Home Currency Issuance in International Bond Markets

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Abstract

Large firms in small countries needing to raise capital in foreign markets have often found it difficult to place bonds in international markets in their own currencies, which resulted in currency mismatch on their balance sheets. However, analysis of a large sample of private international bond issues over the last 20 years indicates a substantive increase in international bond placements denominated in issuers' home currencies. This trend appears to have accelerated notably after the global financial crisis. We present a model that illustrates how temporary shocks, such as the global financial crisis, could have a persistent impact on home currency bond issuance by inducing entry and permanently lowering future issuance costs. A number of patterns in the data are consistent with the predictions of the model: We find that increases in home currency foreign bond issuance were particularly prominent in the aftermath of the crisis. Among advanced economies, increases occurred predominantly in economies with stable inflation and low government debt. We also observe greater increases among financial firms, which are more homogeneous than their non-financial counterparts. Our results suggest that both global financial market conditions and domestic economic policies play important roles in determining the share of home currency issuance.

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1 Introduction

Large firms in small countries rely on global capital markets to raise adequate funds. However, a majority of these firms have local currency expenses and mostly local currency revenue streams and therefore would like to borrow in local currency to avoid currency mismatch on their balance sheets.[1] Global investors, however, operate predominantly in a handful of global currencies (the U.S. Dollar, the euro, the British pound, the yen, and the Swiss franc) and likewise prefer to avoid currency mismatch on their balance sheets. The resulting mismatch has to reside somewhere and cannot be fully hedged because foreign exchange derivatives tend to have much shorter maturity than corporate debt.

Typically, global investors' capacities to diversify far exceed those of corporate borrowers in small countries, and it is therefore usually desirable for the investors to bear the currency mismatch by allowing corporate borrowers to issue debt in their own currencies. Historically, however, this has not been the equilibrium outcome—borrowers from non-global currency countries usually do not borrow internationally in their own currency, a phenomenon Eichengreen and Hausmann (1999) popularly dubbed "original sin" in the literature.[2] This less desirable outcome is often driven by the fact that the premia that would be demanded by global investors on debt denominated in high-risk countries' currencies increase national devaluation incentives and individual-firm default risk. Instead, borrowers usually denominate international debt in global currencies.[3]

This inability to borrow in home currency may result from either poor policies and institutions (Burger and Warnock, 2003, 2007), or from structural features in international capital mar-

[1] For the importance of balance sheet effects resulting from currency mismatch on corporate balance sheets see, for example, Krugman (1999), Schneider and Tornell (2004), Bordo and Meissner (2006), and Calvo et al. (2008). For a recent detailed analysis based on Korean firm-level data, see Kim et al. (2015). Currency mismatch may also limit the expansionary policy options of monetary authorities, as countercyclical depreciation actions increase default risk for sovereign and private borrowers facing currency mismatches (Eichengreen et al., 2007). Korinek (2010) shows theoretically that this can create a feedback loop leading to excessive foreign currency borrowing, while Aguiar et al. (2014), Rose and Spiegel (2015), and Du et al. (2016) analyze the tension between inflation credibility and sovereign debt dynamics.

[2] Eichengreen and Hausmann (1999) also use this term to describe the related fact that most countries also do not borrow *domestically* in their own currency at extended maturities. The focus of most subsequent work on original sin and this paper, however, concerns the international dimension.

[3] The original argument applies to sovereign borrowers, however, as Du and Schreger (2015b) demonstrate, higher reliance of corporates on foreign currency debt is also associated with more sovereign default risk.

kets (Eichengreen and Hausmann, 1999; Hausmann and Panizza, 2011).[4] In recent years, several countries' policies and institutions improved. Most notably, inflation stabilization, often achieved through recently-adopted inflation targeting policies, has garnered several previously-suspect countries new credibility, as regimes with formal inflation targets have not only proven to be durable,[5] but also have exhibited less exchange rate volatility, and fewer sudden stops (Rose, 2007). It is therefore possible that these policy improvements have led to increased home currency issuance in international bond markets. Below, we document that in recent years there has been an increase in the prevalence of local currency denomination of international bonds placed by corporates from small countries.[6] This development renews interest in the discussion of the relative importance of domestic policies and global market structure in the determination of the currency denomination of corporate debt placed on global markets.

We study a large sample of private issues from non-global currency countries, presenting evidence that countries' abilities to borrow internationally in their own currency has significantly increased over the last 20 years, and particularly since 2008. We present a model that illustrates the potential determinants of home currency bond placement in international markets, highlighting the role of the global financial crisis. While most of the literature to date concentrates on one part of the borrower's tradeoff—the costs and benefits of issuing in home currencies—our study also emphasizes how changes in the costs of issuing in a global currency help explain the recent increase in home currency issuance.

Using micro-level data from Dealogic's DCM Analytics (a.k.a. Bondware), we analyze the currency denomination of 16,584 international bonds issued by 2,147 firms from 30 non-global currency countries between 1995 and 2013. We limit our empirical analysis to international bonds issued by

[4]These issues are discussed in detail in Eichengreen and Hausmann (2005).

[5]Only Finland and Spain have abandoned inflation targets, doing so to join the European Monetary Union.

[6]Others have also noted this development. Hausmann and Panizza (2011) update their earlier work (Hausmann and Panizza, 2003) with developing country data through 2008, and find a small reduction in the incidence of original sin, limited to a few countries. Burger et al. (2012) and Burger et al. (2015) document a secular increase in U.S. investment in local currency emerging market private and public bonds from 2001 to 2011. Du and Schreger (2015b) demonstrate that between 2005 and 2011 this increase was not limited to U.S. investors. They also show, however, that this increase was primarily driven by increased foreign participation in domestic sovereign bond markets. In fact, they do not observe a substantial increase in the foreign holdings of emerging market local currency corporate debt. Martinez and Werner (2002) show that in case of Mexico, transition to floating exchange rate regime reduced the share of foreign currency borrowing by corporate borrowers.

private sector firms for three reasons: first, there is no allocation problem for currency mismatch for debt issued in domestic markets, since both borrowers and lenders generally operate in local currency; second, as the 1998 Russian crisis showed, foreign participation in local bond markets can be very volatile, while issuance in international markets is more stable; third, the data available on international bond issuance is much more consistent across countries and therefore allows for a more systematic analysis. We did not find any robust patterns in sovereign bond issuance and therefore exclude them from our analysis.[7] We document a secular decline in the use of global currencies, and an increase in the share of deals denominated in firms' home currencies, which substantially accelerated after 2008.

We propose a simple model to better understand the circumstances under which firms might experience an increase in the share of international debt issued in their home currencies. Our central assumptions are, first, that firms have heterogeneous abilities to issue in their home currency, both due to idiosyncratic shocks and country-specific premia on home currency issues; second, that firms "unseasoned" in issuing debt in their home currency pay an additional premium the first time they issue in their home currency; third, that global economic conditions influence country-specific premia; and fourth, that the transaction costs incurred in issuing in a given currency fall with increased overall issuance in that currency.

Specifically, we examine the case where country-specific premia on local currency issuance temporarily decrease in the event of a global crisis, due to either uncertainty in or shortages of global currencies (Caballero and Farhi, 2013), or because of global "yield chasing." Our model demonstrates how in the event of such a crisis, a temporary shock to the relative cost of home currency debt issuance may induce some firms to issue in their home currency for the first time. This increase in the share of firms "seasoned" in home currency issuance permanently reduces future home currency issuance costs. This increase in the share of seasoned firms has persistent effects, even after macroeconomic fundamentals return to normal. Because home currency premia are country-specific, the crisis has heterogeneous impacts by country on firms' abilities to issue in home currencies.

[7] Currency composition and cost of sovereign debt, including local debt purchased by foreign investors, in the aftermath of the crisis is analyzed by Du et al. (2016), Ottonello and Perez (2016), Du and Schreger (2015a), Du and Schreger (2015b), Alfaro and Kanczuk (2013), and Engel and Park (2016). Claessens et al. (2007) study currency composition of government bonds before crisis, while Burger and Warnock (2006) and Burger and Warnock (2007) analyze corporate and sovereign bond holdings by U.S. investors.

The model produces three testable hypotheses: first, non-global currency countries with better fundamentals are more likely to have experienced an increase in the share of home currency denominated foreign bond issues; second, countries with better fundamentals are also more likely to increase the share of home currency issuance following the global financial crisis; third, these effects are more pronounced the less dispersed are the firms' idiosyncratic costs of issuing in home currency. We then verify these hypotheses in the data.

We first examine the characteristics of non-global currency countries that experienced a substantive increase in the share of deals issued in home currency after the crisis. To do so, we estimate country-industry cross-section regressions to investigate whether there was an increase in home currency issuance from pre- to post-crisis years, controlling for industry fixed effects. We find that non-global-currency advanced economies[8] were more likely to experience an increase in home currency issuance. Moreover, countries with low pre-crisis government debt and no history of recent inflation were also more likely to increase their home currency deal share after the crisis.

Turning to issue-level panel regressions, we find no secular increase in the probability of home currency issuance for borrowers from advanced economies, but instead a discrete increase in this share following the global financial crisis. In contrast, for borrowers from emerging economies, we observe a secular positive trend in the probability of home currency issuance that is uninterrupted by the crisis and is not explained by changes in macroeconomic fundamentals.

For advanced economies, we also find that recent episodes of high inflation and high ratios of government debt to GDP are jointly associated with lower probabilities of issuing in home currencies, supporting the view that the inability to issue in home currency results, at least in part, from poor policies.[9] However, macroeconomic variables don't seem to affect the probability of home currency issuance for borrowers from emerging economies. We interpret this finding as suggesting that fundamentals in emerging markets are too poor on average for those nations to increase their firms' home currency borrowing prospects through improved national policies.[10]

[8] We heretofore simply use the term "advanced economies" to identify non-global-currency industrial countries.

[9] These results are consistent with the results from a cross-country analysis of total, international and domestic, local currency debt as of 2001 in Burger and Warnock (2006). They are also consistent with the finding by Dell'Erba et al. (2013) that higher debt levels are associated with higher sovereign spreads.

[10] McCauley et al. (2015) show that in recent years emerging markets dollar borrowing was on the rise.

