding portfolio shares across destination countries. Within all four categories there is a strong positive correlation between the portfolio shares in the TIC and our mutual fund data.

A.2.3 Comparisons to Portfolio Shares in IMF CPIS Data

For countries other than the US, the quality of data that can be used to benchmark the Morningstar data sharply deteriorates. The most common source of data on bilateral cross-border investment is the CPIS dataset. While CPIS is certainly imperfect, it offers the advantage for our purpose of covering all the ten countries that we include in our benchmark analyses. Figures A.5-A.7 plot each non-US country's investments in a set of foreign countries as shares of total outward investment in equities (left hand panels) and fixed income (right hand panels). For example, Figure A.5b plots the investments by Australia in the bonds of each foreign country expressed as a percentage of all

foreign bonds bought by Australia. Overall, the CPIS data for all these countries is consistent with our data from Morningstar.

CPIS has recently included data on the currency composition of foreign investment for a few selected countries. Unfortunately, these data do not offer the currency split by type of bonds (corporate or sovereign) or by country of destination of the investment. Table A.1 compares the CPIS data to our benchmark sample of Morningstar data for all countries that are present in both. For Canada, Denmark, Switzerland, and the US the currency composition in CPIS and Morningstar is overall similar.

For EMU-member countries the CPIS data considers all investments done in other EMU-member states as foreign investment. CPIS data do not offer a consolidated currency breakdown of EMU investment. For EMU-member countries included in this table, we use the same definition of foreign investment as in CPIS. For example, we include the investments of Italian funds in German bonds as foreign investments of Italy. This is in contrast with the rest of the paper in which we only consider the EMU as a consolidated entity and, therefore, would have considered the investments in this example as being domestic investments of the EMU. The CPIS procedure clearly induces a high percentage of investment in foreign bonds by EMU-member states to be in euros. Nonetheless, our data tracks the CPIS data.

A.2.4 Comparisons to Currency Shares in BIS Data

Section 5 demonstrated in our data a shift since the global financial crisis from use of the euro toward the use of the dollar in denominating securities held by foreign investors. Here, we demonstrate that this pattern also holds in related data reported by the BIS. Figure A.8 plots our data for the "All Bonds, International Positions" – the same used in Figure 11a – as well as the closest equivalent from the BIS International Debt Statistics data. We compute measures of the share of international issuance denominated in USD and EUR from the BIS International Debt Statistics by restricting the field "Issue currency group" to "F: Foreign currencies". We then compute the percentages of the portfolio across all countries that are accounted for by USD and EUR denominated bonds, respectively. Although the definition of cross-border positions for this calculation using the BIS data is not identical to the rest of the paper, we see that the pattern of the rise of the dollar and fall of the euro is very similar using this alternative dataset.

A.3 Robustness to Features of Our Dataset Construction

In this section of the Appendix, we report key results when we do not match subsidiaries to their parents and when we exclude all funds domiciled in the EMU, including those from Luxembourg

and Ireland. Our key results are qualitatively robust to all of these exercises.

A.3.1 Excluding the Coppola et al. Parent-Matching Algorithm

The main body of the paper associates firms with their ultimate parent using the methodology in Coppola et al. (2019). All bonds issued by subsidiaries are considered as issued by the ultimate parent. This allows a consolidated view of firms' bond liabilities. In this section we perform our benchmark analyses without this aggregation. This affects two distinct but interconnected issues. First, it means that two bonds will only be associated with the same issuer if they share the same CUSIP6 in the raw data from Morningstar (augmented by our fuzzy merge algorithm for missing CUSIPs). Second, the country of the issuer will now be taken as that reported in the Morningstar data (after the standardization of this field across all Morningstar data).

Figure A.9 and Table A.2 reproduce, using data unaffected by the parent-matching algorithm, the results in Figures 2 and 9a and in Table 2 from the main body. The results are quite similar for Figure 2, implying that the country re-classification arising from the parent aggregation is not qualitatively important for this result. For the equivalent of Figure 9a, the qualitative results are unchanged, with the United States remaining the major exception where foreign and domestic investment into LC-only firms looks relatively similar. Without the parent-firm aggregation, the data imply that more investment goes to LC-only firms. The reason for this is that without the parent-firm aggregation, if the same firm divides its issuance among multiple CUSIP6, then the resulting issuance will only be classified as MC if multiple currencies are issued within the same CUSIP6. If, however, the same firm uses different CUSIP6 to issue in different currencies, then omitting the parent-firm aggregation will overstate the amount of issuance that occurs only in local currency, consistent with what we find here.[2]

A.3.2 Excluding Funds Domiciled in the EMU

Luxembourg and Ireland account for the vast majority of AUM for mutual funds domiciled in the EMU. For example, 85 percent of all investment in foreign (i.e. not EMU) bonds by EMU funds are undertaken by funds domiciled in Luxembourg and Ireland and a large share of all EMU investment in our dataset comes from these two countries. While these patterns are consistent with the structure of the mutual fund industry in the EMU, we perform below a robustness check on our

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[2]This can be seen even more clearly by comparing Tables 2 and A.2. The first thing to note is that without the parent-firm aggregation, we treat the data as if there are now 13,259 firms (unique CUSIP6) rather than the 7,802 firms in the baseline case. Because these regressions include firm fixed effects, this means that the number of observations we use to estimate the coefficient of interest is significantly reduced, as all LC-only issuance is absorbed by the firm fixed effects. The qualitative conclusions from these regressions are unchanged, but there are some differences in the level of the coefficient estimates across the two different samples for these reasons.

main empirical results by dropping the entire EMU, including Luxembourg and Ireland, from the data.[3]

Figure A.10 and Table A.3 reproduce, after excluding the EMU, the analyses in Figures 2 and 9a and in Table 2 from the main body. The two panels in Figure A.10 are quite similar to the versions reported in the main text that includes the EMU. The regression results are qualitatively similar. The exclusion of the EMU leads the estimates of home currency bias to generally increase. This is particularly the case for the European countries, where the EMU presumably would have been a relatively more important buyer of local currency bonds than the US. However, the finding of strong home-currency bias within the firm is maintained after dropping the EMU.

A.4 Additional Results

In this section of the Appendix, we report a number of additional results referenced in the main text. We start by reporting currency shares among sovereign bond portfolios. We next offer country-level versions of our fund-level analysis in Section 3.3, as well as accompanying regression tables. Additionally, we report a version of the probit analyses in Section 4.1 that controls for the international sales share of the issuer, offer versions of Figure 8 separated by industry, reproduce Figure 5 taking foreign currency issuance shares from SDC and Dealogic data, and compare portfolio shares for equity and debt securities of local-currency and multi-currency issuers. We use TIC data to show that most outward investment by funds is not destined for other funds, and most inward investment in funds is not coming from other foreign funds, evidence supportive of our assumption that funds typically invest on behalf of domestic investors. We conclude by reporting several of our cross-sectional results for 2005, rather than 2017, and demonstrating that the difference in international currency status between the euro and US dollar appears to be more muted earlier in our sample.

A.4.1 Currency Bias in Bilateral Portfolios

Figure 2 from the main body of the paper computes the currency composition of foreign investment in a destination country by simply summing up positions held by all countries in our sample other than the destination country. Here we show that the main result, i.e. that foreigners buy much less of the local currency bonds in the destination country (except in the US), holds on a bilateral basis. Figure A.11a shows the fraction of all corporate bonds that each investor country, listed on the x-axis, buys from EMU issuers that are denominated in euros. It confirms that all countries (other

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[3]Once Luxembourg and Ireland are dropped the remaining funds in the EMU are a selected sample of largely domestic oriented funds. We feel that these funds are not representative of EMU investment and therefore drop the entire EMU from the analysis.

than Denmark) buy only a small fraction of the bonds in euros. Figure A.11b shows the fraction of all corporate bonds denominated that each source country, listed on the x-axis, buys from US issuers that are denominated in US dollars. Unlike the case for EMU issuers, most countries buy substantial shares of US issued bonds denominated in the currency of the issuer.

A.4.2 Currency Bias in Sovereign Bonds

Figure 2 in the main text demonstrates that bonds denominated in the issuer's currency are far more prevalent in domestic than in foreign corporate bond portfolios. Figure A.12 performs the same analysis but for sovereign bonds and finds the same pattern, though it is far more muted. Most developed countries' sovereigns issue a very limited amount of foreign currency bonds (the US government, for example, does not issue in foreign currency). Foreigners are disproportionately likely to buy those few foreign-currency denominated sovereign bonds, but still do buy substantial amounts of local-currency bonds.

A.4.3 Additional Detail on the Fund-level Analyses

Section 3.3 included plots of the shares of foreign corporate bonds denominated in funds' home currencies (Figure 4a) and in either funds' home currencies or in US dollars (Figure 4b). The figures in the main text focused on the 300 funds with largest external corporate bond positions in our data across all fund domiciles. Figures A.13a and A.13b offer equivalent plots from conducting the analysis separately for each of our 10 domicile countries. The patterns in each domicile are similar. Most funds invest all of their external portfolios in either their home currencies or in US dollars, with the size of their total external positions indicating little about the currency composition of these investments.

Table A.4 reports the results of regressions in which we pool all funds and regress either funds' home-currency shares of foreign corporate bond investment (columns 1 and 3) or the sum of funds' home-currency and dollar shares of foreign corporate bond investment (columns 2 and 4) on the share of their total AUM that is invested abroad (the "Foreign portfolio %", a measure of the extent to which they specialize in foreign investment) as well as the fund's overall size, measured as log AUM. Columns 1 and 2 consider observations at the fund level and include fixed effects for each fund domicile, while columns 3 and 4 consider observations at the fund-destination level and additionally include destination fixed effects. The coefficients on the foreign portfolio share are negative and statistically significant across all specifications, indicating that firms that specialize in foreign investment exhibit less home-currency and less dollar bias in their foreign investments. This is perhaps not surprising given the existence of funds that specialize in foreign currency bonds. The coefficients on total fund AUM are less stable and estimated with variable precision. Table

A.5 repeats these regressions separately for each fund domicile. Consistent with the pooled results, there is evidence that specialist funds generally exhibit less home-currency and dollar bias in their external investments. There is more mixed evidence on the relationship, if any, with size.

A.4.4 Interacting Home Country and Home Currency

In Table A.6, we expand on the results in Table 4. In particular, we now include an interaction of the Home Country and Home Currency dummy variables in addition to the dummies themselves. This specification allows for the possibility that investors are differentially overweight local currency bonds issued by domestic firms relative to foreign firms. There are four possible categories of home/foreign country and currency, and the share of each country's ownership of each type of debt can be recovered from this regression. The average share of all foreign currency debt issued by foreign firms owned by investors from a country is given by the constant. The share of foreign currency debt issued by domestic firms owned by investors from that country is given by the sum of the constant and the country dummy. The share of home currency debt issued by foreign firms owned by investors from the country is equal to the sum of the constant and the currency coefficient. Finally, the share of all home currency debt issued by domestic firms owned by investors from the country is given by the sum of the four coefficients. Investors often own even more of the home-currency denominated debt issued by firms based in their country, as shown by a positive and significant coefficient on the interaction term. The magnitude of the coefficient on the currency dummy relative to the interaction, however, makes clear that that investors own a disproportionate share of debt issued in their own currency, regardless of the nationality of the issuer.

A.4.5 Conditioning Probits on International Sales Shares

Table 5 in the main text demonstrated that larger firms were more likely to issue foreign currency bonds. One interpretation of this size-dependence is that foreign currency issuance involves the payment of a fixed cost. Alternatively, one might postulate that larger firms earn more of their revenues in foreign currency (through exports, say) and therefore issue more bonds in foreign currency to hedge this operating exposure.

To consider this possibility, we run the same probit as in the main text but additionally condition on the share of each firm's revenues that are accounted for by foreign sales, as measured in Thompson Reuters Worldscope Segment Tables. The results are presented in Table A.7. For some countries such as the United Kingdom and the United States, a higher foreign sales share is associated with a greater likelihood of issuing foreign currency debt, whereas for other countries such as Canada and the EMU the relationship is insignificant or negative. Across the vast majority of specifications, firm size remains strongly and positively correlated with the likelihood that a firm

issues foreign currency debt, even after accounting for the share of sales earned abroad.

A.4.6   LC-Only Issuers' Domestic and Foreign Portfolio Shares, by Industry

The main body of the paper focuses on corporate bonds, including those issued by financial and non-financial corporations. Since financial corporations, which in general are large and frequent issuers, might differ substantially from all other corporations in their ability to issue in multiple currencies, we show in this section that our results hold when focusing only on non-financial corporations. Figure A.14 reproduces for non-financial corporations the analysis in Figure 8 from the main text and offers an almost identical view of the data. If anything, focusing on non-financial corporates sharpens the extent to which foreigners do not buy debt issued by LC-only firms compared to domestic investors. Figures A.15 through A.18 additionally show these analyses for the consumer products, energy and utilities, IT and telecommunications, and materials and industrials industries. The results are highly robust across countries and industries.

A.4.7   Alternate Data on Currency Shares of Corporate Bond Issuance

Figure 5 demonstrated the nearly one-to-one relationship between the share of foreign currency in a company's bond issuances and the share of its bonds held by foreigners. This analysis, however, measured both of these shares using the same data set, our Morningstar dataset, which may bias us toward finding this relationship. To ensure our conclusions from that analysis are not driven by this bias, we plot the same relationship in Figure A.19 but where we use data from SDC Platinum and Dealogic databases to construct each firm's foreign currency share of total issuance. For Canada, the EMU, the United Kingdom, and the United States, the correlation between these foreign currency shares in the SDC/Dealogic data and in our Morningstar data exceeds 75 percent. It is unsurprising, therefore, that the qualitative conclusions from these alternative figures are the same as those from Figure 5 discussed in the main text.

A.4.8   Foreign Investment into Equity of LC-Only Firms

Figure 9b in the main text demonstrated LC-only issuers account for shares in foreign and domestic equity portfolios that are far more similar than is the case for bond portfolios. To investigate this further, Figure A.20 explores the joint holdings of equity and debt of the same firm by foreign and domestic investors. We define a measure of how overweight foreigners are in the debt or equity of a firm p by taking the log of the ratio of the foreign portfolio share of firm p to the domestic portfolio share of firm p in that asset class. The higher this ratio, the more overweight the foreign investors are for that firm. A log ratio value of zero means a firm represents the same portfolio

weight in domestic and foreign portfolios. We include all firms with both an equity and a bond security in our sample and plot the foreign overweight ratio for debt on the vertical axis and for equity on the horizontal axis.[4] LC firms are depicted with red circles and MC firms with blue ones, with the size of each circle proportional to the total market value of the total debt of the firm.

For the MC firms in countries other than the US, there is a strong positive correlation of the debt and equity foreign overweight ratios, as seen in the upward sloping blue best-fit lines.[5] If MC firms attract a lot of foreign equity investment, they also attract a lot of foreign debt investment. By contrast, the red best-fit lines for the LC firms are flat or even slightly downward sloping. Unlike the case for MC firms, even when LC firms receive a lot of foreign equity investment, this is not also associated with large foreign debt investments. Finally, we again see that the US constitutes an exception, with the foreign overweight ratios for debt and equity behaving more similarly. Whereas the two best-fit lines are flatter than with the MC firms for the other countries, the US is the one case in which the dollar-only issuers and foreign-currency issuers exhibit a similar relationship between debt and equity foreign overweight ratios.

A.4.9   Nationality of Investors and Domicile of Funds

In the main body of the paper we have equated the domicile of an open-end mutual fund with the nationality of the investors in that fund. We argued that tax optimization and regulatory restrictions make it unlikely that investors buy foreign mutual funds. We noted that Ireland and Luxembourg are uniquely large exceptions to this rule as they are large mutual funds centers for the rest of Europe. We have therefore grouped all funds domiciled in the EMU together.