In terms of issue-specific variables, the results corroborate our model in at least three important ways: (i) firms in industries with larger export shares are less likely to issue in home currency; (ii) larger issues are less likely to be denominated in home currencies; and (iii) firms that have previously issued in their home currency—which we refer to as being "seasoned" in home currency issuance—are more likely to do so again.[11]

Our firm-level data set also allows us to distinguish between financial and non-financial borrowers. Our model predicts that the more similar is the group of borrowers, the easier it is for them to transition to home currency issuance. While financial firms are a rather homogeneous group, the non-financial firms in our sample come from a large variety of industries. We would therefore expect non-financial firms to be more diverse in terms of their propensity to issue in home currency. Consistent with this prediction, we find that the increase in home currency issuance by advanced economies in the aftermath of the crisis was entirely driven by financial firms. Moreover, the significant sensitivity to macro variables, such as inflation history and debt-to-GDP ratio is also only observed among financial firms.

Thus, the data show that improvement in macroeconomic fundamentals in advanced economies helped their financial firms increase issuance in home currency, a finding consistent with that of Burger and Warnock (2007).[12] At the same time, the global financial crisis brought about a temporary increase in the cost of borrowing in global currencies that had persistent effects. Moreover, countries with better fundamentals prior to the crisis experienced a larger increase in the share of home currency bond issuance afterwards. These results highlight the interplay between domestic policies and features of international capital markets in explaining the currency denomination of international bonds.

The paper proceeds as follows. In section 2 we describe our data and present trends in the data that motivate our analysis. In section 3 we present our model and its empirical application. Section 4 brings model prediction to the data. Section 5 concludes.

[11] Introducing a time trend in combination with firm fixed effects removes this effect.

[12] Burger and Warnock (2007) show, for the pre-crisis sample of 40 countries, that U.S. investors are more likely to participate in local currency bond markets of countries with more stable macroeconomies.

2 Data Description

2.1 Data sources

Our empirical analysis is based on micro-level data from Dealogic's DCM Analytics (a.k.a. Bondware), which covers most new issues on the international bond market (Hale and Spiegel, 2012). We limit our analysis to issues placed by private companies in foreign markets—those explicitly marketed to foreign investors and labeled by Dealogic as "international issues."[13] Dealogic's deal-level data provide the name and nationality of the issuer,[14] the deal amount, and currency. With this information we classify deals as denominated either in home or foreign currency, and borrowers as either seasoned or unseasoned in home, and separately in foreign, currency issuance.

In total, our sample contains 16,584 international bond issues by 2,147 firms from 30 countries between 1995 and 2013.[15] Excluded from this sample are the global currency countries—countries whose currencies have traditionally dominated international trade invoicing and asset issuance (Eichengreen et al., 2007): the U.S., the U.K, Japan, Switzerland, and all euro area countries.[16] We also exclude financial centers, most notably Hong Kong and Singapore. We split the sample into borrowers from 9 advanced and 21 emerging economies, which are listed in Appendix Table A.2. Appendix Table 2 lists top borrowers in each country group, while Appendix Table A.3 shows the number of deals and amounts borrowed by each group for each year in our sample.

There are two primary weaknesses in our bond issuance data. First, the data only provide limited issuer information and do not include firm identifiers that could be matched to other sources. Consequently, we matched the firms by name and find that only 22 percent of the issuer parents also appear in the Compustat Global data set. As robustness tests, we include controls for firm size and leverage for this smaller sample of firms, which account for 48.5 percent of bond issues in our sample. Second, coverage of bonds issued in domestic markets is uneven across countries,

[13] Some of these bonds may have explicit restrictions that forbid their trading in domestic markets.

[14] We use "issuer nationality of operations" to identify deal nationality. This implies that bonds issued through offshore financial centers do not get assigned to the nationality of the offshore center, but to the country of residence of the issuer.

[15] We limit the sample to countries with at least 19 issues during the sample period (one per year on average), a minimum threshold for meaningful analysis.

[16] For a discussion of the currency composition of eurozone debt, see Bacchetta and Merrouche (2015).

which precludes us from controlling for domestic issuance.[17]

We match this bond-level data with country-level data from two sources: Gross government debt and inflation data come from the IMF's World Economic Outlook database. Exchange rate data come from the IMF's International Financial Statistics (IFS) database. Appendix Table A.4 presents summary statistics for variables used in our analysis.

DCM Analytics does not allow us to identify whether the issuer is an exporter or not, but we proxy for firm export shares using country-industry-year export shares in total production. We construct this measure in three steps. First, using country-industry export data with SITC descriptions from the United Nations Conference on Trade and Development, we assign 2-digit SITC codes to all issuers in our data. Second, we use industrial production data at the 2-digit ISIC code level from the United Nations Industrial Development Organization. We create a correspondence between 2-digit ISIC codes and 2-digit SITC codes to merge the export data with the industrial production data. Third, using 4-digit SIC descriptions included in the DCM Analytics data for each issuer, we create a correspondence between 2-digit SIC codes and 2-digit ISIC codes to merge the industry–level ratio of exports to industrial production for each borrower. We interpret this measure as a proxy for how likely a firm is to be an exporter.

2.2 Trends in home currency issuance across countries and over time

To motivate our discussion, we first document global trends and cross-country comparisons in the data. In Figure 1, we examine the prevalence of global currencies across three major time periods in our sample: pre-euro (1995-1998), euro pre-crisis (1999-2007), and post-crisis (2010-2013).[18] Although not a global currency, we separate bond issues in the Hong Kong dollar, whose dynamics are likely driven by developments in China. In the pre-euro period the top five global currencies dominate international debt issuance.[19]

The introduction of the euro prompted a substantial increase in the share of debt issued in the

[17] For an analysis of domestic market bond issuance that uses alternative data sources, see Du and Schreger (2015a).

[18] We define "euro" issuance in the pre-euro period as the sum of issuance in all legacy currencies. We omit 2008-2009 to avoid potential oddities in the data that could be driven by crisis-specific circumstances.

[19] For the dynamics of euro-denominated bond issuance, see the ECB July 2014 publication "The international role of the euro," pages 54-79.

euro at the expense of the yen, the U.S. dollar and the Swiss franc, as discussed in Hale and Spiegel (2012) as well as an increase in British pound issuance. After the crisis, euro-denominated issuance declines, reflecting concerns over the sovereign debt crisis in the euro area. A decrease in the share denominated in yen, British pound, Hong Kong dollar, and Swiss franc accompany the euro's decline. More striking is the substantial increase in the share denominated in "Other" currencies, driven by large increases in the use of the Australian dollar (AUD), the Norwegian Krone (NOK), and the Swedish Krona (SEK).

One potential source of this observed increase in non-global currency issuance could be that firms in countries home to those currencies began issuing in their own currencies. Figure 2 shows foreign and home currency bond issuance by firms in advanced, and separately, by firms in emerging economies. The top panel shows total debt in real US dollars; the bottom panel shows the number of deals. For both advanced and emerging economies, issuance in home currencies increased throughout the sample, but particularly after the crisis. This increase is more pronounced for the number of deals, rather than volume, implying that small deals are more likely to be denominated in home currency than large ones.[20] The share of home currency issuance is shown in Figure 3.

In Figure 4 we separate new issuers in the international bond market from those that previously issued in foreign currency (which we designate as seasoned in foreign currency), and those that previously issued in home currency (designated as seasoned in home currency), and show the prevalence of home currency issuance for each type of borrower over time.[21] Prior to 2000, firms in advanced economies that were seasoned in home currency were much more likely to issue in their home currency again than either firms that entered international bond markets for the first time or firms that previously issued in foreign currencies. Home currency issuance was much less common in emerging economies over the same period. An increase in the ratio of firms issuing in home currency after the crisis is apparent for advanced economies and noisily so for emerging economies.

Finally, in Figure 5 we show the change in the share of international bonds denominated in home currency before and after the crisis (between 2002-2006 and 2010-2013). While some coun-

[20] Note also the drop of issuance in 2008, especially by emerging economies.

[21] While we use data starting 1995 for our analysis, we actually observe bond issuance as early as 1991. Therefore, some firms in our data are seasoned as of the beginning of our sample: almost half of the firms that issued in 1995 were seasoned in foreign currency and about a quarter of the firms were seasoned in the domestic currency.

tries experienced small declines in the share of home currency issues,[22] most countries, advanced and emerging alike, experienced increases, with Australia, Canada, China, Norway, and Sweden experiencing the most substantial hikes.

3 Determinants of transition to home currency issuance: model

In this section, we examine a model of firm currency of issuance decisions that matches the above trends, as well as the discrete increase in home currency issuance following the global financial crisis.

We frame the model in terms of a representative firm from an economy which is atomistic in terms of world financial conditions. There are 3 periods, $t = 0, 1$ and 2. Each firm issues one dollar in one-period debt in periods 0 and 1 to finance an investment. The firm must decide whether to issue in its home currency, h, or a foreign "hard" currency, f.[23] Each firm, i, enters period 0 exogenously designated as either seasoned or unseasoned in issuing in their home currency, as a result of past behavior which we do not model. Investments pay a fixed return Y in periods 1 and 2; any profits earned are immediately paid out as dividends.[24]

There are $2\,\bar{\varepsilon}$ atomistic firms in the country. Firms therefore issue a total volume of $2\,\bar{\varepsilon}$ in debt each period. For simplicity, firm income is invariant with respect to financing choice, so decisions are solely based on choosing the currency of issue to minimize financing costs.

We assume that four factors influence a firm's choice of currency:

1. There exist economies of scale in total issuance in the home currency.[25] Let V_t represent the total volume of issues in the home currency at time t.

2. Firms differ in their ability to issue in the foreign currency. Each firm receives an idiosyncratic

[22] The exception is Hungary, with a 15 percentage point decline in its share of home currency issuance, due to the severe balance of payments crisis it experienced as a result of the global financial crisis.

[23] Jankowitsch and Pichler (2005) demonstrate that there are significant differences between issuer-specific credit spreads across different currencies.

[24] In the same period that profits are earned.

[25] One interpretation of this assumption is that larger markets are generally more liquid and the cost of liquidity is priced in corporate yield spreads, as demonstrated by Chen et al. (2007). These economies of scale are discussed, in the context of Asian bond markets, in Spiegel (2012).

shock, ε, which is i.i.d. and distributed on support $[-\overline{\varepsilon}, \overline{\varepsilon}]$ with mean 0 and density $f(\varepsilon)$, which measures its disadvantage in issuing in the foreign currency.[26] These shocks could proxy for the denominations of firms' export revenues, foreign currency stock trading, or relative hedging ability.