We provide here supportive evidence for this assumption. The US TIC data provides a breakdown of both inward and outward investment that is in fund shares, including all investment funds, not just open-end mutual funds. Columns 1 to 3 of Table A.8 show the fraction of US outward portfolio securities investment by destination country that is accounted for by fund shares. For most destinations the fraction is very small, less than 2.5 percent. Particularly given these TIC data include hedge funds and other vehicles that are more likely to invest on behalf of foreigners, we view this as confirming our assumption that US investors do not make substantial investments in foreign-domiciled mutual funds..[6] Columns 4 to 6 of Table A.8 show the fraction of US inward

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[4]We drop firms for which either the domestic or the foreign portfolio share is zero since in these cases the log ratio is not defined. We winsorize the log ratio for both debt and equity at the 1 percent level. In unreported results, we confirmed the robustness of our analysis to introducing these data points by setting the corresponding log ratio to a very large or very small constant.

[5]The best fit lines are weighted by the amount of debt issued by each firm owned by mutual funds in the dataset.

[6]Notable exceptions are fiscal paradises such as the Cayman Islands. In 2017, 50 percent of US investment in the Caymans was in fund shares. Cayman funds, however, are generally not open-end mutual funds and therefore not directly relevant for our study.

portfolio securities investment by source country that is accounted for by fund shares. Again, the percentages are small at around 5 to 8 percent.[7]

We next turn to the mutual fund industry in Europe and in particular to the role of Ireland and Luxembourg, two of the world's largest mutual fund centers and home to many UCITS funds that can be sold to any investor within the European Union under a harmonized regulatory regime. Figure A.21 shows the composition of foreign claims by country of source on Luxembourg equities and fund shares. Countries in the EMU (excluding Luxembourg) account for 70 to 80 percent of all foreign claims. The other important, but strongly declining, claimant is Switzerland. All other countries account for relatively small shares. The CPIS data for Luxembourg have notable shortcomings, namely the fact that reported claims by the rest of the world on Luxembourg are far smaller than the claims that Luxembourg reports on the rest of world, by about $1 trillion in 2015. Nonetheless, they suggest our benchmark attribution of Luxembourg fund holdings to EMU residents is a reasonable first approximation of reality.

Ireland presents a more complex case. In particular, there is a concern that UK and Swedish residents might invest in funds domiciled in Ireland. CPIS data do not separate common equity of a company from fund shares. While the market capitalization of fund shares in Luxembourg far outweighs that of the local equity market, the same is not necessarily true for Ireland. Therefore, we have not performed for Ireland the same decomposition that we discussed above for Luxembourg.

Finally, our assumption that fund domicile corresponds to the nationality of the investors in the fund might fit less well for ETFs. Since these are exchange traded, they could in principle be bought by foreigners. As discussed in the main text, ETFs account for only a modest share of total AUM in our analyses. Further, our procedure that unwinds mutual fund investments in other funds (including ETFs) attenuates this issue. If a fund in our data invests in an ETF domiciled in a different country, our unwinding procedure attributes the ETF positions (in proportion to holdings) to the holding fund.

A.4.10   Cross-Sectional Patterns in 2005

The main body of the paper focuses on cross-sectional analyses using end-of-year 2017 data. We stress, however, that our cross-sectional facts hold more generally in the sample. While there is certainly variation from year to year, the qualitative patterns are present in all years.

The extent to which the US is different from other countries is attenuated, however, in 2005 relative to 2017. Figure A.22 and Table A.9 reproduce for the year 2005, an early year in our sample, the analysis in Figures 2 and 9a and Table 2 from the main body. Foreigners in 2005 also

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[7]Canada and Mexico show higher percentages probably due to the proximity to the US. The data do not allow to verify whether these are investments in open-end mutual funds, or investment in other fund structures in the US. Fiscal paradises show a consistently higher share as highlighted above.

do not invest much in local currency bonds, though the US results look closer to those for the EMU than they do in 2017.

Table A.1: Currency Composition of Foreign Debt Positions: CPIS and Morningstar, 2017

Country	USD MS	USD CPIS	EUR MS	EUR CPIS	GBP MS	GBP CPIS	JPY MS	JPY CPIS	CHF MS	CHF CPIS	Other MS	Other CPIS
AUT	20.0	10.4	70.3	83.9	1.5	1.0	0.3	0.2	0.3	0.2	7.7	4.3
BEL	4.8	7.1	91.0	87.7	0.8	1.3	0.8	0.0	0.0	0.0	2.6	3.8
CAN	60.4	70.4	7.9	3.7	2.1	2.0	1.4	3.0	0.0	0.0	28.1	21.0
CHE	29.8	38.3	24.9	27.2	3.4	3.3	4.3	1.1	31.3	22.6	6.3	7.3
DEU	12.9	12.3	79.3	82.5	1.2	1.9	0.2	0.4	0.2	0.3	6.1	2.6
DNK	39.5	32.4	30.7	51.0	2.4	2.0	0.2	0.1	0.7	0.2	26.4	14.3
ESP	10.3	7.2	86.5	89.6	0.5	1.1	0.1	0.0	0.0	0.0	2.5	2.0
FIN	11.2	13.6	68.0	77.3	1.3	1.2	0.0	0.0	0.3	0.1	19.2	7.7
FRA	5.1	6.2	91.6	86.9	1.4	1.2	0.3	4.6	0.2	0.2	1.4	0.9
GRC	9.3	0.7	90.6	99.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
ITA	25.8	15.3	64.1	79.8	3.5	1.6	1.2	0.5	0.0	0.1	5.4	2.8
NLD	4.7	17.5	93.3	70.5	1.2	2.4	0.5	0.4	0.0	0.1	0.3	9.2
PRT	3.9	6.4	95.7	89.5	0.1	2.7	0.0	0.1	0.0	0.1	0.3	1.2
USA	68.7	79.1	9.5	6.6	2.5	2.9	4.4	5.0	0.2	0.2	14.8	6.2

Note: Table shows for each country the currency composition of its investments in foreign bonds. For each country we report the composition in the CPIS dataset and in the Morningstar data. Only countries that are present in both dataset are included. For countries that are members of the EMU, the CPIS data counts investments in other EMU member countries as foreign investment. This increases the overall percentage of investment in euros for these set of countries. For comparison purposes the Morningstar data in this table counts investments for EMU member states similarly to CPIS. All are from end-of-year 2017.

Table A.2: Home Currency Bias: Within-Firm Variation, Excluding Parent-Matching, 2017

j	AUS	CAN	CHE	DNK	EMU
Currency	0.563***	0.831***	0.684***	0.507***	0.471***
	(0.052)	(0.049)	(0.021)	(0.064)	(0.016)
Obs.	37,645	37,645	37,645	37,645	37,645
# of Firms	13,259	13,259	13,259	13,259	13,259
R^2	0.837	0.966	0.943	0.788	0.904
Firm FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
j	GBR	NOR	NZL	SWE	USA
Currency	0.442***	0.786***	0.516***	0.642***	0.459***
	(0.021)	(0.039)	(0.141)	(0.035)	(0.035)
Obs.	37,645	37,645	37,645	37,645	37,645
# of Firms	13,259	13,259	13,259	13,259	13,259
R^2	0.872	0.946	0.888	0.884	0.934
Firm FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

Note: Table reports estimates of the regression in equation (1) for the year 2017. In these regressions, we do not apply the parent-matching algorithm of Coppola et al. (2019). The dependent variable is the share of each security (at the CUSIP 9-digit level) bought by each country in our sample: $s_{j,p,c}$. We include fixed effects at the ultimate-parent firm level. Controls include maturity and coupon bins. Standard errors in parentheses are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.3: Home Currency Bias: Within-Firm Variation, Excluding EMU, 2017

j	AUS	CAN	CHE	DNK
Currency	0.731***	0.912***	0.936***	0.629***
	(0.039)	(0.011)	(0.014)	(0.070)
Obs.	24,398	24,398	24,398	24,398
# of Firms	5,238	5,238	5,238	5,238
R^2	0.825	0.959	0.929	0.850
Firm FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

j	GBR	NOR	NZL	SWE	USA
Currency	0.792***	0.864***	0.805***	0.857***	0.793***
	(0.030)	(0.020)	(0.134)	(0.016)	(0.016)
Obs.	24,398	24,398	24,398	24,398	24,398
# of Firms	5,238	5,238	5,238	5,238	5,238
R^2	0.896	0.934	0.860	0.971	0.934
Firm FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

Note: Table reports estimates of the regression in equation (1) for the year 2017. These regressions do not include any investment from the European Monetary Union (EMU). The dependent variable is the share of each security (at the CUSIP 9-digit level) bought by each country in our sample: $s_{j,p,c}$. We include fixed effects at the ultimate-parent firm level. Controls include maturity and coupon bins. Standard errors in parentheses are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.4: Fund-Level Determinants of Home-Currency Bias, 2017

	Fund-level specification		Fund-destination level specification	
	(1) HC %	**(2)** HC & USD %	**(3)** HC %	**(4)** HC & USD %
Foreign portfolio % (β)	-0.870***	-0.262***	-0.646***	-0.144***
	(0.140)	(0.033)	(0.013)	(0.007)
Log of fund AUM (γ)	0.001	0.000	0.008***	0.006***
	(0.003)	(0.001)	(0.001)	(0.001)
Observations	12,235	12,235	129,755	128,637
Number of funds	—	—	12,221	12,220
R^2	0.502	0.138	0.477	0.120
Unit of observation	Fund	Fund	Fund-dest.	Fund-dest.
Fund domicile FE	Y	Y	Y	Y
Destination FE	—	—	Y	Y

Note: The estimates in columns 1 and 2 use a fund as the unit of observation; the corresponding specification is

$$b_i = \alpha + \delta_{c_i} + \beta f_i + \gamma s_i + \varepsilon_i,$$

where b_i is the share of the foreign corporate bond holdings of fund i that are denominated in the fund's home currency (column 1), or in the fund's home currency plus US dollar (column 2); c_i is the country of domicile of fund i and δ_{c_i} is a fund domicile fixed effect; f_i is the share of fund i's holdings of corporate bonds that are foreign; and s_i is total fund size, expressed as the log of the fund's AUM. The estimates in columns 3 and 4 use a fund-destination combination as the unit of observation; the corresponding specification is

$$b_{ij} = \alpha + \delta_{c_i} + \rho_j + \beta f_i + \gamma s_i + \varepsilon_{ij},$$

where b_{ij} is the share of the foreign corporate bond holdings of fund i in destination j that are denominated in the fund's home currency (column 3), or in the fund's home currency plus US dollar (column 4). The new term ρ_j is a destination fixed effect. Fund AUM is winsorized at percentiles 1 and 99. All data are end-of-year 2017. Standard errors are reported in parentheses and clustered at the fund domicile level (columns 1 and 2) or fund level (columns 3 and 4). *** p<0.01, ** p<0.05, * p<0.1.

Table A.5: Fund-Level Determinants of Home Currency Bias, By Fund Domicile, 2017

Fund domicile		(1) Fund-level specification	(2)	(3) Fund-destination level specification	(4)
		HC %	HC & USD %	HC %	HC & USD %
USA	$\hat{\beta}$	-0.332***	—	-0.186***	—
		(0.025)	—	(0.018)	—
	$\hat{\gamma}$	-0.003	—	0.003*	—
		(0.002)	—	(0.001)	—
EMU	$\hat{\beta}$	-1.020***	-0.221***	-0.660***	-0.055***
		(0.012)	(0.012)	(0.015)	(0.007)
	$\hat{\gamma}$	0.006***	-0.000	0.016***	0.007***
		(0.002)	(0.002)	(0.002)	(0.001)
GBR	$\hat{\beta}$	-0.895***	-0.220***	-0.820***	-0.280***
		(0.054)	(0.032)	(0.065)	(0.038)
	$\hat{\gamma}$	-0.015**	-0.006	-0.000	-0.002
		(0.007)	(0.004)	(0.005)	(0.003)
CAN	$\hat{\beta}$	-1.017***	-0.142***	-0.822***	-0.145***
		(0.025)	(0.020)	(0.029)	(0.024)
	$\hat{\gamma}$	-0.005	0.008	-0.009*	-0.002
		(0.006)	(0.005)	(0.005)	(0.004)
CHE	$\hat{\beta}$	-0.883***	-0.473***	-0.569***	-0.246***
		(0.051)	(0.046)	(0.078)	(0.058)
	$\hat{\gamma}$	0.024**	0.006	0.032***	0.016*
		(0.010)	(0.010)	(0.010)	(0.009)
AUS	$\hat{\beta}$	-1.056***	-0.388***	-0.866***	-0.396***
		(0.101)	(0.076)	(0.126)	(0.070)
	$\hat{\gamma}$	-0.024	-0.017	-0.011	0.002
		(0.019)	(0.013)	(0.014)	(0.010)
SWE	$\hat{\beta}$	-0.964***	-0.614***	-0.665***	-0.441***
		(0.059)	(0.095)	(0.072)	(0.101)
	$\hat{\gamma}$	0.013	-0.002	0.022	-0.008
		(0.015)	(0.015)	(0.015)	(0.020)
DNK	$\hat{\beta}$	-0.821***	-0.355***	-0.433***	-0.256***
		(0.042)	(0.063)	(0.071)	(0.064)
	$\hat{\gamma}$	0.012	0.023	0.007	0.002
		(0.014)	(0.022)	(0.008)	(0.020)
NOR	$\hat{\beta}$	-1.065***	-0.574***	-0.687***	-0.511***
		(0.101)	(0.105)	(0.111)	(0.096)
	$\hat{\gamma}$	-0.000	0.000	0.002	0.001
		(0.010)	(0.012)	(0.014)	(0.013)
NZL	$\hat{\beta}$	-1.455***	-0.603***	-1.494***	-0.394**
		(0.090)	(0.170)	(0.120)	(0.167)
	$\hat{\gamma}$	0.022	0.033	0.010	0.005
		(0.024)	(0.022)	(0.021)	(0.020)

Note: This table shows estimates of the regression specifications in Table A.4 on subsamples of the data that each include all funds domiciled in a particular country. Robust standard errors, clustered at the fund level for results in columns 3-4, are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.6: Home Currency and Home Country Bias, 2017

j	AUS	CAN	CHE	DNK	EMU
Country	0.015***	0.034***	0.008**	0.031***	0.139***
	(0.004)	(0.006)	(0.004)	(0.012)	(0.020)
Currency	0.482***	0.898***	0.725***	0.845***	0.658***
	(0.026)	(0.028)	(0.011)	(0.061)	(0.007)
Country $\times$ Currency	0.263***	0.004	0.208***	-0.281***	-0.105***
	(0.037)	(0.029)	(0.013)	(0.077)	(0.021)
Constant	0.002***	0.015***	0.007***	0.004***	0.220***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.005)
Obs.	36,229	36,229	36,229	36,229	36,229
R^2	0.743	0.937	0.917	0.701	0.707
Controls	No	No	No	No	No

j	GBR	NOR	NZL	SWE	USA
Country	0.017***	0.029***	0.048	0.025***	0.011**
	(0.004)	(0.007)	(0.031)	(0.005)	(0.005)
Currency	0.442***	0.809***	0.709***	0.670***	0.599***
	(0.022)	(0.038)	(0.117)	(0.039)	(0.012)
Country $\times$ Currency	0.045	-0.001	0.142	-0.040	0.092***
	(0.033)	(0.040)	(0.147)	(0.042)	(0.014)
Constant	0.015***	0.004***	0.000***	0.002***	0.035***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.002)
Obs.	36,229	36,229	36,229	36,229	36,229
R^2	0.668	0.885	0.749	0.824	0.804
Controls	No	No	No	No	No

Note: The dependent variable is the share of each security (at the CUSIP 9-digit level) bought by each country in our sample: $s_{j,p,c}$. "Currency" is a dummy variable that takes the value of one when the security is denominated in the currency of the investor. "Country" is a dummy variable that takes the value of one when the security is issued by a firm based in the same country as the investor. "Country $\times$ Currency" is an interaction of the two dummy variables. Standard errors in parentheses are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.7: Probits, Controlling for Foreign Sale Shares

Country		Bond Issuance	EBIT	Assets	Revenue	Country		Bond Issuance	EBIT	Assets	Revenue
	Size	—	0.232**	0.118**	0.073		Size	0.242***	0.303	0.113	0.050
			(0.116)	(0.056)	(0.075)			(0.071)	(0.231)	(0.105)	(0.153)
AUS	Foreign Sales %	—	1.165***	1.190***	1.274***	NOR	Foreign Sales %	0.151	0.449	0.477	0.477
			(0.239)	(0.251)	(0.258)			(0.276)	(0.353)	(0.347)	(0.337)
	Obs.	—	46	47	47		Obs.	28	24	24	24
	Size	0.112***	0.269***	0.110***	0.186***		Size	—	0.652***	0.310***	0.222***
		(0.020)	(0.086)	(0.030)	(0.049)				(0.208)	(0.074)	(0.041)
CAN	Foreign Sales %	0.098	0.174*	0.155	0.143	SWE	Foreign Sales %	—	0.679***	0.652***	0.424***
		(0.090)	(0.102)	(0.102)	(0.102)				(0.234)	(0.138)	(0.148)
	Obs.	170	160	161	161		Obs.	—	34	34	34
	Size	0.108***	0.304***	0.107***	0.135***		Size	0.054***	0.130***	0.066***	0.080***
		(0.010)	(0.030)	(0.015)	(0.017)			(0.004)	(0.009)	(0.005)	(0.006)
EMU	Foreign Sales %	0.038	0.007	0.031	-0.013	USA	Foreign Sales %	0.238***	0.235***	0.222***	0.208***
		(0.067)	(0.068)	(0.070)	(0.072)			(0.027)	(0.026)	(0.027)	(0.028)
	Obs.	475	474	475	475		Obs.	1,718	1,717	1,721	1,721
	Size	0.111***	0.241***	0.065*	0.176***						
		(0.019)	(0.072)	(0.034)	(0.045)						
GBR	Foreign Sales %	0.376***	0.445***	0.472***	0.415***						
		(0.098)	(0.111)	(0.114)	(0.116)						
	Obs.	117	116	117	117						

Note: This table reports the results from the probit regression in equation (5), with additional controls for the firm's share of revenue earned abroad. Each row is a different regression where "Size" is defined as (1) billions of USD of principal of bond issuance, (2) billions of USD of earnings before interest and tax (EBIT), (3) billions of dollars of total assets, and (4) billions of dollars of total revenue. Every specification includes two-digit SIC industry fixed effects. Coefficients reported are average marginal effects. Standard errors for marginal effects calculated using the delta method. All specifications are run using data for 2017. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Missing countries indicate lack of necessary observations.

Table A.8: US Inward and Outward Investment in Fund Shares

Foreign Fund Share of U.S. Outward Investment			U.S. Fund Share of Foreign Inward Investment		
Destination	**2005**	**2017**	**Source**	**2005**	**2017**
AUS	0.1	0.7	AUS	2.4	7.9
BRA	0.0	2.5	BRA	2.6	0.2
CAN	1.3	0.8	CAN	10.4	13.5
CHE	0.0	0.0	CHE	9.7	6.5
CYM	6.2	50.2	CYM	3.7	14.7
EMU	0.8	2.0	EMU	4.7	3.9
GBR	0.2	1.5	GBR	4.6	4.5
JPN	0.2	0.0	JPN	1.5	3.0
MEX	0.3	0.1	MEX	7.4	39.4
Rest of World	0.8	5.8	Rest of World	4.5	9.0

Note: The first 3 columns report the fraction of US outward portfolio securities investment by destination country that is accounted for by fund shares. The final 3 columns report the fraction of US inward portfolio securities investment by source country that is accounted for by fund shares. The data are US Treasury International Capital (TIC) data.

Table A.9: Home Currency Bias: Within-Firm Variation, 2005

j	AUS	CAN	CHE	DNK	EMU
Currency	0.023	0.832***	0.171***	0.845***	0.534***
	(0.020)	(0.044)	(0.022)	(0.050)	(0.029)
Obs.	25,754	25,754	25,754	25,754	25,754
# of Firms	6,323	6,323	6,323	6,323	6,323
R^2	0.866	0.931	0.623	0.891	0.852
Firm FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

j	GBR	NOR	SWE	USA
Currency	0.627***	0.850***	0.668***	0.675***
	(0.029)	(0.055)	(0.031)	(0.028)
Obs.	25,754	25,754	25,754	25,754
# of Firms	0.853	0.984	0.921	0.911
R^2	6,323	6,323	6,323	6,323
Firm FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

Note: Table reports estimates of the regression in equation (1) for the year 2005. The dependent variable is the share of each security (at the CUSIP 9-digit level) bought by each country in our sample: $s_{j,p,c}$. We include fixed effects at the ultimate-parent firm level. Controls include maturity and coupon bins. Standard errors in parentheses are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.10: Home Currency Bias: Robustness, With Standard Errors, 2017

		AUS	CAN	CHE	DNK	EMU	GBR	NOR	NZL	SWE	USA
(1) MC Only	β	0.606***	0.897***	0.721***	0.577***	0.555***	0.444***	0.800***	0.708***	0.648***	0.624***
		(0.038)	(0.012)	(0.010)	(0.066)	(0.011)	(0.019)	(0.025)	(0.118)	(0.022)	(0.012)
	Obs.	6,472	5,656	7,475	896	15,310	10,818	3,160	3,161	3,243	14,686
(2) Foreign	β	0.478***	0.905***	0.714***	0.849***	0.590***	0.453***	0.829***	0.700***	0.658***	0.579***
		(0.032)	(0.030)	(0.011)	(0.070)	(0.015)	(0.024)	(0.040)	(0.136)	(0.051)	(0.016)
	Obs.	34,814	33,626	34,835	35,329	26,309	33,321	34,417	36,098	34,878	22,434
(3) Foreign, Int'l	β	0.549***	0.935***	0.769***	0.809***	0.618***	0.457***	0.895***	0.958***	0.632***	0.628***
		(0.058)	(0.029)	(0.017)	(0.002)	(0.029)	(0.076)	(0.043)	(0.032)	(0.168)	(0.035)
	Obs.	4,586	4,581	4,369	4,754	3,503	4,022	4,647	4,719	4,691	3,112
(4) Financial	β	0.654***	0.885***	0.719***	0.552***	0.557***	0.408***	0.837***	0.854***	0.670***	0.615***
		(0.049)	(0.019)	(0.014)	(0.063)	(0.018)	(0.027)	(0.029)	(0.091)	(0.020)	(0.019)
	Obs.	15,457	15,457	15,457	15,457	15,457	15,457	15,457	15,457	15,457	15,457
(5) Non-Financial	β	0.534***	0.916***	0.727***	0.679***	0.560***	0.494***	0.614***	0.516**	0.551***	0.638***
		(0.056)	(0.013)	(0.016)	(0.082)	(0.014)	(0.027)	(0.055)	(0.214)	(0.051)	(0.015)
	Obs.	18,595	18,595	18,595	18,595	18,595	18,595	18,595	18,595	18,595	18,595
(6) Foreign Financial	β	0.493***	0.877***	0.713***	0.881***	0.588***	0.406***	0.860***	0.854***	0.751***	0.564***
		(0.045)	(0.058)	(0.013)	(0.109)	(0.024)	(0.033)	(0.036)	(0.091)	(0.040)	(0.020)
	Obs.	14,584	14,500	14,609	14,903	11,074	13,996	14,408	15,444	14,536	11,059

Note: This table reports the same specifications as in Table 3, but including standard errors. Standard errors are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.10: Home Currency Bias: Robustness, With Standard Errors, 2017 (Continued)

		AUS	CAN	CHE	DNK	EMU	GBR	NOR	NZL	SWE	USA
(7) Foreign Non-Fin.	β	0.460***	0.932***	0.717***	0.814***	0.593***	0.501***	0.614***	0.486**	0.474***	0.595***
		(0.044)	(0.019)	(0.017)	(0.005)	(0.015)	(0.030)	(0.086)	(0.233)	(0.035)	(0.025)
	Obs.	18,159	17,013	18,124	18,353	13,909	17,275	18,138	18,533	18,211	9,640
(8) SF, SV, LS	β	0.603***	0.900***	0.721***	0.551***	0.558***	0.445***	0.801***	0.708***	0.635***	0.625***
		(0.042)	(0.013)	(0.011)	(0.057)	(0.012)	(0.021)	(0.028)	(0.131)	(0.024)	(0.013)
	Obs.	65,001	65,001	65,001	65,001	65,001	65,001	65,001	65,001	65,001	65,001
(9) All bonds	β	0.597***	0.886***	0.719***	0.552***	0.566***	0.444***	0.799***	0.699***	0.631***	0.618***
		(0.001)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	Obs.	285,267	285,267	285,267	285,267	285,267	285,267	285,267	285,267	285,267	285,267
(10) Residency	β	0.605***	0.888***	0.721***	0.560***	0.555***	0.445***	0.792***	0.642***	0.642***	0.614***
		(0.012)	(0.012)	(0.019)	(0.059)	(0.018)	(0.016)	(0.023)	(0.090)	(0.039)	(0.017)
	Resid.	0.007	0.046***	0.020	0.135**	0.045**	0.023	0.047**	0.164*	-0.020	0.091***
		(0.043)	(0.012)	(0.011)	(0.059)	(0.012)	(0.021)	(0.031)	(0.144)	(0.023)	(0.013)
	Obs.	36,229	36,229	36,229	36,229	36,229	36,229	36,229	36,229	36,229	36,229
(11) Own Governing Law	β	0.404***	—	—	—	0.598***	0.502***	—	—	0.658***	0.612***
		(0.063)	—	—	—	(0.014)	(0.004)	—	—	(0.041)	(0.019)
	Gov. Law	0.201***	—	—	—	-0.017	0.002	—	—	0.032	0.087***
		(0.059)	—	—	—	(0.012)	(0.024)	—	—	(0.048)	(0.021)
	Obs.	16,905	—	—	—	16,905	16,905	—	—	16,905	16,905

Note: This table reports the same specifications as in Table 3, but including standard errors. Standard errors are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.11: Home-Country Bias and Home-Currency Bias, With Standard Errors, 2017

	Panel A: Only Home-Country Indicator		Panel B: Only Home-Currency Indicator		Panel C: Home-Country and Home-Currency Indicators		
	$\gamma_{j,0}$	R^2	$\beta_{j,0}$	R^2	$\gamma_{j,1}$	$\beta_{j,1}$	R^2
AUS	0.100*** (0.016)	0.089 —	0.659*** (0.025)	0.712 —	0.027*** (0.006)	0.642*** (0.026)	0.718 —
CAN	0.497*** (0.035)	0.433 —	0.930*** (0.007)	0.936 —	0.035*** (0.007)	0.901*** (0.009)	0.937 —
CHE	0.356*** (0.093)	0.240 —	0.851*** (0.016)	0.903 —	0.051*** (0.016)	0.823*** (0.014)	0.907 —
DNK	0.402*** (0.071)	0.470 —	0.597*** (0.044)	0.698 —	0.023** (0.010)	0.575*** (0.047)	0.699 —
EMU	0.438*** (0.019)	0.296 —	0.666*** (0.006)	0.695 —	0.093*** (0.011)	0.615*** (0.009)	0.704 —
GBR	0.166*** (0.018)	0.132 —	0.475*** (0.016)	0.664 —	0.026*** (0.008)	0.463*** (0.016)	0.667 —
NOR	0.547*** (0.057)	0.521 —	0.833*** (0.011)	0.885 —	0.029*** (0.009)	0.808*** (0.014)	0.885 —
NZL	0.711*** (0.085)	0.373 —	0.805*** (0.065)	0.738 —	0.138 (0.091)	0.736*** (0.094)	0.747 —
SWE	0.416*** (0.027)	0.458 —	0.656*** (0.015)	0.823 —	0.018** (0.008)	0.641*** (0.016)	0.823 —
USA	0.463*** (0.014)	0.388 —	0.675*** (0.006)	0.795 —	0.078*** (0.009)	0.625*** (0.009)	0.802 —

Note: Panel A reports estimates of the regression in equation (2). Panel B reports estimates of the regression in equation (3). Panel C reports estimates of the regression in equation (4). The dependent variable is the share of each security (at the CUSIP 9-digit level) bought by each country in our sample: $s_{j,p,c}$. Standard errors in parentheses are clustered at the ultimate-parent firm level. *** p<0.01, ** p<0.05, * p<0.1.

Figure A.1: Morningstar's Coverage of US Mutual Fund and ETF Assets Under Management
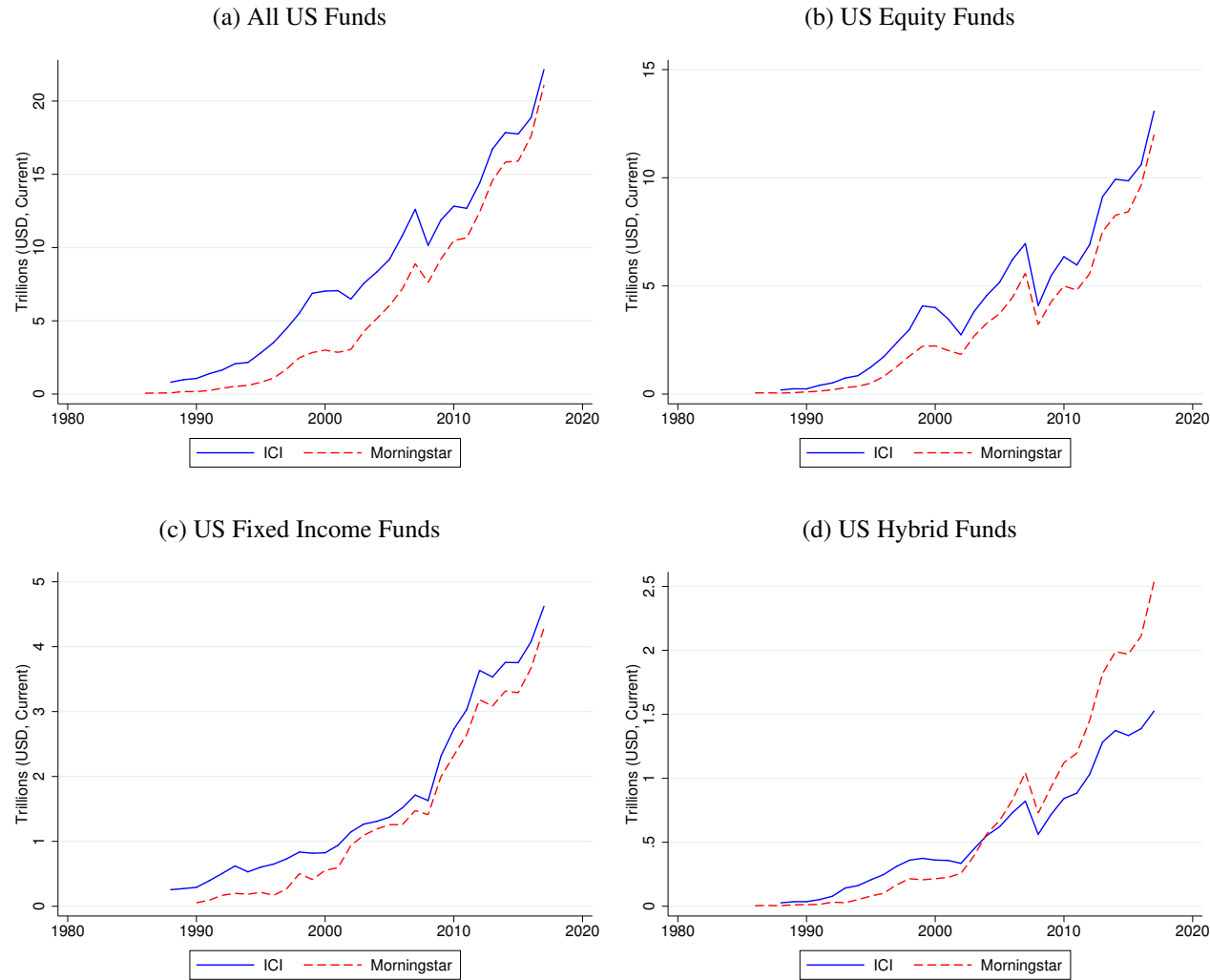
(a) All US Funds

(b) US Equity Funds

(c) US Fixed Income Funds

(d) US Hybrid Funds

Note: The graphs plot total Asset Under Management (AUM) for open-end mutual funds and ETFs domiciled in the US. The blue solid line plots data on total AUM provided by the Investment Company Institute (ICI). The red dashed line reports the total AUM in our data. Panel (a) includes all type of mutual funds (equity, fixed income, hybrid allocation, money market funds). Panels (b), (c), and (d) focus separately on each type of fund.