3. Firms unseasoned in issuing in their home currency pay a premium, $u \geq 0$, the first time they issue in their home currency.[27]

4. Firms pay a country-specific risk premium, ω_t, on issues denominated in their home currency. ω_t, which is i.i.d. and distributed on support $[\underline{\omega}, \overline{\omega}]$ with mean $\tau > 0$ and density $g(\omega)$, is a function of policies and macroeconomic conditions in the home country, as well as global economic conditions, as it measures the relative premium on home currency issuance. For example, ω would increase with currency risk premia (or market risk, as in Lettau et al. (2014)) and fall with the intensity of search for yield by global investors.

Given our assumptions, an unseasoned firm issuing in home currency pays interest rate $r_t^{h,u}$, which satisfies

$$r_t^{h,u} = 1 + u + \omega_t + \sigma(V_t) \tag{1}$$

in each period, where the world interest rate is exogenous and, without loss of generality, set to 1; $\sigma(V_t)$ represents scale economies in issuing in the home currency, which depend on the volume of transactions in that currency, V_t. We assume that we are in the range of positive scale economies by setting $\sigma(\cdot) \geq 0$, and $\sigma'(\cdot) \leq 0$. In each period, a firm seasoned in home currency issuance pays

$$r_t^{h,s} = 1 + \omega_t + \sigma(V_t). \tag{2}$$

[26] These assumptions simplify exposition and avoid built-in persistence. The results are essentially unchanged if we assume a one-time designation shock as opposed to a new shock each period.

[27] We show in the appendix that we can allow $u = 0$, so this cost does not drive our persistence results. We include it because we observe in the data that firms that previously issued in home currency were more likely to do so again (Figure 4).

Alternatively, a firm issuing in the foreign currency pays interest rate

$$r_t^f = 1 + \varepsilon. \tag{3}$$

To ensure sub-game perfect equilibrium, we solve the model backwards, beginning in the final period (period 2). Firms earn their income Y from their period 1 investments, pay outstanding debt obligations, and distribute profits as dividends. Their debt obligation is equal to $r_2^{h,u}$, $r_2^{h,s}$, or r_2^f, based on their period 1 action.

We show in the appendix that positive issuance in the home currency by seasoned firms when $V_1 = 0$ requires a positive number of firms entering period 1 seasoned, as well as the parameter restriction $\bar{\varepsilon} \geq \omega_1 + \sigma(0)$, and $\beta < 1$, to ensure a positive interior solution for V_1,. We adopt these restrictions.[28]

To solve the model analytically, we impose functional forms for the economies of scale function as well as a distribution for ε. For simplicity, we follow Hale and Spiegel (2012) and assume that the scale economy function satisfies $\sigma(V_t) = \alpha - \beta V_t$, where α and β are exogenous parameters, which satisfy the characteristics assumed above, and ε is distributed uniformly along the interval $[-\bar{\varepsilon}, \bar{\varepsilon}]$ with mean 0. In the appendix, we show that V_1 satisfies

$$V_1 = \frac{(\bar{\varepsilon} - \omega_1 - \alpha) - (1 - S_1)u}{1 - \beta}. \tag{4}$$

Second period home currency issuance is increasing in S_1, the share of first-period seasoned firms. The intuition is straightforward: firms that enter period 1 seasoned have reduced costs of home currency issuance going forward, so a greater share of seasoned firms raises the share of firms that find it cost effective to issue in home currency in the second period.

Because of the scale economies in the model, there are strategic complementarities. In particular, a low home currency equilibrium is possible where no firms issue in home currency. However, we

[28] In our sample we observe countries with positive home currency bond issuance in most years as well as countries with zero home currency bond issuance.

focus on the "good equilibrium" of the model, in the sense that each firm behaves as if all firms with realizations of ε above their relevant thresholds choose to issue in their home currency, resulting in a total volume of lending in home currency that validates this decision for the individual firm.

We next turn to the period 0 issuance decisions. Because the firm's seasoning status in period 1 affects its second-period borrowing capabilities, period 1 issuance costs are incorporated in its period 0 decisions. We show in the appendix that V_0 satisfies

$$\begin{aligned} V_0 = \frac{1}{(1-\beta)[(1-\beta S_0)2\bar{\varepsilon} - (1-S_0)\beta]} \, [S_0[\bar{\varepsilon} - (\omega_0 + \alpha)](1-\beta)2\bar{\varepsilon} \\ +(1-S_0)\{(1-\beta)[\bar{\varepsilon} - (u + \omega_0 + \alpha)] + (1-\beta u)(\bar{\varepsilon} - \tau - \alpha + \beta u S_0) - u(1-u)\}] \end{aligned} \tag{5}$$

where the denominator must be positive for stability.

This solution leads to the following proposition.

Proposition 1 *A one-period negative shock to ω_0 raises period 0 and expected period 1 issuance in the home currency. The absolute magnitude of this response is decreasing in the variability of the propensity of firms to issue in the foreign currency, i.e. in $\bar{\varepsilon}$.*

The proof follows directly from equation (5). Differentiating V_0 with respect to ω_0 yields

$$\frac{\partial V_0}{\partial \omega_0} = -\frac{S_0 2\bar{\varepsilon} + (1-S_0)}{(1-\beta S_0)2\bar{\varepsilon} - (1-S_0)\beta} < 0. \tag{6}$$

A negative shock to ω_0 therefore raises V_0, the volume of period 0 issuance in home currency. Moreover, this increase in V_0 raises the share of both seasoned and unseasoned firms that choose to issue in the home currency in period 1 given any realization of ω_1. Thus, a temporary shock to the relative cost of issuing in home currency has a persistent effect on the share of firms choosing to issue in home currency. Note that the strategic complementarities across firms drive this effect. As we show in the in appendix, this proposition holds even if $u = 0$, i.e. even if there are no individual gains from acquiring seasoned status.

We relate ω_t to countries' macroeconomic and monetary policies, considering them exogenous to

firm issuance decisions. Extending our model to a multi-country global economy, countries with better policies, and hence lower ω_t on average, will (1) have a larger share of firms issuing in home currency; and (2) be more likely to be influenced by a temporary decline in ω_t due to a change in global economic circumstances.[29]

Lastly, we turn to the implications of the variability of firm propensity to issue in foreign currency for the magnitude of this response. By (6), the cross partial satisfies

$$\frac{\partial^2 V_0}{\partial \omega_0 \partial \bar{\varepsilon}} = \frac{2(1-S_0)}{[(1-\beta S_0)2\bar{\varepsilon} - (1-S_0)\beta]^2} > 0, \tag{7}$$

indicating that the more similar the firms, the larger the response to changes in ω_t.

Our model therefore makes three testable predictions. First, countries with better economic fundamentals are likely to have a larger share of bonds issued in their home currency. Second, given a temporary decline in the relative cost of home currency issuance, countries with sufficiently sound fundamentals will experience a greater increase in the share of home currency issuance than countries with worse policies. Such relative advantages could arise from an increase in the cost of issuing in global currencies, as was observed during the global financial crisis. Finally, our cross-partial results indicate that firms that differ more in their propensity to issue in foreign currency are less responsive as a group to temporary changes in the relative cost of home currency issuance. The most common division of firms in the literature as well as in the markets is into financial and non-financial firms. Since financial firms are all in the same industry, they are likely to be viewed as more similar by the market than non-financial firms, which include industries from mining to telecommunication to consumer products. Thus, our result implies that financial firms are likely to respond more strongly to shocks because they are more homogeneous than non-financial firms. We test these hypotheses empirically in the next section.

[29] This is because countries with better fundamentals prior to the crisis will have a higher S_0 and $\partial^2 V_0 / \partial \omega_0 \partial S_0 > 0$.

4 Empirical analysis

In this section, we examine the determinants of bonds being denominated in home currency. We conduct this analysis at a bond issue-level analysis to test for potential compositional changes in the set of issuers.

4.1 Determinants

Our model predicts that a discrete global event that temporarily lowers the relative cost of home currency issuance for all countries will have a persistent positive impact on the share of home currency issuance for countries with sufficiently sound fundamentals. During the financial crisis, the relative cost of issuing in one's own currency likely declined, as markets experienced a dollar shortage initially, and later, the stability of the euro came into question.[30] Moreover, zero or near-zero policy rates in the U.S., U.K., and euro area resulted in yield-chasing by institutional investors and increased demand for assets in alternative currencies. As a result, we posit that the crisis offered firms in countries with sufficiently attractive macroeconomic characteristics an increased opportunity to issue foreign debt in their own currency.

As shown in Figure 5, some countries experienced a substantial increase in the share of home currency issuance after the crisis while others did not. Inflation rates are likely to be important to investors weighing currency risk. We include a variable indicating a history of high inflation in the issuer's country, defined as the number of years since inflation exceeded 10 percent rate prior to the crisis.[31] We also expect fiscal solvency to impact investors' interest in the country's currency assets, so we include the debt-to-GDP ratio of the issuer's country. We also include interaction of these two variables. We have experimented with a large number of other variables that are found to be important in determining issuance or spreads on bonds in the literature.[32] However, none of the these variables were significant in explaining whether bond is denominated in home currency.

[30] Du and Schreger (2015a) show that local currency spreads on emerging markets' sovereign bonds declined relative to foreign currency spreads during the crisis.

[31] We experimented with using a continuous measure of inflation instead, but found it insignificant. Our results are robust to perturbations in either the 10-year or 10-percent thresholds, as show in robustness tests section.

[32] Examples are interest rate differentials, exchange rate volatility, current account, country debt to GDP ratio.

We estimate our issue-level regression using linear probability model, controlling for firm fixed effects. To do so, we analyze the currency denomination of 16,584 individual bond issues by 2,147 firms from the 30 non-global currency countries listed in Appendix Table A.1. Issues are denominated in an issuer's home currency or a foreign currency, which we assume to be determined by the relative cost of borrowing in a global versus home currency, $r^f - r^h$. Since we cannot observe the counterfactual, we obviously do not observe this relative cost, and moreover the information on issuance cost is incomplete in the data. Thus, we have a latent variable model,

$$\text{I(issue in home currency)} = \begin{cases} 1 \text{ if } r^f - r^h > 0 \\ 0 \text{ if } r^f - r^h \leq 0, \end{cases}$$

$$r^f - r^h = X'\beta + \varepsilon,$$

where X is a set of explanatory variables that include country fundamentals, issue size, whether the issuer previously issued in home or foreign currency, as well as a time trend, post-crisis period indicator, and firm fixed effects. We estimate this model using a linear probability approach in order to estimate panel regressions with firm fixed effects.[33] Since many of our explanatory variables are country-year level, while our unit of observation is a bond issue, we cluster standard errors on country-year pairs.