Figure A.2: Morningstar's Coverage of Non-US Mutual Fund and ETF Assets Under Management
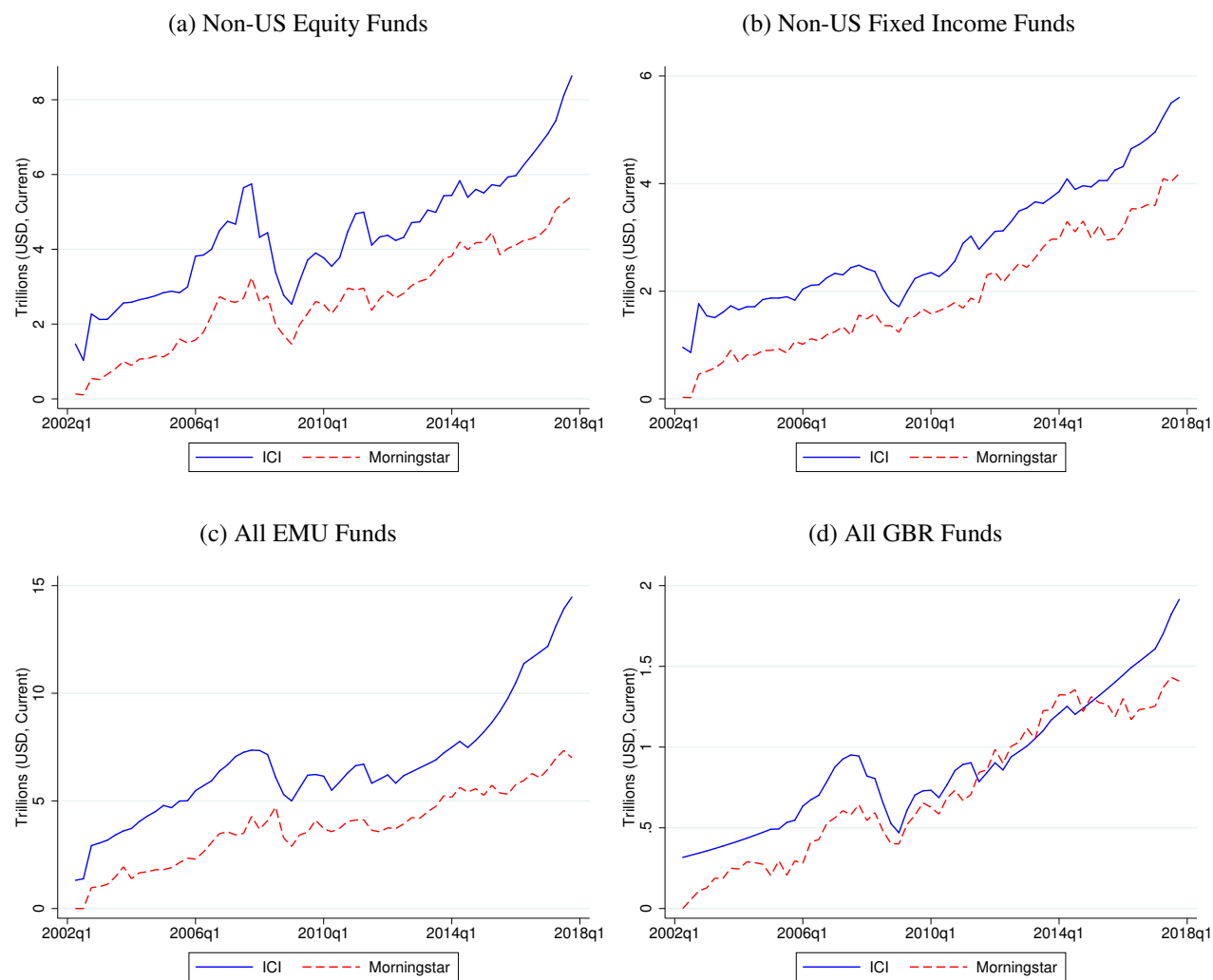
(a) Non-US Equity Funds

(b) Non-US Fixed Income Funds

(c) All EMU Funds

(d) All GBR Funds

Note: The graphs plot total Asset Under Management (AUM) for open-end mutual funds and ETFs domiciled outside the US (Panels (a) and (b)), in the EMU (Panel (c)), and in the United Kingdom (Panel (d)). The blue solid line plots data on total AUM provided by the Investment Company Institute (ICI). The red dashed line reports the total AUM in our data.

Figure A.3: Comparison with TIC: Bilateral Portfolio Shares

(a) US External Assets: Equities
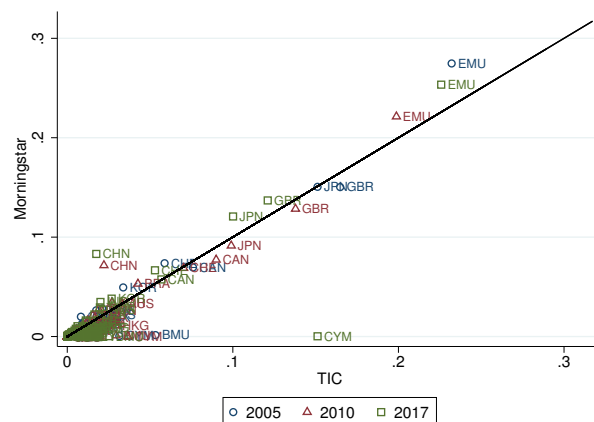
(b) US External Assets: Fixed Income
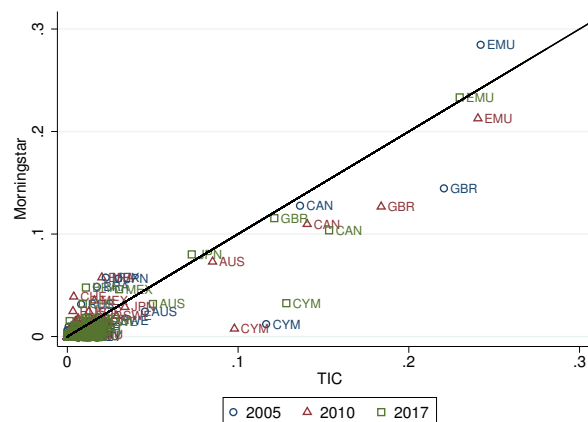
(c) US External Liabilities: Equities
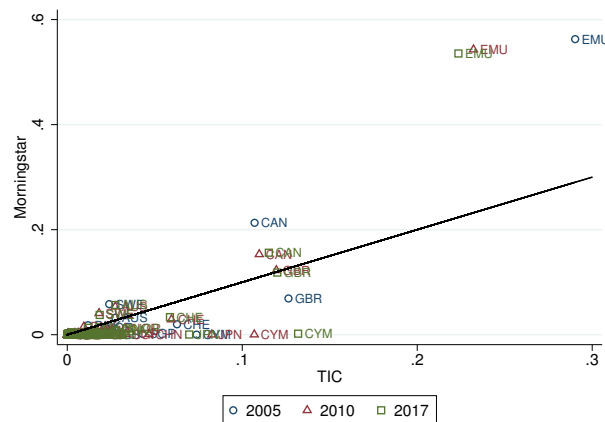
(d) US External Liabilities: Fixed Income
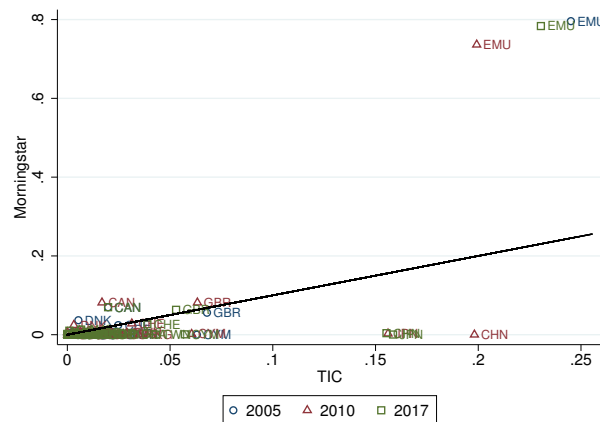
Note: The graphs compare the US foreign assets and liabilities from Treasury International Capital (TIC) data with estimates from our data. Panel (a) plots each foreign country (destination) share of the total US investment in foreign equity securities. Panel (b) plots each foreign country (destination) share of the total US investment in foreign fixed-income securities. Panel (c) plots each foreign country (source) share of the total US foreign liabilities in equity securities. Panel (d) plots each foreign country (source) share of the total US foreign liabilities in fixed-income securities. In all panels the horizontal axis represents the shares obtained using TIC data and the vertical axis represents the corresponding shares estimated with our data. The black line is the 45 degree line.

Figure A.4: Comparison with TIC, US Outward Portfolios by Type

(a) USD-Denominated Sovereign Debt

(b) LCU-Denominated Sovereign Debt

(c) USD-Denominated Corporate Debt

(d) LCU-Denominated Corporate Debt
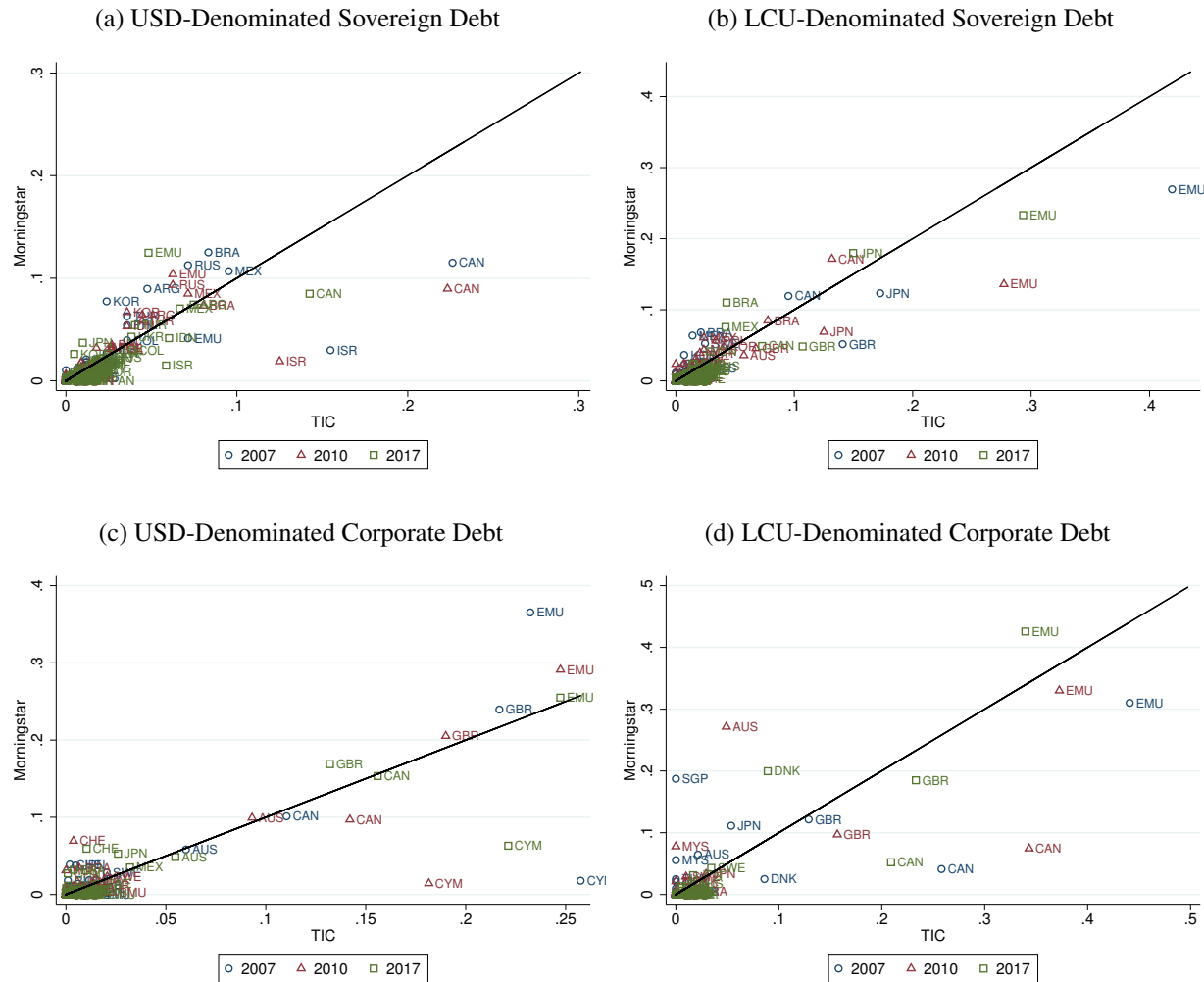
Note: The graphs compare the US foreign assets from Treasury International Capital (TIC) data with estimates from our data. Panel (a) plots each foreign country (destination) share of the total US investment in foreign dollar-denominated sovereign debt. Panel (b) plots each foreign country (destination) share of the total US investment in foreign LCU-denominated sovereign debt. Panel Panel (c) plots each foreign country (destination) share of the total US investment in foreign dollar-denominated corporate debt. Panel (d) plots each foreign country (destination) share of the total US investment in foreign lcu-denominated corporate debt. In all panels the horizontal axis represents the shares obtained using TIC data. In all panels the vertical axis represents the corresponding shares estimated with our data. The black line is the 45 degree line.

Figure A.5: Comparison with CPIS: Australia, Canada, Switzerland
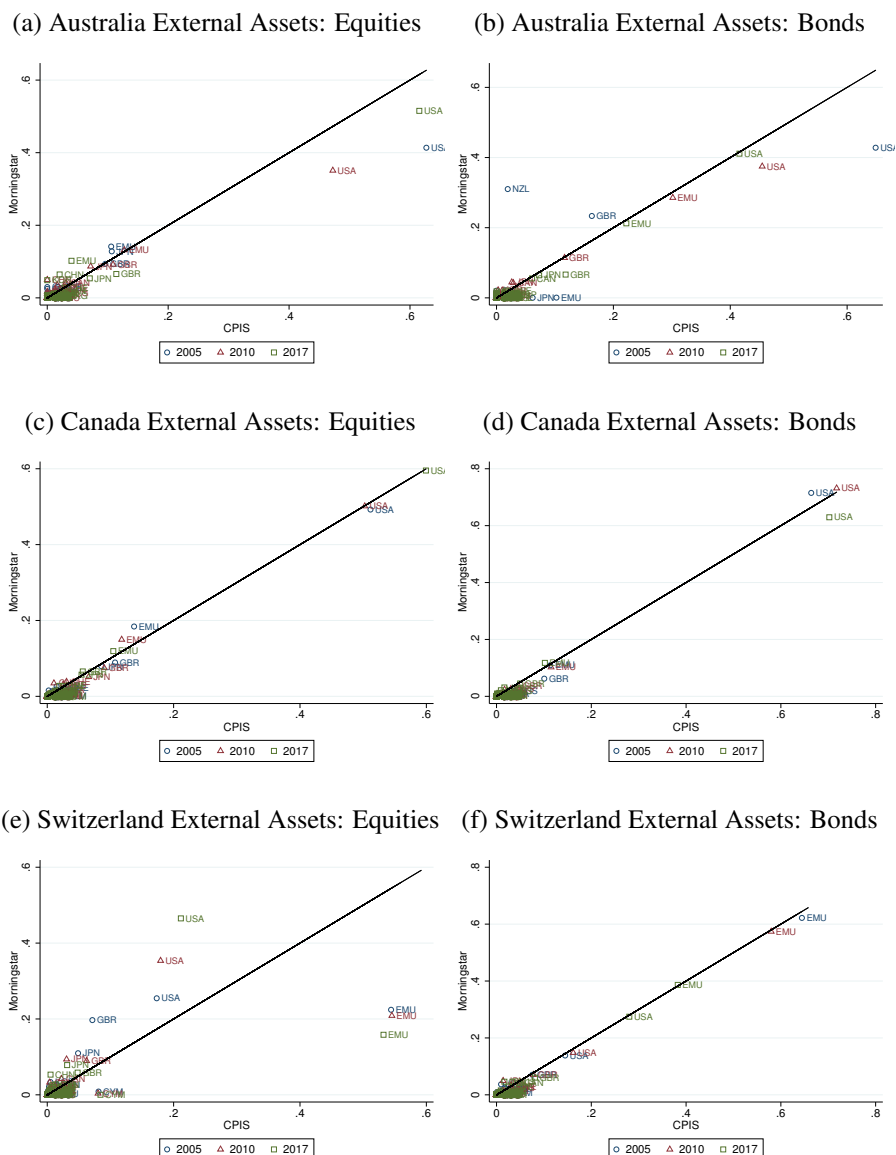
(a) Australia External Assets: Equities

(b) Australia External Assets: Bonds

(c) Canada External Assets: Equities

(d) Canada External Assets: Bonds

(e) Switzerland External Assets: Equities

(f) Switzerland External Assets: Bonds

Note: The graphs compare the foreign assets from CPIS data with estimates from our data. Panels on the left hand side plot each foreign country (destination) share of the total investment in foreign equity securities. Panels on the right hand side plot each foreign country (destination) share of the total investment in foreign fixed-income securities. The origin (source) countries for the investments are Australia, Canada, and Switzerland for the top, middle, and bottom panels, respectively. In all panels the horizontal axis represents the shares obtained using CPIS data. In all panels the vertical axis represents the corresponding shares estimated with our data. The black line is the 45 degree line.

A.30

Figure A.6: Comparisons with CPIS: Denmark, European Monetary Union, United Kingdom
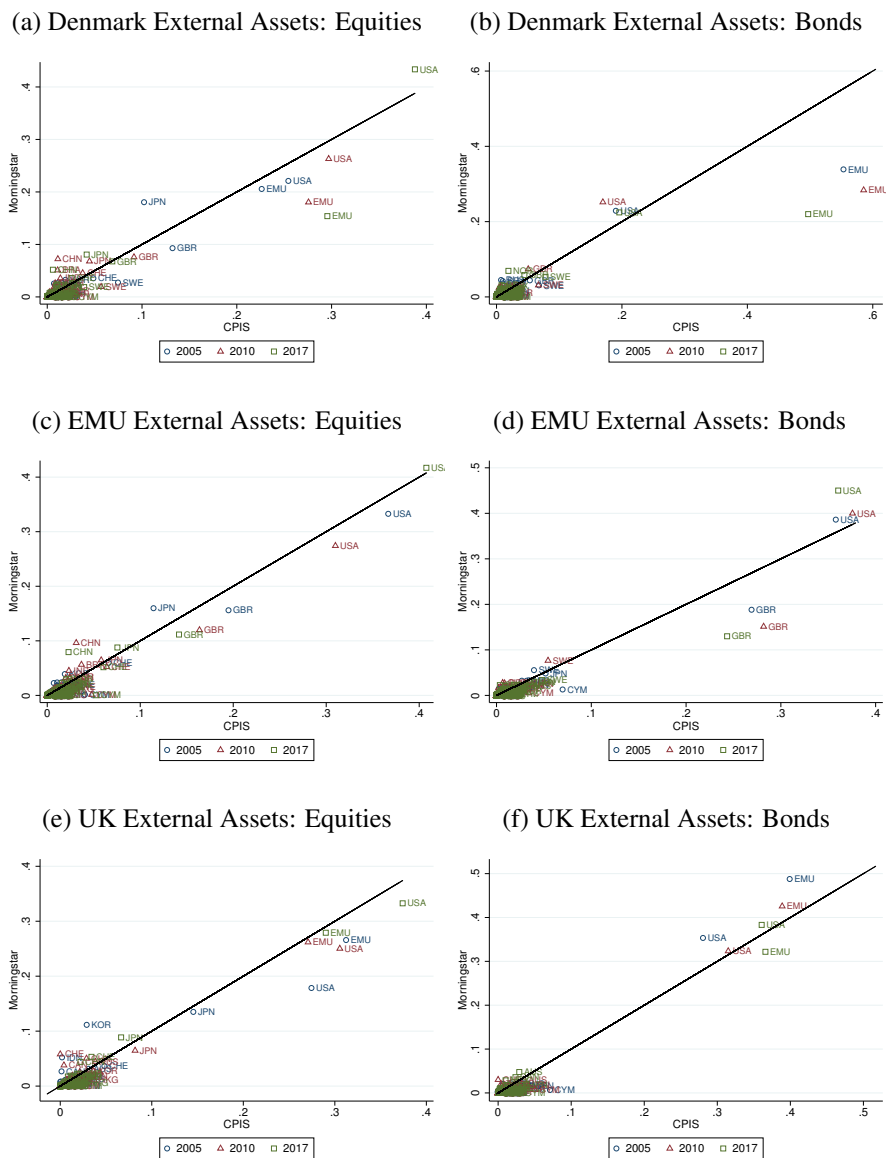
(a) Denmark External Assets: Equities

(b) Denmark External Assets: Bonds

(c) EMU External Assets: Equities

(d) EMU External Assets: Bonds

(e) UK External Assets: Equities

(f) UK External Assets: Bonds

Note: The graphs compare the foreign assets from CPIS data with estimates from our data. Panels on the left hand side plot each foreign country (destination) share of the total investment in foreign equity securities. Panels on the right hand side plot each foreign country (destination) share of the total investment in foreign fixed-income securities. The origin (source) countries for the investments are Denmark, European Monetary Union, and United Kingdom for the top, middle, and bottom panels, respectively. In all panels the horizontal axis represents the shares obtained using CPIS data. In all panels the vertical axis represents the corresponding shares estimated with our data. The black line is the 45 degree line.

Figure A.7: Comparisons with CPIS: Norway, New Zealand, Sweden
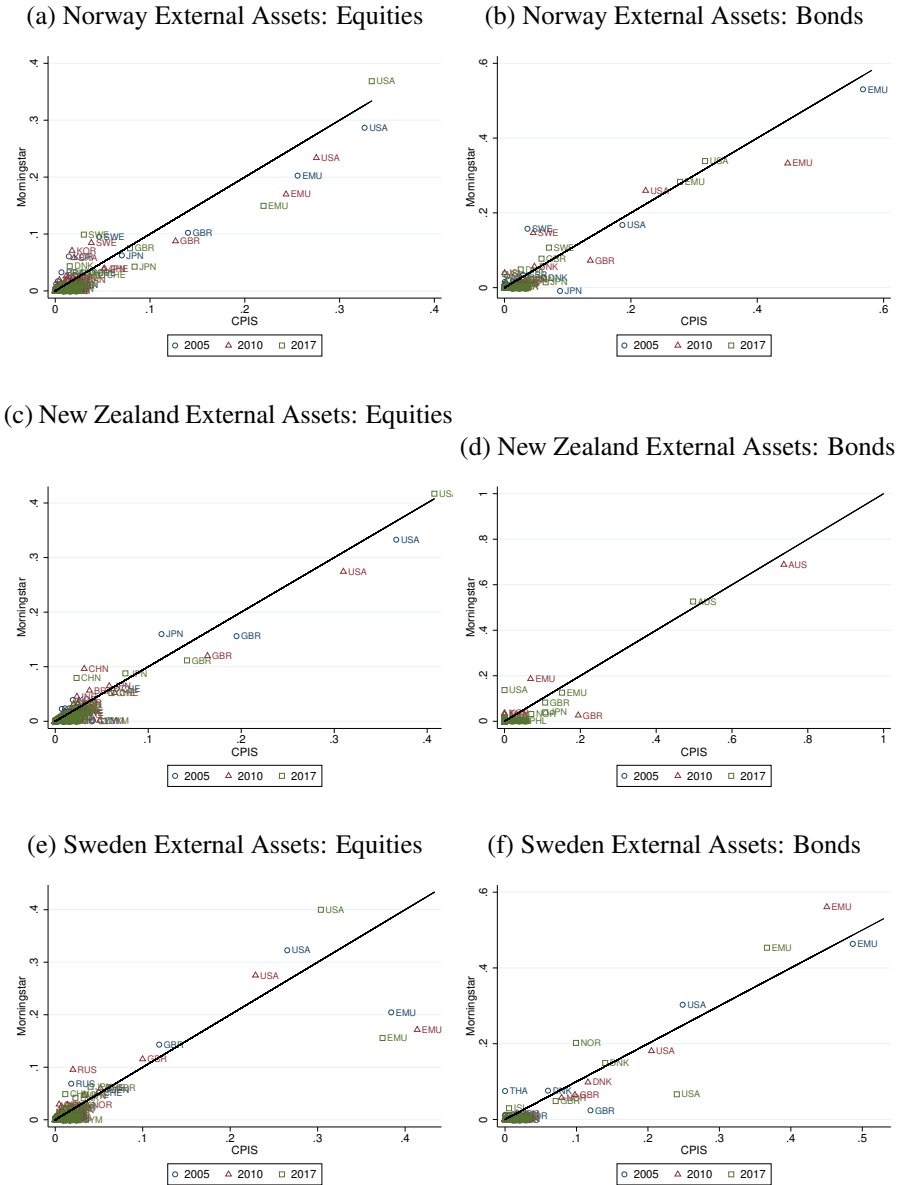
(a) Norway External Assets: Equities

(b) Norway External Assets: Bonds

(c) New Zealand External Assets: Equities

(d) New Zealand External Assets: Bonds

(e) Sweden External Assets: Equities

(f) Sweden External Assets: Bonds

Note: The graphs compare the foreign assets from CPIS data with estimates from our data. Panels on the left hand side plot each foreign country (destination) share of the total investment in foreign equity securities. Panels on the right hand side plot each foreign country (destination) share of the total investment in foreign fixed-income securities. The origin (source) countries for the investments are Norway, New Zealand, and Sweden for the top, middle, and bottom panels, respectively. In all panels the horizontal axis represents the shares obtained using CPIS data. In all panels the vertical axis represents the corresponding shares estimated with our data. The black line is the 45 degree line.

A.32

Figure A.8: Comparison with BIS: Rising Dollar and Falling Euro Shares
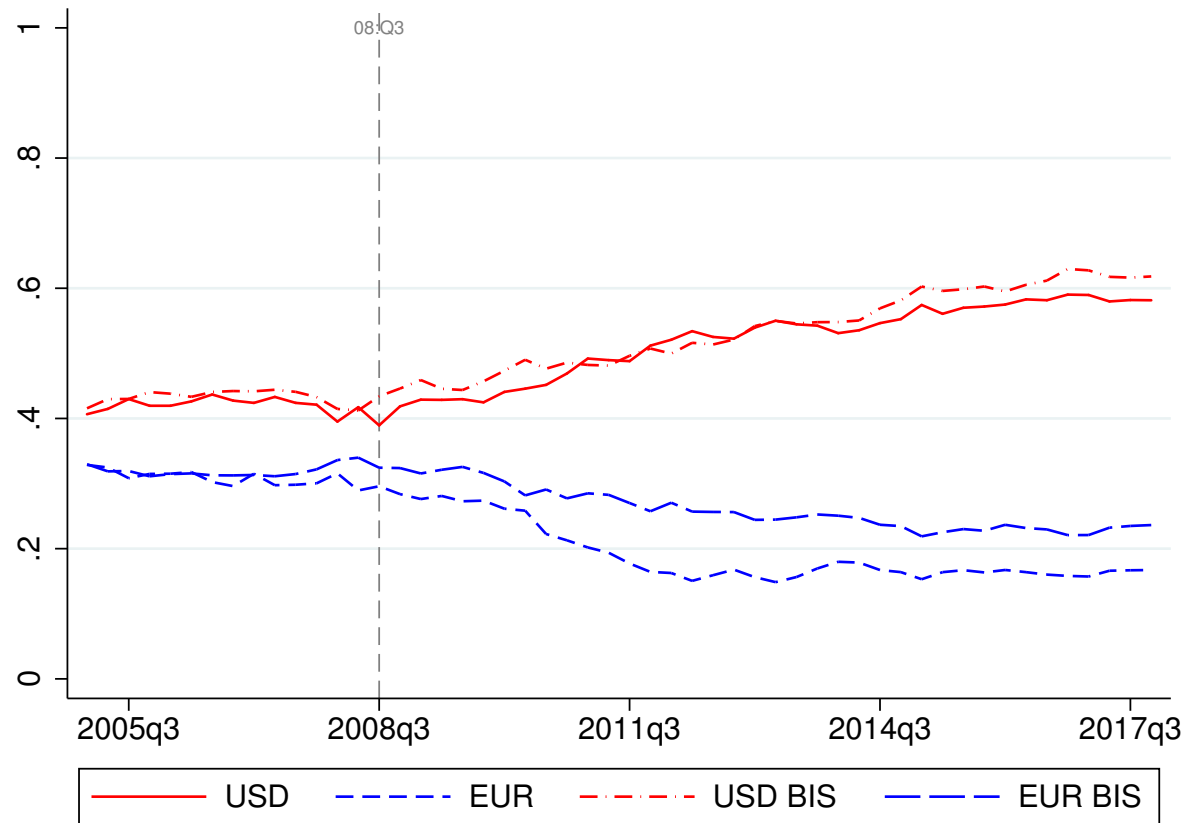
Note: The figure plots our data for the specification in Figure 11a and the BIS International Debt Statistics data. We compute the BIS series starting from the International Debt Statistics and restricting the field "Issue currency group" to "F: Foreign currencies". We then compute the percentages of the portfolio across all countries that are accounted for by dollar and euro denominated bonds respectively.

Figure A.9: Excluding Parent-Matching Algorithm, 2017

(a) Share of Corporate Bond Investment Denominated in Issuer's Local Currency
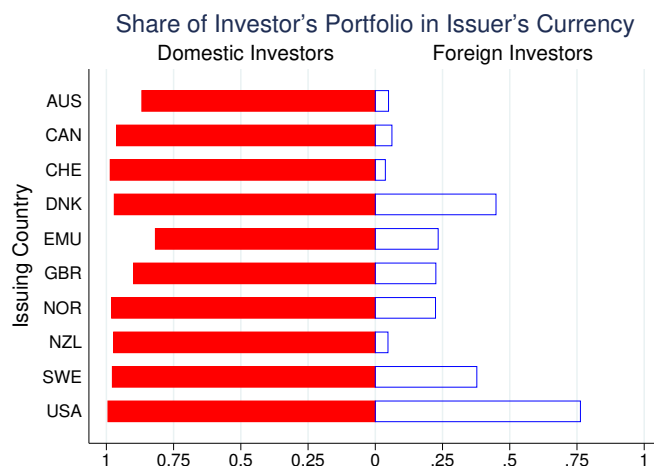
(b) Shares of LC-only Firms in Domestic and Foreign Bond Portfolios

Note: In the top panel, the solid red shaded bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all domestic investment in its corporate bonds. The hollow blue bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all foreign investment in its corporate bonds. The bottom panel reports the share of all debt that is issued by firms that borrow only in local currency in domestic investor's domestic debt portfolio (red) and in foreign investor's debt portfolio in that particular country (blue). In these figures, we do not apply the parent-matching algorithm discussed in Section A.1.