Our model predicts that countries with better fundamentals will have a lower cost of issuing in home currency, resulting in a larger share of home currency issuance by private firms. Many differences across countries could account for differences in home currency issuance that are not captured in our model, such as scale advantages due to country size, quality of contract enforcement, et cetera. Time-invariant factors are captured by firm fixed effects. Thus, we modify our hypothesis in dynamic terms: when a country's fundamentals improve, we expect to observe an increased share in firm home currency issuance. Because the dynamics are likely to differ across countries, we separately estimate the effects for advanced and emerging economies in our main regressions. Our results are reported in Table 2, with firm fixed effects included in every regression.

[33] Our results, however, are robust to using conditional logit specifications that allow for firm fixed effects.

In columns (1) and (5) we only include issue-specific variables that, according to our model, may affect a firm's probability of issuing in home currency for advanced and emerging economies, respectively. Consistent with our interpretation of the firm's idiosyncratic shock as in part reflecting firm export revenues, we find that firms that operate in industries with a higher export share are less likely to issue in home currency, with the effect statistically significant for advanced economies. These firms are more likely to have global currency revenue streams which makes borrowing in global currencies more attractive because it allows them to reduce currency mismatch on their balance sheets (Bris and Koskinen, 2002). We also find that for firms in both advanced and emerging economies, larger issues are less likely to be denominated in home currency. There are two reasons for this: first, firms need a sufficiently deep market to successfully place a large issue; second, larger issues are likely to be from larger firms, which may be more adept at hedging their positions. In addition, larger firms are also more likely to be exporters (Melitz, 2003), and given that we are only able to control for the *industry's* export share, part of this effect could be captured in deal size variation.

In the model, we assume that issuing in home currency for the first time is costly. Thus, we expect issuers seasoned in home currency to be more likely to issue in home currency. While our model does not explicitly include a cost associated with issuing in a global currency for the first time, we might expect such a symmetric cost from the literature. Our empirical model therefore includes a cost associated with issuing in any currency for the first time. Thus, we control for firms' past experience issuing in both home, and separately in foreign currency, the omitted benchmark group being new issuers accessing the international bond market for the first time.

The interpretation of these indicators—whether the issuer is seasoned in home and foreign currencies—is slightly complicated by our firm fixed effects; the coefficients are identified only by firms that became seasoned during our sample period. Firms in advanced economies that are seasoned in home currency are more likely to issue in home currency again, consistent with our model.[34] For firms in emerging economies, being seasoned in foreign currency does not affect the probability of issuing in home currency. This may be due to the fact that only a small number of firms from emerging markets repeatedly borrowed in home currency. These issue-specific variables,

[34]This effect goes away once we include a time trend.

along with firm fixed effects, explain about a third of the variation in home currency issuance for firms in advanced economies and slightly more than that for firms in emerging economies.

In columns (2) and (6) we add a simple linear trend to test whether the secular trend towards more home currency issuance in international markets documented in Figures 2 and 3 is explained by changes in the composition of borrowers. However, even with firm fixed effects and other issue-specific controls, we still observe a statistically significant upward trend in home currency issuance. In columns (3) and (7) we test whether this reflects a long-term trend or a change that occurred since the global financial crisis by including, along with the trend, a post-crisis indicator. We find no evidence of a secular trend for advanced economies, but instead an increase in home currency issuance after the global financial crisis. Emerging economies, by contrast, do appear to have a secular upward trend in home currency issuance, and lack any detectable crisis-specific effect.

In columns (4) and (8) we add country-specific characteristics to understand the role of macroeconomic fundamentals. Included are the same variables we found important in our cross-section analysis—the government debt to GDP ratio and a history of high inflation. Here, a history of high inflation is a binary variable that indicates whether that country had at least one year in the previous 10 where average inflation rate exceeded 10 percent.[35] This results in a simple interpretation of the interaction between these variables, which we include to allow for high inflation to have a differential effect co-dependent on the level of fiscal debt. We experimented with a host of additional macroeconomic variables that could potentially impact the probability of issuing in home currency, but did not find any others entering robustly. Most notably, controlling for inflation history, we did not find an effect specific to explicit inflation targeting regimes.

Our results suggest that short-term macroeconomic fundamentals matter only for issuance decisions in advanced economies. For these countries, the higher is the government debt, the more important is the history of inflation. In particular, with the debt-to-GDP ratio exceeding 49 percent, a history of high inflation negatively affects the probability of firms issuing in home currency.[36]

[35]The list of advanced economies and years for which high inflation indicator takes on a value of 1 includes Iceland 1995-2000, New Zealand 1995-97, and Sweden 1995-2000 amongthe advanced economies, while the list for emerging economies is too long to list here.

[36]The total effect of high inflation for countries with a debt to GDP ratio of 38 percent or more is negative and becomes statistically significant at 5 percent level when the debt-to-GDP ratio reaches 49 percent. Note that in the sample of advanced economies mean debt-to-GDP ratio is about 37 percent with standard deviation of 24.5

For these countries, a history of high inflation reduces the probability of issuing in home currency by about 9 percent. We don't observe any effects of macroeconomic fundamentals for firms in emerging economies.

4.2 Issuer heterogeneity

Our data allow us to distinguish between two important sets of borrowers: financial and non-financial companies. These two groups differ in many ways and frequently the markets for financial and non-financial companies' bonds are viewed as separate. One important distinction from the point of view of our model predictions is that financial firms are much more homogeneous. Our model predicts that a bond market with firms that are more homogeneous will be more sensitive to exogenous changes in relative issuance costs.

To test this prediction, we divide our data into issues by financial firms–including those that are part of large vertical conglomerates–and issues by non-financial firms. We repeat our analysis with firm fixed effects and report our main regressions in Table 3. We find that our main results are mostly driven by bonds issued by financial firms from advanced economies (column (1)) — only for this group do we observe a positive increase in home currency issuance in the aftermath of the global financial crisis and sensitivity to better fundamentals. Even though individual coefficients on inflation, debt, and their interaction are not significant for advanced economies' non-financial firms, there is still a negative and significant (at 5 percent) effect of high inflation for firms from countries with debt to GDP exceeding 68 percent. For financial firms this threshold is similar to the full sample — 48 percent.

For the non-financial firms from advanced economies, as well as for financial firms from emerging economies, we observe a small secular trend towards increased home currency issuance (columns (2) and (3)). For financial firms from emerging economies we in fact observe a slowdown in the trend after the global financial crisis.

As before, we find that larger issues are less likely to be denominated in home currency. Also consistent with our model, we find that financial firms that are parts of corporations that are in

percentage points (Table A.4.).

exporting sectors are less likely to issue in home currency.

Together, these results indicate that both global financial market conditions and macroeconomic fundamentals influence an advanced economy firm's ability to borrow internationally in its home currency. While idiosyncratic firm factors account for the probability that firms borrow abroad in home currency in all countries, only in advanced economies do we observe a statistically significant increase in home currency issuance following the global financial crisis. This probability is higher if a firm's home country does not have a combination of high debt-to-GDP and a history of high inflation, and is driven by the financial firms in our sample, which are more homogeneous than the non-financial firms. In emerging economies, macroeconomic fundamentals are still by and large below the threshold that would allow for a substantial increase in home currency issuance from an event such as the global financial crisis, but we observe a small secular upward trend in home currency issuance by emerging market firms as well.

4.3 Robustness tests

In this section we subject our results to a wide variety of robustness tests. First, we add a number of potential additional variables, including the current account, foreign reserves, exchange rate volatility, inflation rate, and others. In all of these, we found no effects.[37] In addition, we conducted a number of robustness tests for the regressions that produce our main results — firm-level regressions for advanced economies, all firms and financial firms only, reported in column (4) of Table 2 and column (1) of Table 3, respectively. The corresponding results are presented in Appendix Tables A.5 and A.6.

We next tested whether our regressions are misspecified in terms of the underlying error distribution because we estimate a linear probability regression specification. Since our benchmark regressions include firm fixed effects, probit version of this regression is not identified, however, we can estimate a conditional logit regression. We can see from column (1) in both tables that our results remain qualitatively unchanged, for both the full sample of firms and for financial firms only.[38]

[37] These tests are available from the authors on request.

[38] Coefficient magnitudes change substantially, of course, different, because they have different interpretations in

We next investigate whether our results are driven by any specific countries included in our sample. One country that tends to stand out is China, which experienced a number of economic changes during our sample period, including increased bond issuance, for reasons that are largely orthogonal to our model's argument. China is included in the group of emerging economies in our analysis, thus, it cannot be driving the results for advanced economies. Another country that stands out specifically in our analysis, is Sweden, in that we observe a large increase in Swedish kronor denominated bonds. We want to make sure that Sweden is not the only country that drives our results. Excluding it from the sample, we observe from column (2) in both tables that the results remain qualitatively unchanged, but are in fact larger in magnitude and more statistically significant. Similarly, Iceland could be a country that may raise concerns because of its importance in carry trade activities in the 2000s. In column (3) in both tables we exclude Iceland from the sample and show, once again, that the qualitative base results remain.

In the paper we focused exclusively on bonds issued by private firms, financial and non-financial. We find that including sovereign bond issues in the sample does not alter our results (column (4) in both tables). However, when we conduct similar analysis for sovereign issues only, we do not find any significant results (column (5) in both tables). This is because our data source only includes bonds that are issued explicitly in international markets and in recent years sovereigns were issuing more in domestic markets in both home and foreign currencies (Du and Schreger, 2015b).

It is possible that there is heterogeneity with respect to foreign ownership of bond issuers. To make sure that foreign-owned firms don't drive our results, we exclude all borrowers that have foreign parents, which contribute about 13 percent of the bond issues in our regressions. As we can see from column (6) in both tables, our results remain unchanged. Even though the coefficients on high inflation indicator and its interaction with debt-to-GDP ratio are different, the threshold level of debt above which high inflation has negative impact on the probability of home currency issuance is basically unchanged (47 rather than 49 percent).

One potential concern is that the countries for which we observe the greatest increases in home currency issuance are those that were carry trade destinations after the global financial crisis. More

these specifications.

generally, in pre-crisis sample McBrady and Schill (2007) find evidence of opportunistic foreign currency borrowing taking advantage of covered and uncovered cross-currency yield differences. In columns (7)-(9) in both tables, we attempt to capture this effect by controlling for cross-currency swap spreads (10 year, 5 year, and 1 year, respectively). In fact, we find that countries with higher 10-year and 5-year spreads were more likely to issue in home currency. Our results, however, are not affected by including these control variables.