A.34

Figure A.10: Excluding EMU, 2017

(a) Share of Corporate Bond Investment Denominated in Issuer's Local Currency
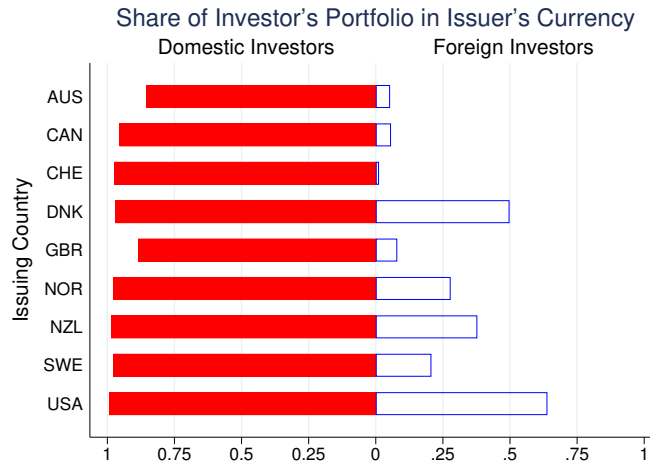
(b) Shares of LC-only Firms in Domestic and Foreign Bond Portfolios

Note: In the top panel, the solid red shaded bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all domestic investment in its corporate bonds. The hollow blue bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all foreign investment in its corporate bonds. The bottom panel reports the share of all debt that is issued by firms that borrow only in local currency in domestic investor's domestic debt portfolio (red) and in foreign investor's debt portfolio in that particular country (blue). These figures do not include any investment from the European Monetary Union (EMU).

Figure A.11: Foreign Bilateral Investment in the EMU and US, 2017

(a) EMU Corporate Bonds: Percentage in Euros

(b) US Corporate Bonds: Percentage in Dollars
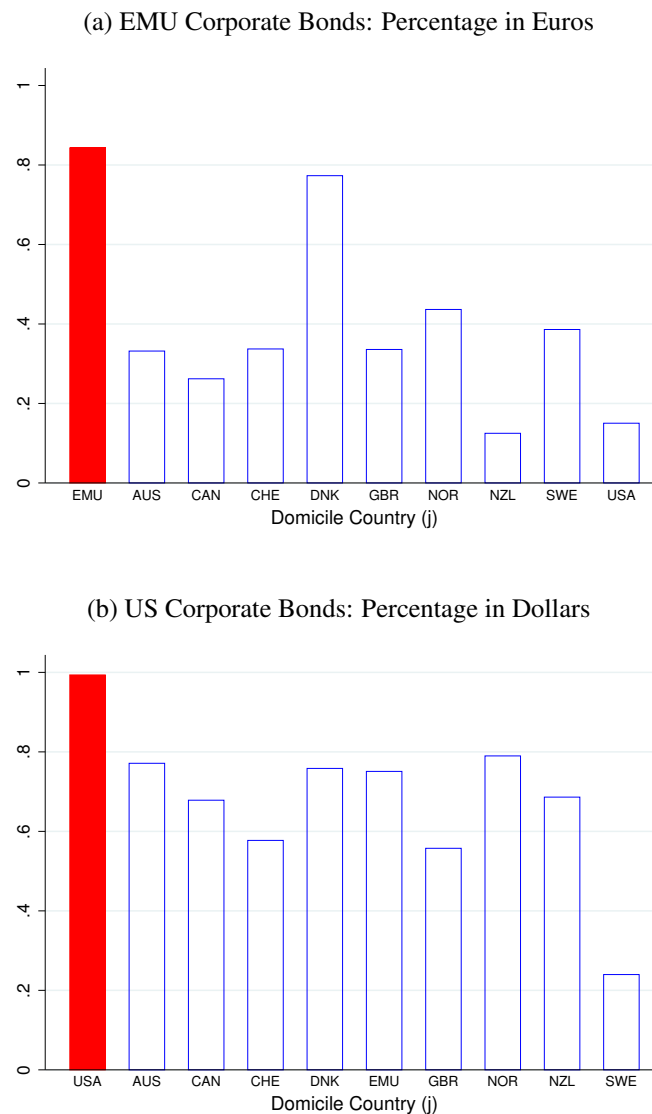
Note: In Panel (a) the solid red shaded bar shows the percentage of EMU domestic investment in corporate bonds that is denominated in euros. The hollow blue bars show the percentage of foreign countries' (the Domicile Country (j)) investment in the EMU corporate bonds that is denominated in euros. In Panel (b) the solid red shaded bar shows the percentage of US domestic investment in corporate bonds that is denominated in dollars. The hollow blue bars show the percentage of foreign countries' (the Domicile Country (j)) investment in the US corporate bonds that is denominated in dollars.

Figure A.12: Share of Sovereign Bond Investment Denominated in the Issuer's Local Currency, 2017
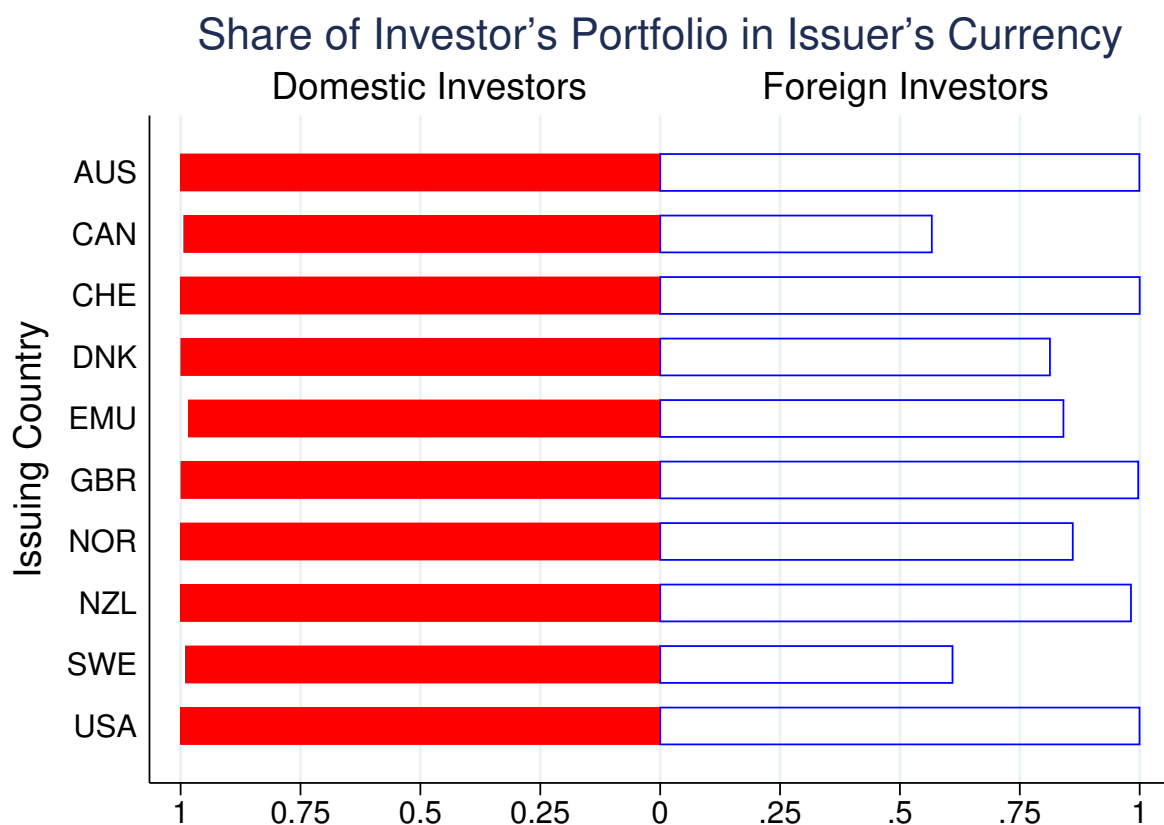
Note: The solid red shaded bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all domestic investment in its sovereign bonds. The hollow blue bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all foreign investment in its sovereign bonds.

Figure A.13: The Distribution of Home-Currency and Dollar Bias Across Funds, 2017

(a) Home-Currency Share, by Domicile
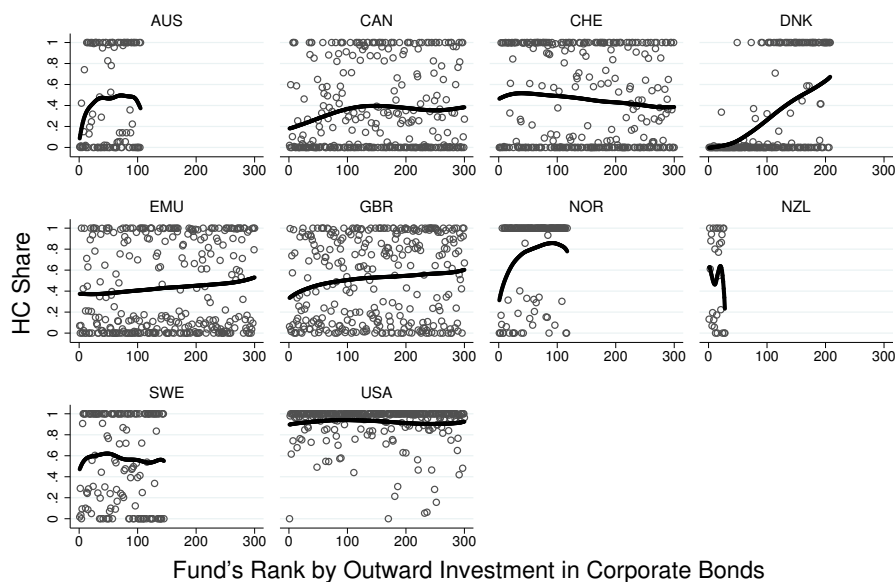
(b) Home-Currency or Dollar Share, by Domicile
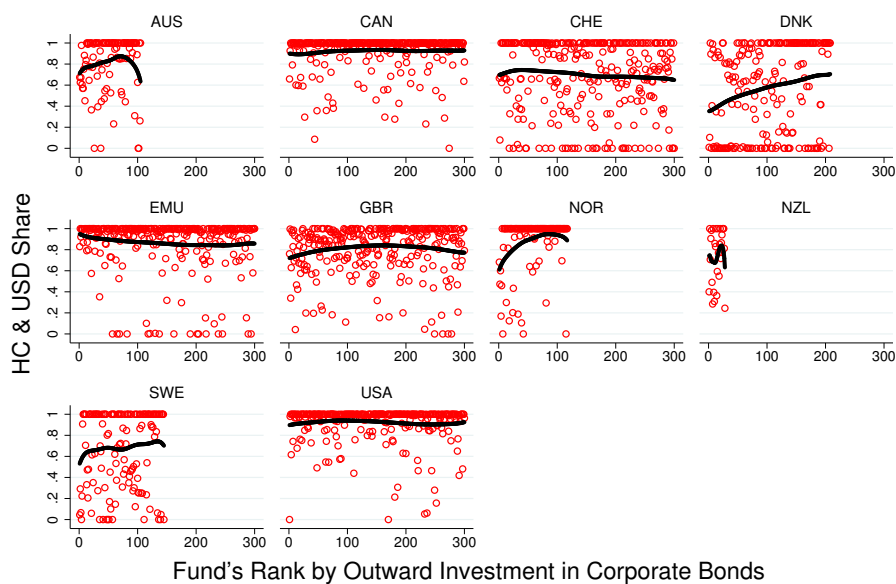
Note: The circles in panel (a) plot the share of investment in foreign corporate bonds that is denominated in the fund's home currency. The circles in panel (b) plot the share that is denominated in the fund's home currency or the US dollar. Funds are ordered from largest (*left*) to smallest (*right*) in terms of their investments in foreign corporate bonds. All data are from the end of 2017. Data are separated by domicile.

Figure A.14: Non-Financial Corporate Bonds from LC-only Issuers in Domestic and Foreign Portfolios, 2017

(a) CAN

(b) EMU

(c) GBR

(d) USA
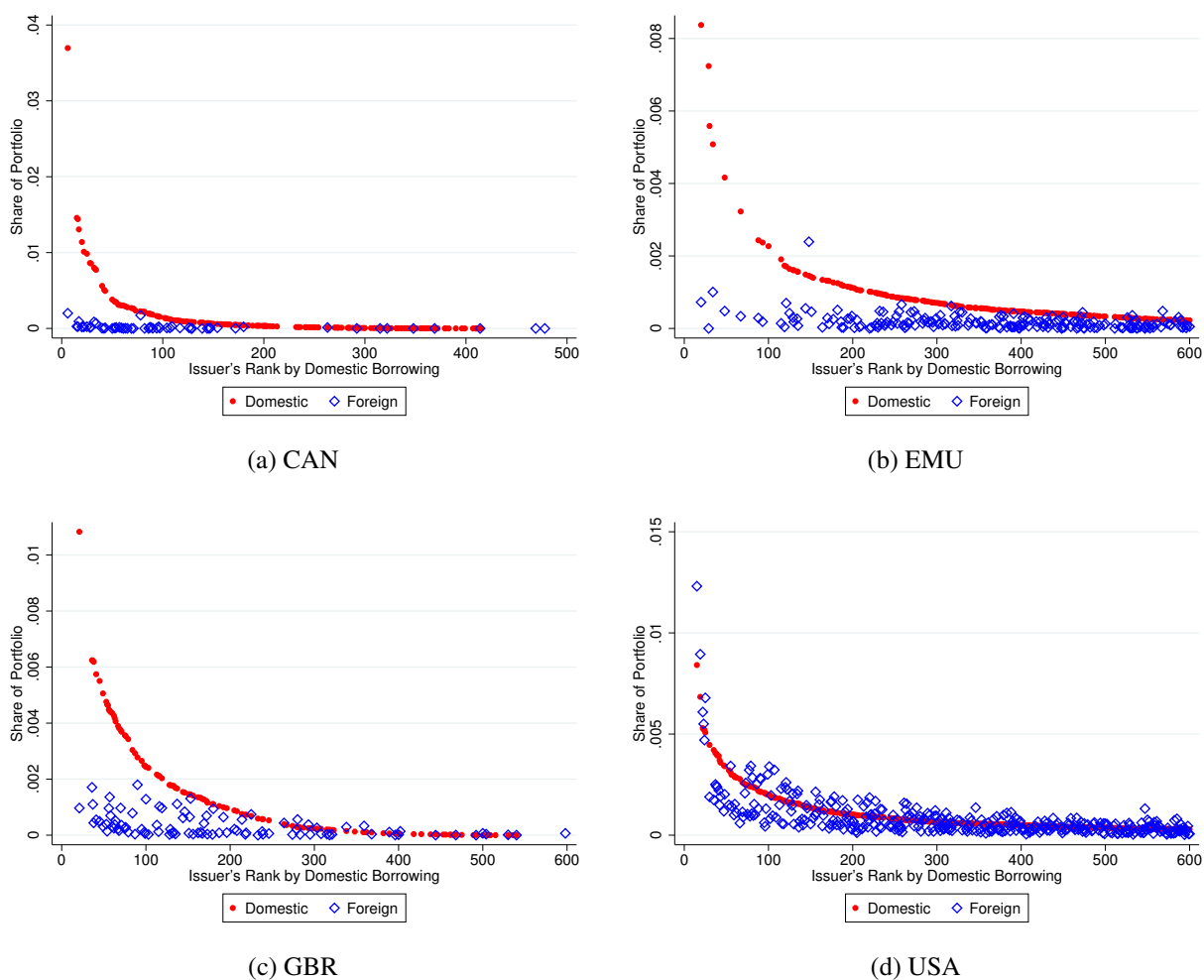
Note: This figure plots the non-financial corporate bond portfolio of domestic and foreign investors in Canada (a), the EMU (b), the United Kingdom (c), and the United States (d). The portfolio positions in each issuer are ranked according to their size in the domestic portfolio. Each figure plots only those firms that issue entirely in the local currency.
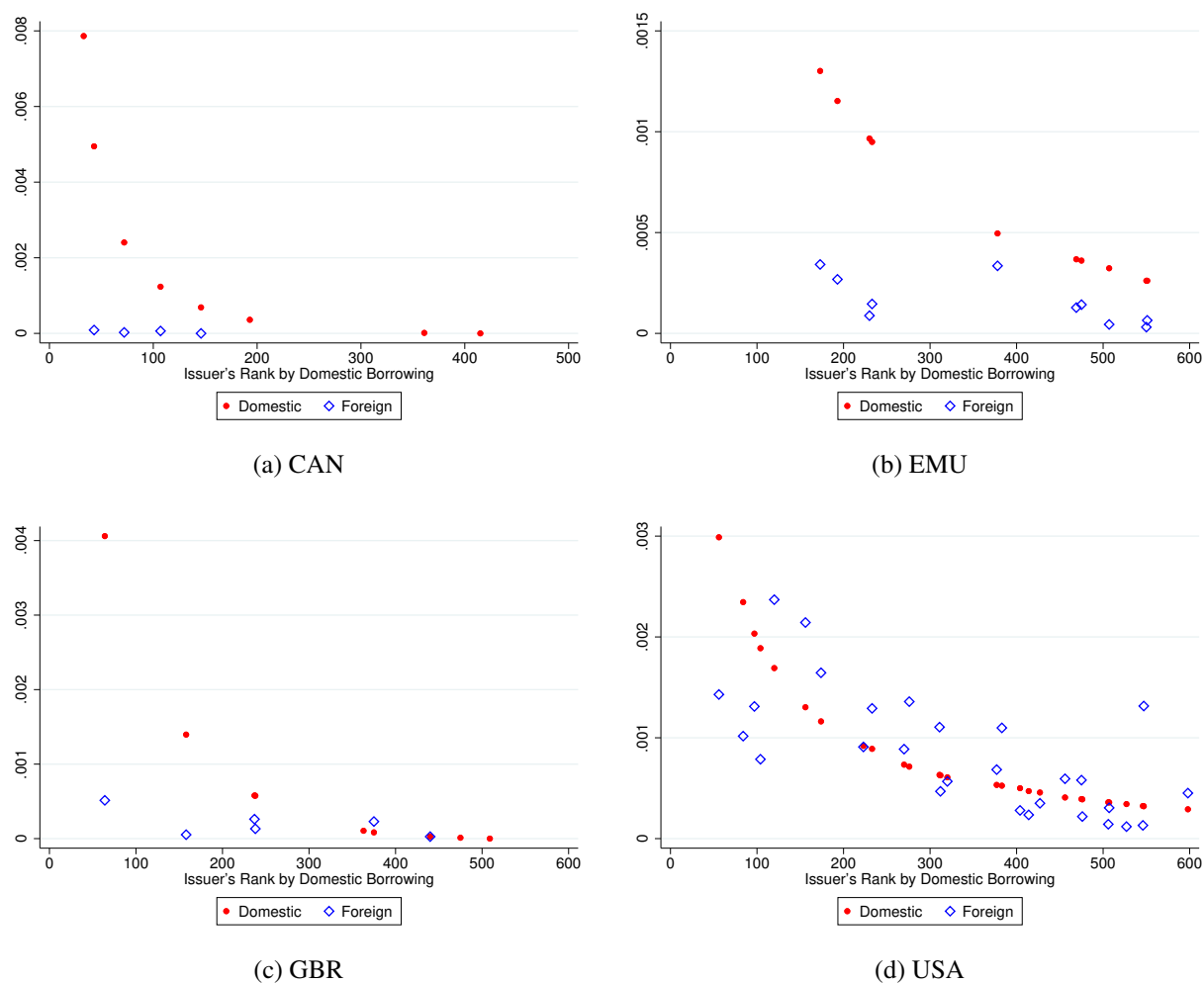
Figure A.15: Corporate Bonds from LC-only Issuers in Domestic and Foreign Portfolios, Consumer Products, 2017
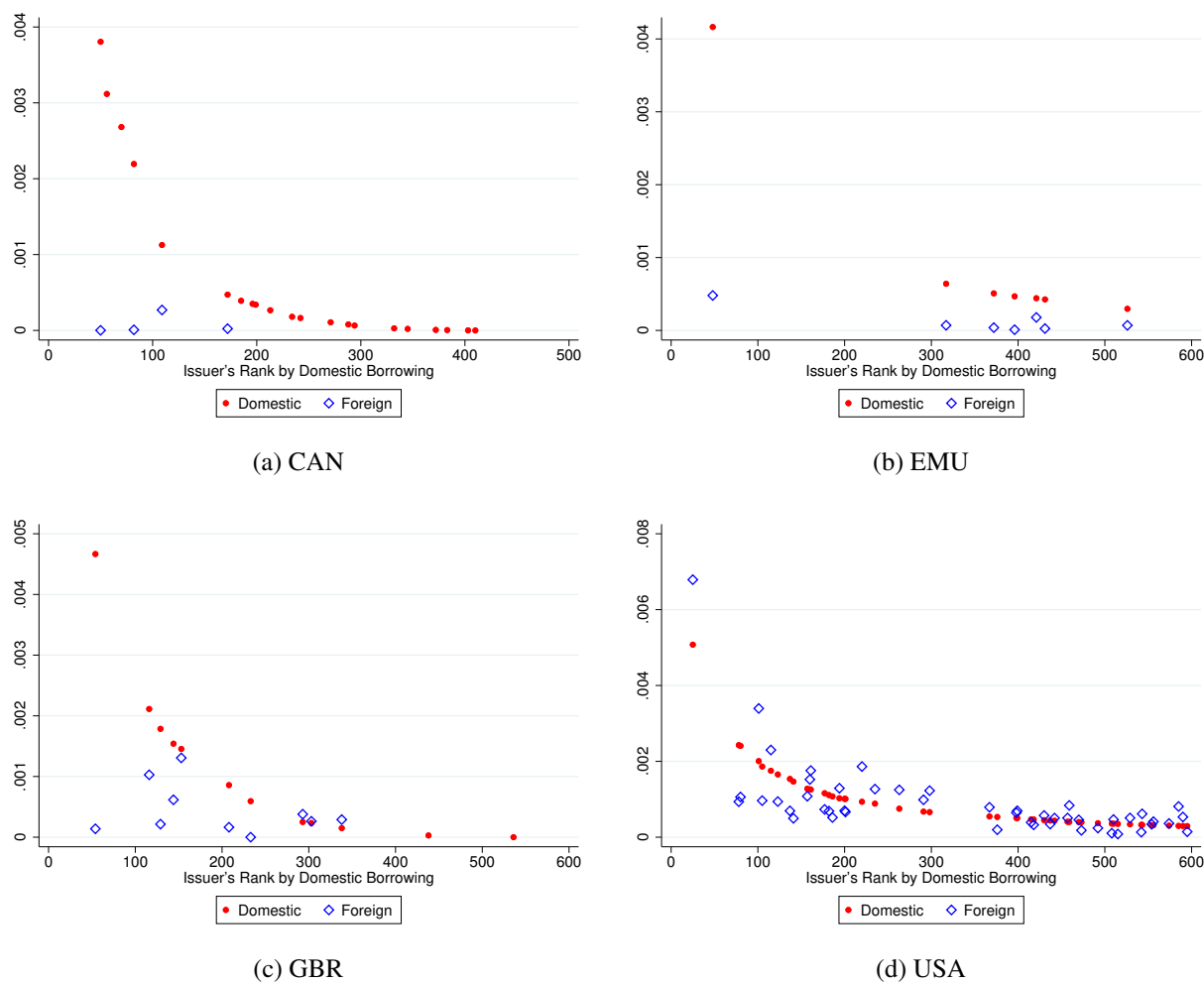
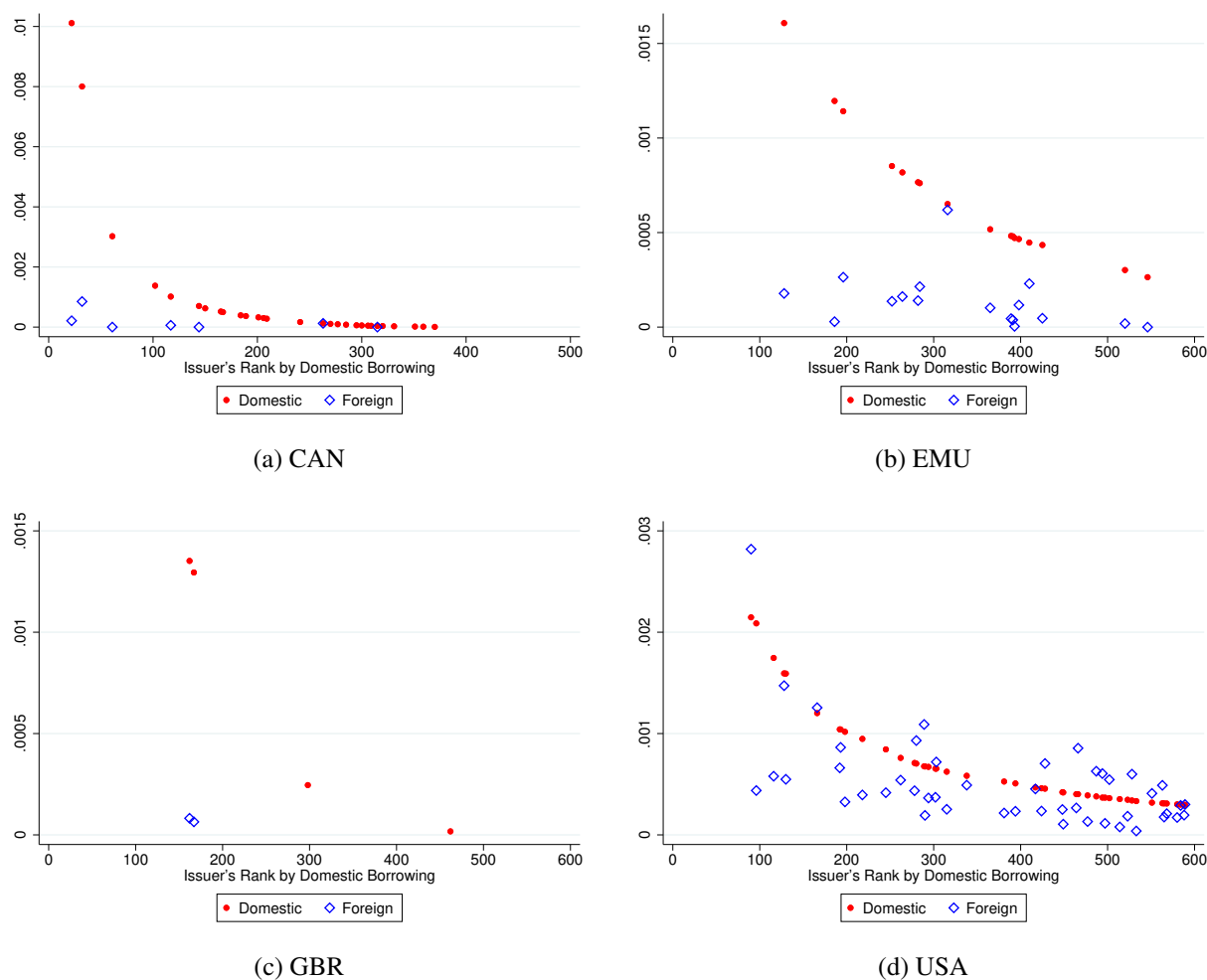(a) CAN

(b) EMU

(c) GBR

(d) USA

Note: This figure plots the corporate bond portfolio of domestic and foreign investors in Canada (a), the EMU (b), the United Kingdom (c), and the United States (d). The portfolio positions in each issuer are ranked according to their size in the domestic portfolio. Each figure plots only those firms that issue entirely in the local currency and are in the consumer products industry.

Figure A.16: Corporate Bonds from LC-only Issuers in Domestic and Foreign Portfolios, Energy and Utilities, 2017
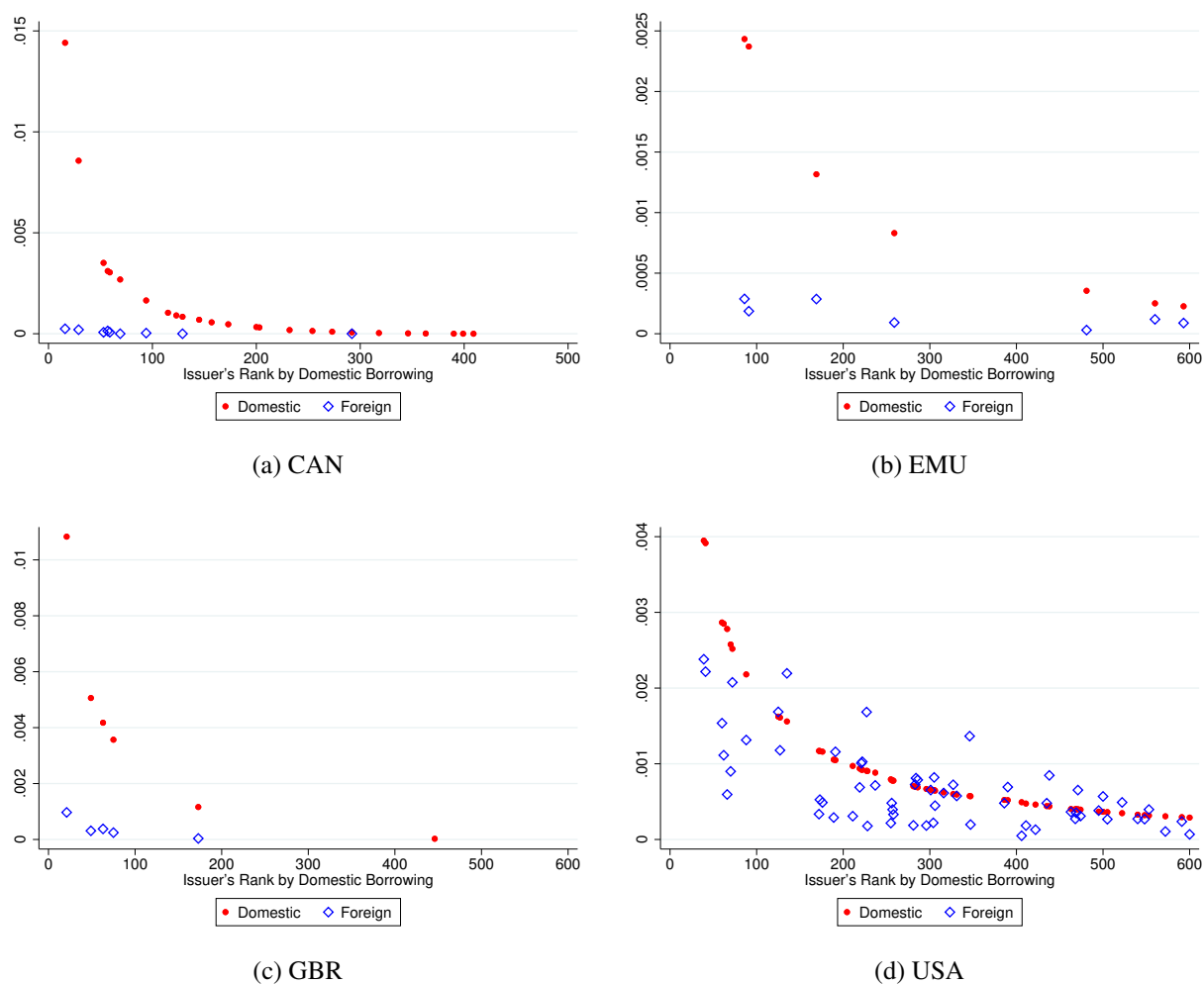

(a) CAN

(b) EMU

(c) GBR

(d) USA

Note: This figure plots the corporate bond portfolio of domestic and foreign investors in Canada (a), the EMU (b), the United Kingdom (c), and the United States (d). The portfolio positions in each issuer are ranked according to their size in the domestic portfolio. Each figure plots only those firms that issue entirely in the local currency and are in the energy and utility industry.