In an attempt to control for additional firm-level variables, we merged our data with Compustat. As described previously, only a subset of the firms in our data appears in Compustat and not all of these have information on balance sheet variables in all years in our sample. The two variables that are reasonably well populated are total assets and total debt, allowing us to control for firm size and leverage (column (10) in both tables).[39] As a result of our data limitations, we can only include 48 percent of total number of bond issues for our advanced economy sample in the regression with firm-level controls.[40] In this limited sample we observe a positive trend in home currency issuance and a slightly higher debt threshold, above which high inflation has a negative impact on the probability of home currency issuance. Otherwise the results are essentially the same. We find that larger firms are less likely to issue in home currency, even controlling for deal amount. For financial firms we also find that higher leverage is associated with a higher probability of home currency issuance.

Finally, we show the results with alternative measures of inflation. In column (11) in both tables we substitute the indicator for high inflation with an indicator of whether or not a country is an official inflation targeter(Rose, 2007) (with 1 indicating *not* an inflation targeter), and in column (12) in both tables we include a continuous measure of inflation volatility measured as the coefficient of variation of monthly CPI in a given year. We find that whether or not a country is officially following an inflation targeting regime does not affect the firms's probability of issuing international bonds in home currency, whether we are looking at our full sample, or just the financial firms. The effect of inflation volatility is similar to that of the high inflation indicator, but weaker — the threshold at which debt has a negative effect on home currency issuance is 95 percent for full

[39]Unfortunately, there is no information on foreign sales or foreign currency revenues. We therefore continue to use our industry-level proxy for export share.

[40]The share grows to 51 percent when we limit our sample to financial firms.

sample and 100 percent for financial firms.

5 Conclusion

Using a large sample of individual foreign bond issuances, we find that the ability of firms to issue international bonds denominated in their home currencies has increased. Our results also highlight the role played by domestic macroeconomic conditions in determining when private firms can begin issuing foreign bonds denominated in their home currencies. Furthermore, we hypothesize that the global financial crisis of 2008-2009 raised the potential for firms in some countries to issue in their home currencies. We now appear to be in a new equilibrium in the global economy—one in which a broader set of countries are able to issue debt internationally in their own currency. However, we also find that those countries that were able to take advantage of the temporary disruption and near-zero interest rates in global financial markets were the ones with a combination of low government debt and a history of stable inflation. These macroeconomic characteristics are consistent with the channels highlighted in the original sin literature, namely their implications for the perceived costliness to a country of default on home currency debt through higher inflation. Advanced economies with lower government debt and inflation were more likely to increase home currency foreign bond issuance during our sample period. These characteristics were insignificant for emerging economies, however. As a group, these countries' fundamentals still appear to be on average below the threshold at which improved domestic macroeconomic characteristics could result in an observable increase in the incidence of home currency issuance by private firms.

Our paper also contributes to the discussion of global reserve currency dominance, as our data indicates a decline in the role of global currencies in the international bond market. Going forward, many anticipate the end of a single-currency dollar-dominated global monetary system. For example, Chinn and Frankel (2008) and others have predicted that the euro could eventually surpass the U.S. dollar as the dominant global reserve currency.

A related issue is whether the international financial system is moving away from reserve-currency dominance. Eichengreen and Flandreau (2012) argue that it was desirable policies, not scale economies, that led to the ascent of the dollar at the expense of the British sterling. Prior to

that, these currencies shared the reserve currency role relatively equally [Eichengreen and Flandreau (2009)]. A number of studies envision a multi-polar world going forward, with a non-trivial regional role for the renminbi [e.g. Dobson and Masson (2008) and Eichengreen (2012)], while others argue that the dollar's inertial advantages are likely to maintain its preeminence for some time to come (Goldberg, 2010). The severe dollar funding needs of foreign banks during the global financial crisis in 2008-2009 demonstrated that the dollar remained the dominant global reserve currency.

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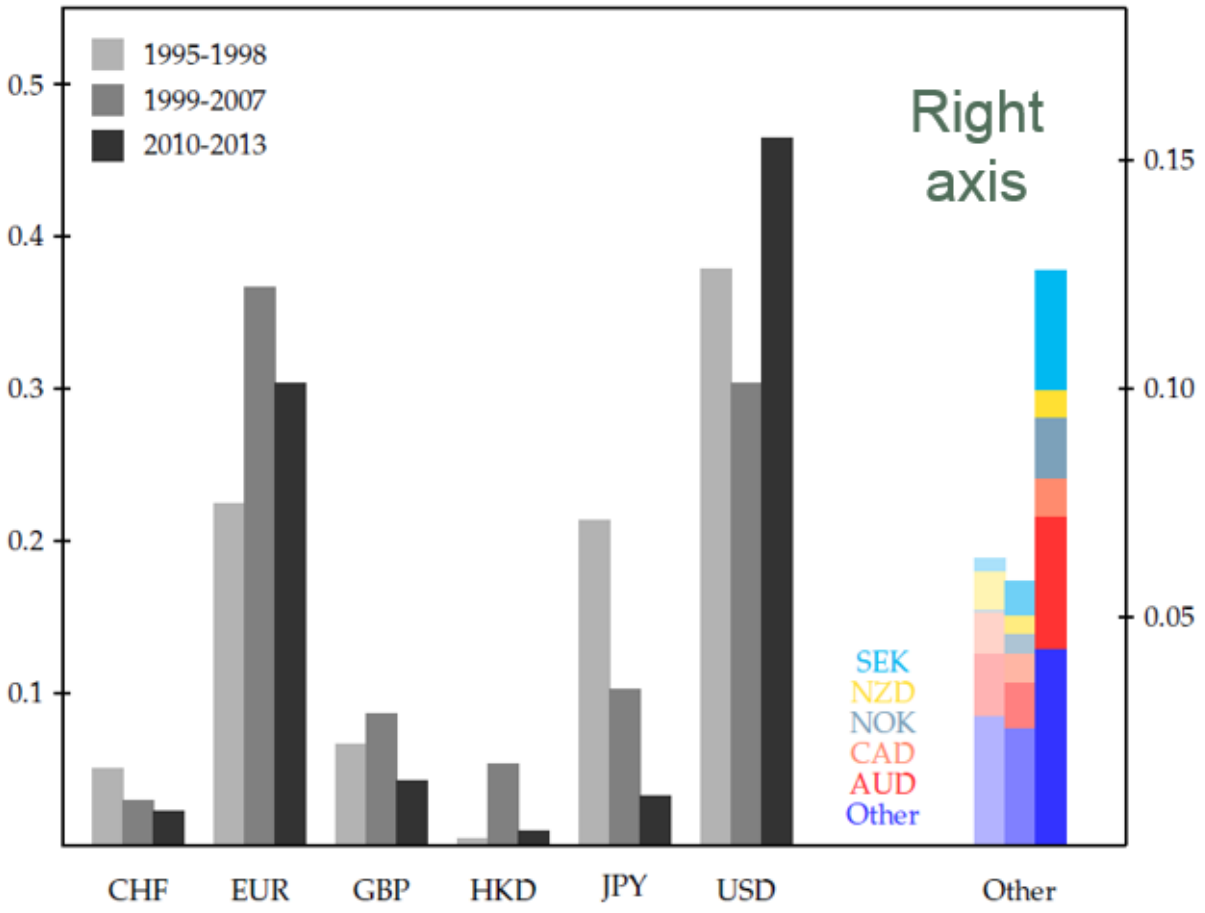
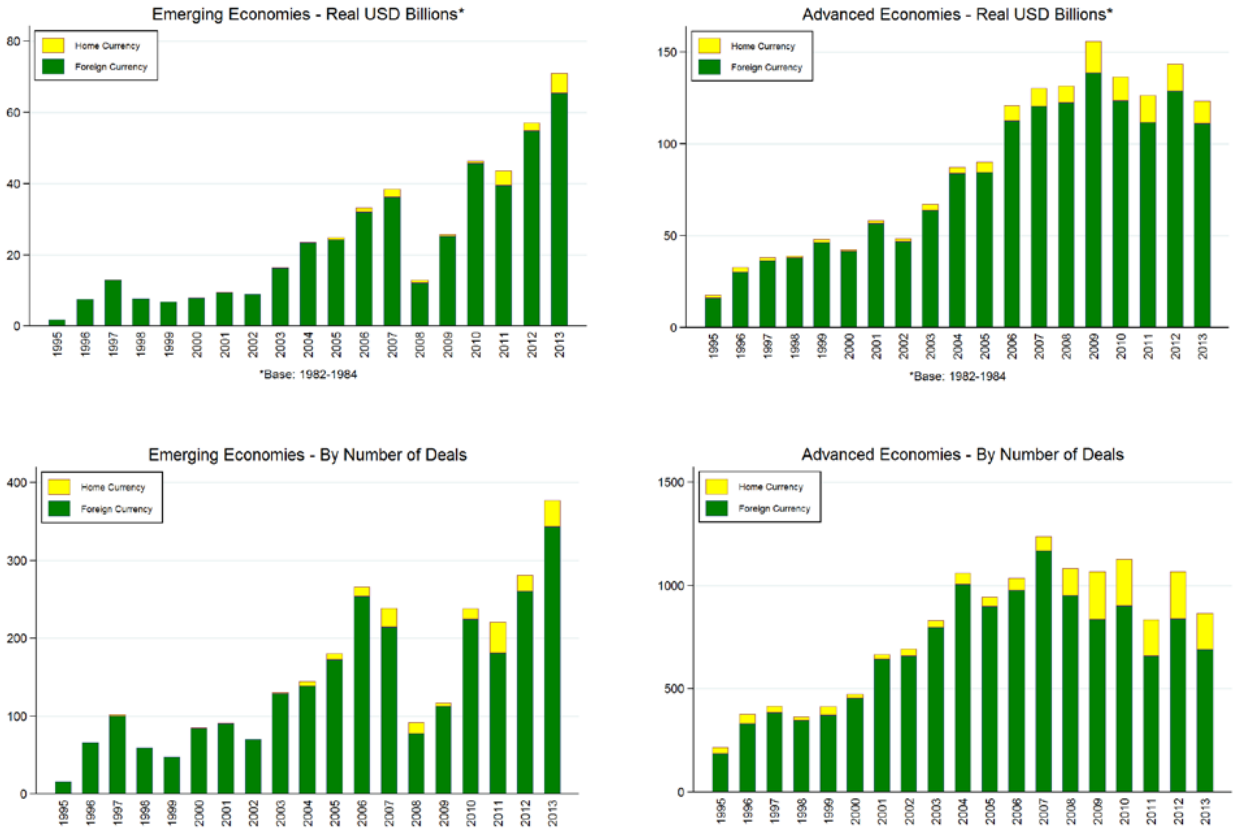
Figure 1: Currency choices of international borrowers (share of total issuance).