Figure A.17: Corporate Bonds from LC-only Issuers in Domestic and Foreign Portfolios, IT and Telecommunications, 2017


(a) CAN

(b) EMU

(c) GBR

(d) USA

Note: This figure plots the corporate bond portfolio of domestic and foreign investors in Canada (a), the EMU (b), the United Kingdom (c), and the United States (d). The portfolio positions in each issuer are ranked according to their size in the domestic portfolio. Each figure plots only those firms that issue entirely in the local currency and are in the IT and telecommunications industry.

Figure A.18: Corporate Bonds from LC-only Issuers in Domestic and Foreign Portfolios, Materials and Industrials, 2017

(a) CAN

(b) EMU

(c) GBR

(d) USA

Note: This figure plots the corporate bond portfolio of domestic and foreign investors in Canada (a), the EMU (b), the United Kingdom (c), and the United States (d). The portfolio positions in each issuer are ranked according to their size in the domestic portfolio. Each figure plots only those firms that issue entirely in the local currency and are in the materials and industrials industry.

Figure A.19: Corporate Bond Issuance (using SDC and Dealogic) in Foreign Currency and Borrowing from Foreigners, 2017


(a) CAN

(b) EMU

(c) GBR

(d) USA
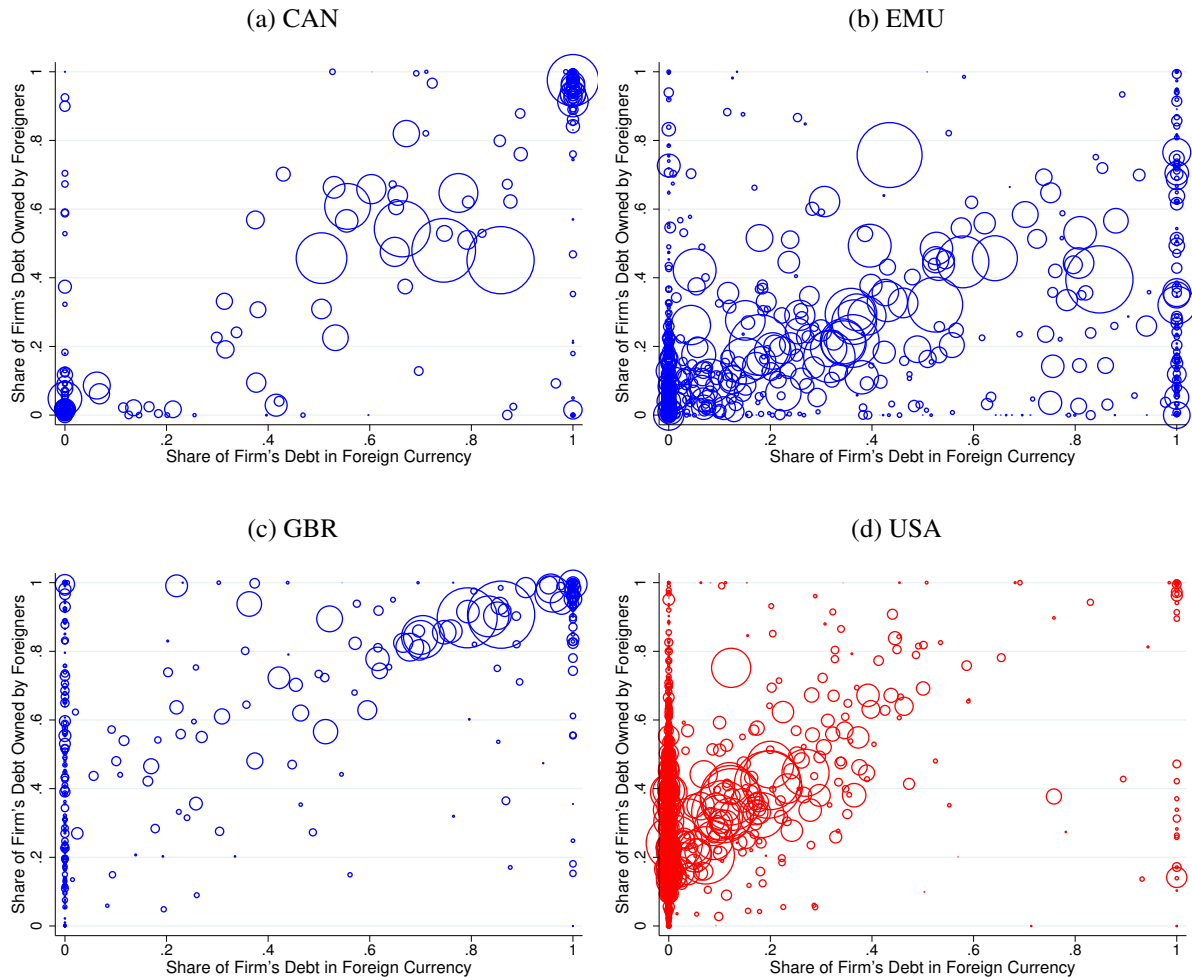
Note: In each panel, each bubble corresponds to a single firm based in Canada, the EMU, the United Kingdom, and the United States, respectively. The size of each bubble is proportional to the total amount borrowed via bonds by that particular firm. The x-axis plots the share of a firm's bonds that is in foreign currency and the y-axis plots the share of that firm's bonds that is owned by foreign investors. The foreign currency share of a firm's issuance is measured from SDC Platinum and Dealogic. The share of firm's bonds held by foreigners is measured using the positions in the Morningstar data.

Figure A.20: Joint Holdings of Firms' Debt and Equity by Foreign and Domestic Investors, 2017

(a) CAN

(b) EMU

(c) GBR

(d) USA
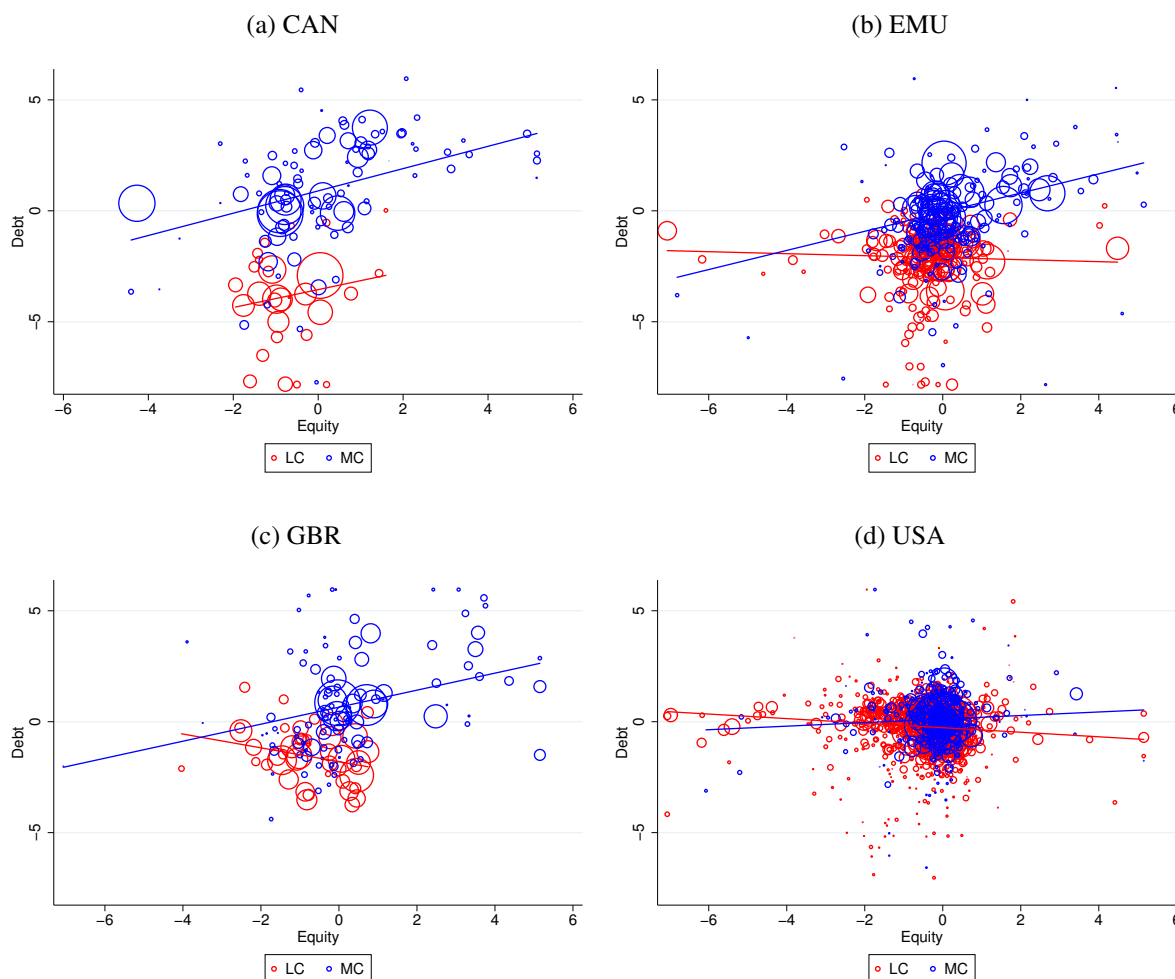
Note: This figure plots the relationship between how overweight foreign investors are in a firm's bonds and equity. We measure how overweight foreigners are as the logarithm of the ratio of the share of all corporate bond or equity investment that goes to firm p as a share of investment in country i. Foreign investors are more overweight the bonds or equity of firm p compared to domestic investors when this ratio is higher. This figure plots the bonds ratio on the vertical axis and the equity ratio on the horizontal axis for each firm in our sample that has a both an equity and a bond security. We exclude firms for which the foreign or domestic portfolio share, in either bonds or equity, is zero. Firms that borrow only in the local currency (LC) are depicted with red circles and those that borrow in multiple currencies (MC) with blue ones. The size of each circle is proportional to the total market value of total debt of the firm. All data are from end-of-year 2017.

Figure A.21: Foreign Holdings of Equities and Fund Shares in Luxembourg
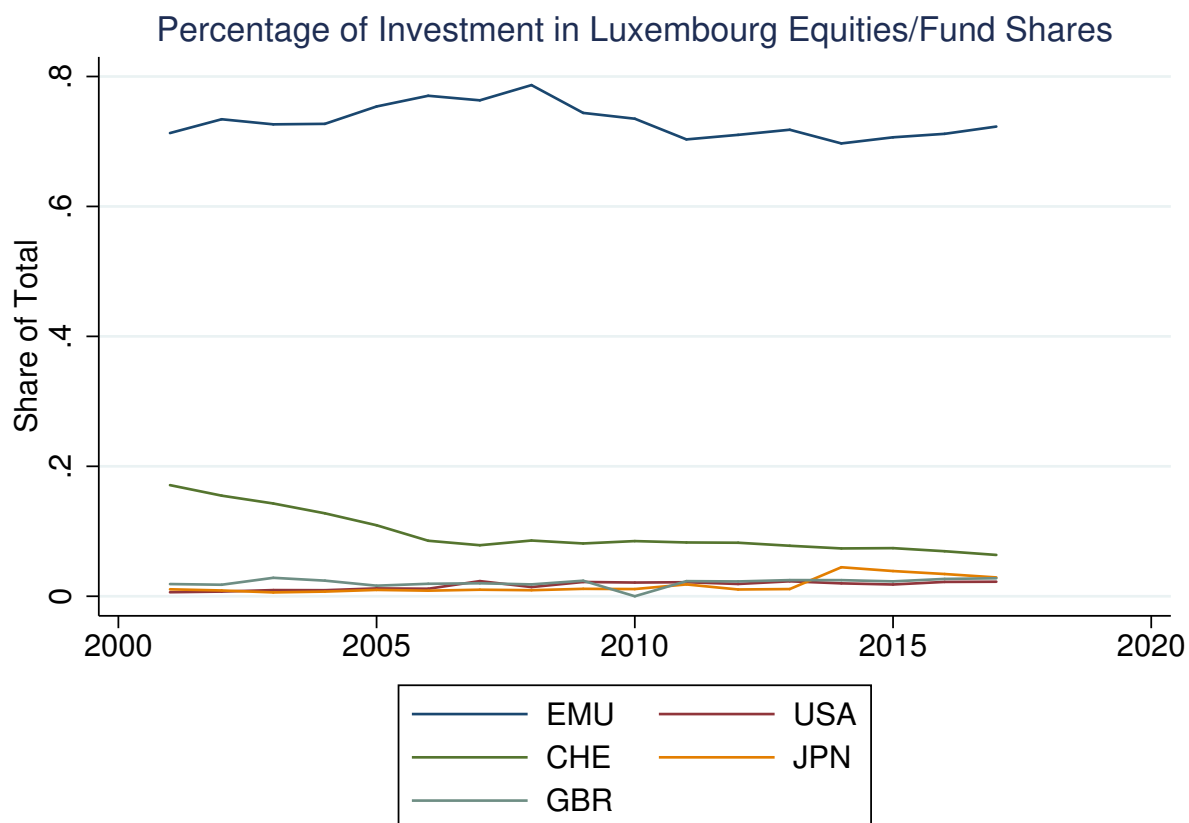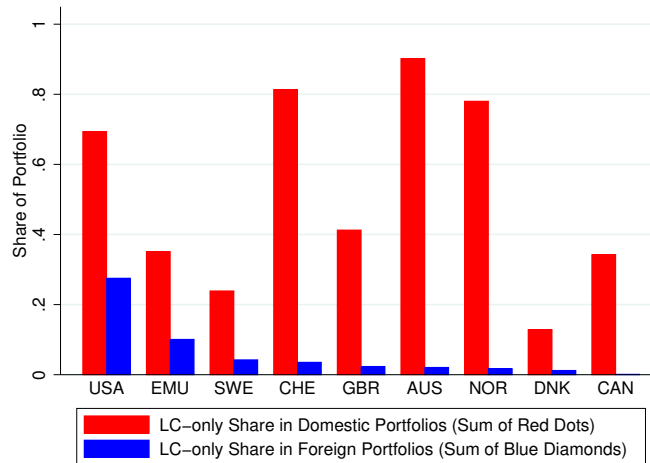

Note: The figure plots the holdings of equity securities, the vast majority of which are fund shares, in Luxembourg by foreign countries. The data are from CPIS. The EMU in this graphs is defined to be all EMU member states except Luxembourg.

Figure A.22: Results for 2005

(a) Share of Corporate Bond Investment Denominated in Issuer's Local Currency
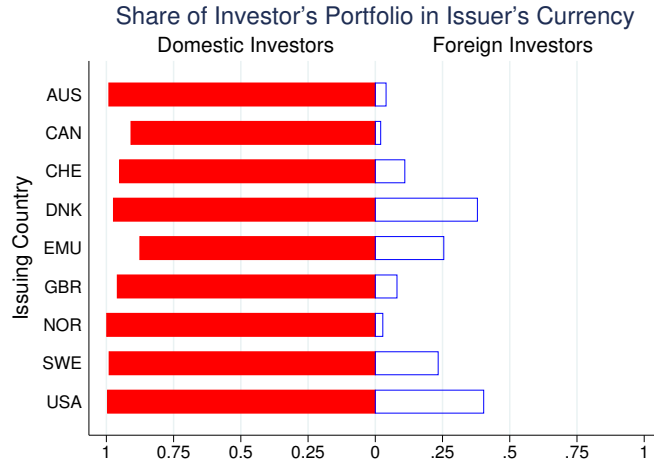
(b) Shares of LC-only Firms in Domestic and Foreign Bond Portfolios

Note: In the top panel, the solid red shaded bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all domestic investment in its corporate bonds. The hollow blue bars show for each issuing country the share of bonds denominated in the issuer's local currency out of all foreign investment in its corporate bonds. The bottom panel reports the share of all debt that is issued by firms that borrow only in local currency in domestic investor's domestic debt portfolio (red) and in foreign investor's debt portfolio in that particular country (blue). All data are from the end of 2005.