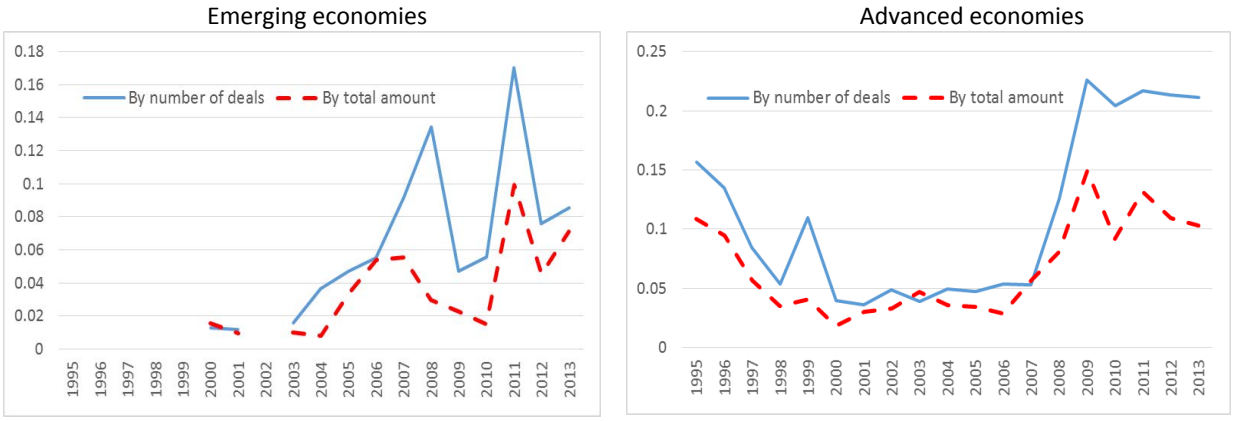
Note: Depicted are shares of total bond issuance by all countries in our sample in each of the currencies for three subperiods in our sample. Source: Dealogic and authors' calculations.

Figure 2: Bond issuance by currency and country group.



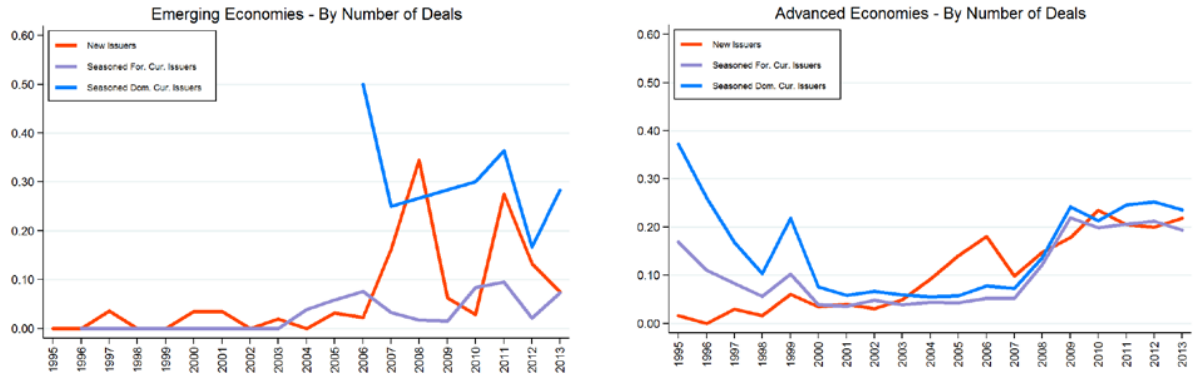
Note: Depicted total amount (in real USD) or total number, as indicated, of bonds issued by all emerging and advanced economies in our sample. Source: Dealogic and authors' calculations.

Figure 3: Share of home currency issuance by country group.



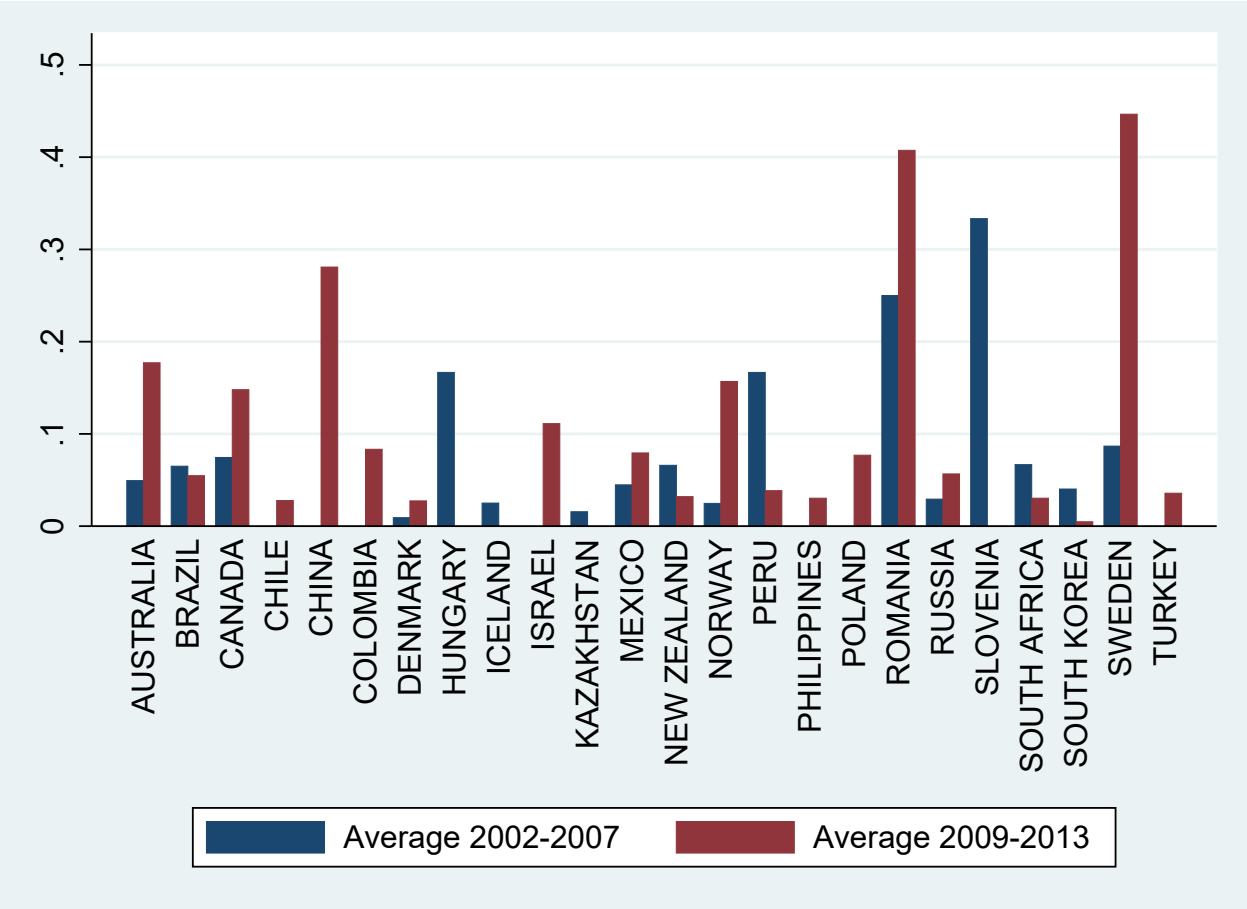
Note: Reported are shares of home currency issuance in total issuance (by real amount or number of issues, as indicated) by emerging and advanced economies in our sample. Source: Dealogic and authors' calculations.

Figure 4: Share of number of bonds issued in home currency
by firm's prior experience and country group.



Note: Reported are shares of home currency issuance in total issuance by number of issues by emerging and advanced economies in our sample. The shares are reported separately for three subgroup of borrowers: those issuing in international market for the first time (new issuers), those who issued previously in international market in foreign currency (seasoned for. cur. issuers), and those who issued previously in international market in their home currency (dom. cur. issuers).
Source: Dealogic and authors' calculations.

Figure 5: Change in the share of bonds issued in home currency between 2002-2006 and 2009-2013.



Note: The bars represent the average share of bonds issued in home currency. Missing bars indicate zero share. Countries with zero share both before and after the crisis are omitted. Source: Dealogic and authors' calculations.

Table 1: Testing model assumptions. Dependent variable — Spread to Benchmark

Assumption	Sample	Control variable	Coef.	St.Err.	Controls	Observations
1. Scale economies	HC bonds	Log(Market size)	-0.11*	0.05	Year FE, Firm FE	699
	FC bonds	Log(Market size)	-0.09***	0.05	Year FE, Firm FE	7508
2. Export share	All bonds	Industry export share				
3. First-time premium	HC bonds	I(seasoned in HC)	-1.51***	0.12	Year FE, Country FE	814
	FC bonds	I(seasoned in FC)	-0.66***	0.04	Year FE, Country FE	8449
4. Country risk	All bonds	Debt/GDP	0.014***	0.004	Year FE, Firm FE	
		Inflation	0.047***	0.012	Year FE, Firm FE	7813

Unit of observation is an *individual* bond issue. Fixed effects linear regressions.
Debt is gross government debt. No additional control variables.
Standard errors in 1. and 4 are clustered on country-year. *(P< 0.10), **(P< 0.05), ***(P< 0.01).

Table 2: Issue-Level Regressions: Probability of Home Currency Issuance.

	Advanced Economies				Emerging Economies			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trend		0.0093***	-0.00018	-0.003		0.0081***	0.012**	0.012**
		(0.0023)	(0.0028)	(0.0029)		(0.0031)	(0.0049)	(0.0049)
Post Crisis			0.11***	0.12***			-0.042	-0.043
			(0.026)	(0.034)			(0.028)	(0.028)
High inflation (a)				0.25*				-0.011
				(0.14)				(0.065)
Debt / GDP				0.00071				-0.00075
				(0.0011)				(0.00097)
$(a) * (b)$				-0.0069***				-0.000017
				(0.0025)				(0.00095)
Export Share	-0.41**	-0.34**	-0.33**	-0.34**	-0.061	-0.067	-0.079	-0.053
	(0.16)	(0.16)	(0.16)	(0.16)	(0.062)	(0.080)	(0.093)	(0.093)
Deal Amount	-0.15***	-0.16***	-0.17***	-0.17***	-0.098*	-0.12**	-0.12**	-0.13**
	(0.037)	(0.038)	(0.038)	(0.040)	(0.057)	(0.056)	(0.055)	(0.056)
Seasoned Dom. Cur.	0.066***	0.019	0.0031	-0.0075	-0.14	-0.16**	-0.16**	-0.16**
	(0.016)	(0.015)	(0.016)	(0.018)	(0.086)	(0.081)	(0.081)	(0.081)
Seasoned For. Cur.	-0.009	-0.036*	-0.021	-0.018	0.020	-0.00011	0.00021	-0.0015
	(0.02)	(0.02)	(0.019)	(0.018)	(0.014)	(0.015)	(0.015)	(0.015)
Observations	14020	14020	14020	14020	2564	2564	2564	2564
Adjusted R^2	0.30	0.31	0.32	0.32	0.39	0.39	0.39	0.39
Adjusted within R^2	0.012	0.025	0.036	0.044	0.022	0.029	0.031	0.029
Threshold debt level$^{(c)}$				49				none

Unit of observation is an *individual* bond issue. Dependent variable is equal to 1 if issue is denominated in home currency, 0 otherwise. Linear probability model with firm fixed effects. $^{(a)}$Recent high inflation = 1 if inflation over 10 percent was observed in last 10 years, 0 otherwise. $^{(b)}$Debt is gross government debt. $^{(c)}$ is debt to GDP (in percent) level above which high inflation has negative and significant (at 5 percent) effect on home currency issuance. Robust standard errors clustered on country-year. *(P< 0.10), **(P< 0.05), ***(P< 0.01).

Table 3: Issue-Level Regressions: Probability of Home Currency Issuance: Financial and non-financial firms.

	Advanced Economies		Emerging Economies	
	FIN	non-FIN	FIN	non-FIN
	(1)	(2)	(3)	(4)
Trend	-0.0045	0.019*	0.017**	0.0051
	(0.0032)	(0.011)	(0.0070)	(0.0053)
Post Crisis	0.13***	-0.039	-0.061*	-0.026
	(0.038)	(0.12)	(0.037)	(0.051)
High inflation (a)	0.24*	0.54	0.0062	-0.042
	(0.14)	(0.74)	(0.10)	(0.093)
Debt / GDP (b)	0.00073	0.0018	-0.00091	-0.00058
	(0.0012)	(0.0028)	(0.0014)	(0.0025)
$(a) * (b)$	-0.0067***	-0.011	0.00004	-0.00019
	(0.0025)	(0.011)	(0.0015)	(0.0024)
Export Share	-0.39**	-0.18	0.044	-0.45
	(0.17)	(0.25)	(0.046)	(0.35)
Deal Amount	-0.16***	-0.50***	-0.13**	-0.082
	(0.037)	(0.16)	(0.056)	(0.15)
Seasoned Dom. Cur.	-0.14	0.10	-0.14	-0.24
	(0.018)	(0.087)	(0.097)	(0.17)
Seasoned For. Cur.	-0.036	-0.039	-0.014	0.022
	(0.027)	(0.034)	(0.018)	(0.025)
Observations	12474	1546	1505	1059
Adjusted R^2	0.31	0.42	0.31	0.48
Adjusted within R^2	0.044	0.082	0.021	0.045
Threshold debt$^{(c)}$	48	68	none	none

Unit of observation is an *individual* bond issue. Dependent variable is equal to 1 if issue is denominated in home currency, 0 otherwise. Linear probability model with firm fixed effects. $^{(a)}$Recent high inflation = 1 if inflation over 10 percent was observed in last 10 years, 0 otherwise. $^{(b)}$Debt is gross government debt. $^{(c)}$ is debt to GDP ratio (%) above which high inflation has negative and significant (at 5 percent) effect on home currency issuance. FIN = firm is listed as a financial sector firm, including financial divisions of corporates. Robust standard errors clustered on country-year. *(P< 0.10), **(P< 0.05), ***(P< 0.01).

A Appendix

Appendix A.1 Derivation of V_1

In period 1 firms make their second round of currency denomination decisions. By equations (1), (2), and (3), an unseasoned firm i will prefer to issue in its home currency in period 1 if,

$$\varepsilon_i \geq u + \omega_1 + \sigma(V_1), \tag{8}$$

while a seasoned firm j will prefer to issue in its home currency if,

$$\varepsilon_j \geq \omega_1 + \sigma(V_1). \tag{9}$$

Note that positive issuance in home currency by seasoned firms when $V_1 = 0$ requires $\bar{\varepsilon} \geq \omega_1 + \sigma(0)$.

Let θ_1^u represent the share of unseasoned firms that issue in home currency in period 1. By (8),

$$\theta_1^u = 1 - F[u + \omega_1 + \sigma(V_1)], \tag{10}$$

where $F(\bullet)$ is the cumulative density of realizations of ε that lie below $\bullet$. Similarly, let θ_1^s represent the share of seasoned firms that issue in home currency in period 1. By (9),

$$\theta_1^s = 1 - F[\omega_1 + \sigma(V_1)]. \tag{11}$$

Let S_1 represent the share of firms that enter period 1 seasoned in home currency issuance. Total period 1 issuance in home currency satisfies

$$V_1 = 2\,\bar{\varepsilon}(S_1\theta_1^s + (1 - S_1)\theta_1^u). \tag{12}$$

To solve the model analytically, we impose functional forms for the economies of scale function as well as a distribution for ε. For simplicity, we follow Hale and Spiegel (2012) and assume that the scale economy function satisfies $\sigma(V_t) = \alpha - \beta\, V_t$, where α and β are exogenous parameters, which satisfy the characteristics assumed above, and ε is distributed uniformly along the interval $[-\bar{\varepsilon}, \bar{\varepsilon}]$ with mean 0.

By (10) and (11), V_1 satisfies

$$V_1 = \frac{(\bar{\varepsilon} - \omega_1 - \alpha) - (1 - S_1)u}{1 - \beta}. \tag{13}$$

Appendix A.2 Derivation of V_0

Given the country shock ω_1, define ε^{u*} as the realization of ε that leaves unseasoned firms indifferent between issuing in home and foreign currency. By equations (8) and (4), ε^{u*} satisfies

$$\varepsilon^{u*}|\omega_1 = \frac{(\omega_1 + \alpha) - \beta\bar{\varepsilon} + (1 - \beta S_1)u}{1 - \beta}, \tag{14}$$

which is linear in ω_1. Unseasoned firms will issue in foreign currency if $\varepsilon < \varepsilon^{u*}$ and in their home currency if $\varepsilon > \varepsilon^{u*}$.

Similarly, define ε^{s*} as the realization of ε that leaves seasoned firms indifferent between issuing in home and foreign currency. By equations (9) and (4), ε^{s*} satisfies

$$\varepsilon^{s*}|\omega_1 = \frac{(\omega_1 + \alpha) - \beta\bar{\varepsilon} + \beta(1 - S_1)u}{1 - \beta}. \tag{15}$$

Seasoned firms will issue in foreign currency if $\varepsilon < \varepsilon^{s*}$ and in home currency if $\varepsilon > \varepsilon^{s*}$.

The period 0 expected cost of issuance for a firm that is unseasoned in period 1, $E(c_1^u)$, satisfies

$$E(c_1^u) = 1 + \int_{\underline{\omega}}^{\bar{\omega}} \left[\int_{-\bar{\varepsilon}}^{\varepsilon^{u*}|\omega_1} \varepsilon \mathrm{d}f(\varepsilon) + \frac{(\omega_1 + \alpha) - \beta\bar{\varepsilon} + (1 - \beta S_1)u}{1 - \beta} \int_{\varepsilon^{u*}|\omega_1}^{\bar{\varepsilon}} \mathrm{d}f(\varepsilon) \right] \mathrm{d}g(\omega), \tag{16}$$

while the expected cost of issuance for a seasoned firm, $E(c_1^s)$, satisfies

$$E(c_1^s) = 1 + \int_{\underline{\omega}}^{\bar{\omega}} \left[\int_{-\bar{\varepsilon}}^{\varepsilon^{s*}|\omega_1} \varepsilon \mathrm{d}f(\varepsilon) + \frac{(\omega_1 + \alpha) - \beta\bar{\varepsilon} + \beta(1 - S_1)u}{1 - \beta} \int_{\varepsilon^{s*}|\omega_1}^{\bar{\varepsilon}} \mathrm{d}f(\varepsilon) \right] \mathrm{d}g(\omega). \tag{17}$$

Recall that ε and ω_1 are distributed uniformly with means 0 and $\tau > 0$, respectively, and let $E(c_1^u)$ and $E(c_1^s)$ represent the period 0 expected costs of issuance for firms that are unseasoned and seasoned in period 1, respectively, and S_0 be the share of firms that enter period 0 seasoned in home currency issuance. $E(c_1^u - c_1^s)$, satisfies

$$E(c_1^u - c_1^s) = \frac{(1 - \beta u)[\bar{\varepsilon} - \tau - \alpha + \beta u S_0] - u(1 - u) + (1 - \beta u)(1 - S_0)\theta_0^u}{(1 - \beta)2\bar{\varepsilon}}. \tag{18}$$

Let $v_0^{u,h}$ represent the value in period 0 to an unseasoned firm that issues in the home currency. $v_0^{u,h}$ satisfies

$$v_0^{u,h} = 2Y - (1 + u + \omega_0 + \alpha - \beta V_0) - E(c_1^s). \tag{19}$$

Similarly, let $v_0^{s,h}$ represent the period 0 value of a seasoned firm with realization ε that issues in the home currency. $v_0^{s,h}$ satisfies

$$v_0^{s,h} = 2Y - (1 + \omega_0 + \alpha - \beta V_0) - E(c_1^s). \tag{20}$$

Let $v_0^{u,f}|\varepsilon_i$ represent the value to an unseasoned firm i that issues in the foreign currency and therefore remains unseasoned in home currency in period 1. $v_0^{u,f}|\varepsilon_i$ satisfies

$$v_0^{u,f}|\varepsilon_i = 2Y - (1 + \varepsilon_i) - E(c_1^u). \tag{21}$$

Finally, let $v_0^{s,f}|\varepsilon_j$ represent the value to a seasoned firm j that issues in the foreign currency. $v_0^{s,f}$ satisfies

$$v_0^{s,f}|\varepsilon_j = 2Y - (1 + \varepsilon_j) - E(c_1^s). \tag{22}$$

Define $\varepsilon^{u*}|\omega_0$ as the value of ε conditional on the realization of ω_0 that leaves an unseasoned firm indifferent between issuing in home and foreign currency. By (19) and (21), $\varepsilon^{u*}|\omega_0$ satisfies

$$\varepsilon^{u*}|\omega_0 = (u + \omega_0 + \alpha - \beta\, V_0) - E(c_1^u - c_1^s). \tag{23}$$

Similarly, define $\varepsilon^{s*}|\omega_0$ as the value of ε conditional on the realization of ω_0 that leaves a seasoned firm indifferent between issuing in home and foreign currency. By (20) and (22), $\varepsilon^{s*}|\omega_0$ satisfies

$$\varepsilon^{s*}|\omega_0 = (\omega_0 + \alpha - \beta\, V_0). \tag{24}$$

The share of unseasoned firms that issue in home currency in period 0, θ_0^u then satisfies

$$\theta_0^u = \frac{\bar{\varepsilon} - (u + \omega_0 + \alpha - \beta\, V_0) + E(c_1^u - c_1^s)}{2\bar{\varepsilon}}, \tag{25}$$

while the share of seasoned firms that issue in home currency in period 0, θ_0^s, satisfies

$$\theta_0^s = \frac{\bar{\varepsilon} - (\omega_0 + \alpha - \beta\, V_0)}{2\bar{\varepsilon}}. \tag{26}$$

Total period 0 issuance in home currency satisfies

$$V_0 = 2\,\bar{\varepsilon}(S_0\theta_0^s + (1 - S_0)\theta_0^u). \tag{27}$$

Equations (18), (25), (26), and (27) then give us a system of four equations with four unknowns: $E(c_1^u - c_1^s)$, θ_0^u, θ_0^s, and V_0. Solving for V_0 yields

$$\begin{aligned} V_0 = \frac{1}{(1-\beta)[(1-\beta S_0)2\bar{\varepsilon} - (1-S_0)\beta]}\, &[S_0[\bar{\varepsilon} - (\omega_0 + \alpha)](1-\beta)2\bar{\varepsilon} \\ &+(1-S_0)\{(1-\beta)[\bar{\varepsilon} - (u + \omega_0 + \alpha)] + (1 - \beta u)(\bar{\varepsilon} - \tau - \alpha + \beta u S_0) - u(1-u)\}] \end{aligned} \tag{28}$$

where the denominator must be positive for stability.

Appendix A.3 Proof that Proposition 1 holds with $u = 0$

By 30, when $V_0|u = 0$ satisfies

$$V_0|u = 0 \quad = \tfrac{1}{(1-\beta)[(1-\beta S_0)2\bar{\varepsilon} - (1-S_0)\beta]}\, [S_0[\bar{\varepsilon} - (\omega_0 + \alpha)](1-\beta)2\bar{\varepsilon} \tag{29}$$

$$+(1-S_0)\{(1-\beta)[\bar{\varepsilon} - \omega_0 - \alpha)] + (\bar{\varepsilon} - \tau - \alpha)\}] \tag{30}$$

Differentiating $V_0|u = 0$ with respect to ω_0 yields

$$\frac{\partial V_0}{\partial \omega_0} = -\frac{S_0 2\bar{\varepsilon} + (1 - S_0)}{(1 - \beta S_0)2\bar{\varepsilon} - (1 - S_0)\beta} < 0. \tag{31}$$

Table A.1: Countries in the sample by country group.

Advanced	Emerging		
Australia	Argentina	Kazakhstan	Turkey
Canada	Brazil	Malaysia	Thailand[a]
Denmark	Chile	Mexico	Ukraine
Iceland[a]	China	Peru[a]	
Korea	Colombia[a]	Philippines	
New Zealand	Czech Republic[a]	Poland[a]	
Norway	Hungary	Romania[a]	
Sweden	India	Russian Federation	
Taiwan[a]	Indonesia	South Africa	

[a]Omitted from cross section regression, due to insufficient sample size.

Table A.2: Top 50 issuers by country group.

Advanced Economies			Emerging Economies		
Firm	Country	Amount	Firm	Country	Amount
NATIONAL AUSTRALIA BANK	Australia	66.03	PEMEX	Mexico	8.16
WESTPAC BANKING CORP	Australia	58.17	PETROBRAS - PIFCO	Brazil	5.41
COMMONWEALTH BANK OF AUS	Australia	56.47	GAZPROMBANK	Russia	4.26
ANZ BANKING GROUP LTD	Australia	52.56	VNESHTORGBANK	Russia	3.89
DANSKE BANK	Denmark	49.27	BANCO BRADESCO	Brazil	3.80
SVENSKA HANDELSBANKEN	Sweden	46.14	OTP MORTGAGE BANK	Hungary	3.71
ROYAL BANK OF CANADA	Canada	40.06	AMERICA MOVIL SAB	Mexico	3.67
BANK OF NOVA SCOTIA	Canada	36.49	VALE OVERSEAS	Brazil	3.16
NORDEA BANK	Sweden	32.36	ITAU UNIBANCO	Brazil	2.58
DNB NOR BANK	Norway	30.39	SEVERSTAL OAO	Russia	2.22
SKANDINAVISKA ENSKILDA B.	Sweden	27.86	RUSSIAN STANDARD BANK	Russia	2.22
CIBC	Canada	25.99	TURANALEM FINANCE	Kazakhstan	2.15
SWEDBANK MORTGAGE	Sweden	25.07	OTP BANK	Hungary	2.04
SBAB	Sweden	23.92	BANCO VOTORANTIM	Brazil	2.00
SPINTAB	Sweden	23.84	ALFA BANK	Russia	1.94
SWEDBANK	Sweden	21.94	BANCO SANTANDER CHILE	Chile	1.92
DNB NOR BOLIGKREDITT	Norway	20.49	ICICI BANK	India	1.91
STADSHYPOTEK	Sweden	15.17	CEMEX	Mexico	1.82
MACQUARIE BANK	Australia	13.53	MALAYAN BANKING BHD	Malaysia	1.81
TORONTO-DOMINION BANK	Canada	13.15	VTB CAPITAL	Russia	1.74
VOLVO TREASURY	Sweden	12.85	TELEMAR NORTE LESTE	Brazil	1.72
BANK OF MONTREAL	Canada	12.32	CEMEX FINANCE	Mexico	1.71
SPAREBANK 1 BOLIGKREDITT	Norway	11.67	BANCOLOMBIA	Colombia	1.68
FIH ERHVERVSBANK	Denmark	10.97	COUNTRY GARDEN HOLD.	China	1.65
KAUPTHING BANK	Iceland	9.95	AMERICA MOVIL	Mexico	1.60
ANZ NATIONAL INTERNATIONAL	New Zealand	8.78	ISBANK	Turkey	1.58
SWEDISH COVERED BOND CORP	Sweden	8.72	FIBRIA OVERSEAS FINANCE	Brazil	1.57
ST GEORGE BANK	Australia	8.71	BRASKEM FINANCE	Brazil	1.55
TELSTRA CORP	Australia	7.85	BANCO HIPOTECARIO	Argentina	1.54
C. CENT. DESJARDINS DU QUEBEC	Canada	7.63	VALE	Brazil	1.54
SUNCORP-METWAY	Australia	7.63	BANK OF MOSCOW	Russia	1.50
DEN NORSKE BANK	Norway	7.02	PACIFIC RUBIALES ENERGY	Colombia	1.46
NATIONAL BANK OF CANADA	Canada	6.85	EVRAZ GROUP	Russia	1.45
LANDSBANKI ISLANDS	Iceland	6.80	YAPI VE KREDI BANKASI	Turkey	1.45
DNB BOLIGKREDITT	Norway	6.69	ODEBRECHT FINANCE	Brazil	1.40
SWEDBANK (FORENINGSSPARB.)	Sweden	6.66	PETRONAS CAPITAL	Malaysia	1.40
TELIASONERA	Sweden	6.45	KAZMUNAIGAZ FINANCE SUB	Kazakhstan	1.39
VATTENFALL TREASURY	Sweden	6.31	BBVA BANCOMER	Mexico	1.37
TOYOTA FINANCE AUSTRALIA	Australia	6.16	BANCO BRADESCO	Brazil	1.36
NORDEA HYPOTEK	Sweden	6.08	HCFB	Russia	1.35
SPINTAB SWEDMORTGAGE	Sweden	5.90	1MDB GLOBAL INVESTMENTS	Malaysia	1.29
TERRA BOLIGKREDITT	Norway	5.71	PKO BANK POLSKI	Poland	1.28
UNION BANK OF NORWAY	Norway	5.58	EVERGRANDE REAL ESTATE	China	1.26
GE CAPITAL AUSTRALIA FUNDING	Australia	5.10	GAZ CAPITAL	Russia	1.24
BOS INTERNATIONAL (AUSTRALIA)	Australia	4.85	BANCO BMG	Brazil	1.24
NYKREDIT BANK	Denmark	4.52	AGILE PROPERTY HOLDINGS	China	1.24
WOORI BANK	South Korea	4.41	SHUI ON DEVELOPMENT	China	1.23
ISLANDSBANKI HF - GLITNIR	Iceland	4.30	GRUPO TELEVISA	Mexico	1.21
JYSKE BANK	Denmark	4.26	ALROSA FINANCE	Russia	1.18
CIBC BANK	Canada	4.20	ALB FINANCE	Kazakhstan	1.18
OTHERS		380.33	OTHERS		242.79
TOTAL		1274.17	TOTAL		345.83

Amounts are in billion constant 1982-84 U.S. dollars.

Table A.3: Issues and amount by year and country group.

Year	Number of Issues				Amount			
	Emerging		Advanced		Emerging		Advanced	
	Financial	Non-Financial	Financial	Non-Financial	Financial	Non-Financial	Financial	Non-Financial
1995	3	10	132	79	0.8	0.7	8.9	7.4
1996	23	36	302	62	2.0	3.4	21.8	7.6
1997	32	49	334	69	2.8	5.4	26.3	7.6
1998	23	33	259	76	2.3	3.9	23.7	8.7
1999	12	27	301	91	1.0	2.9	30.8	10.8
2000	51	26	392	61	3.7	2.6	28.6	6.4
2001	69	15	537	99	5.5	1.7	31.3	14.7
2002	45	21	594	82	3.5	2.0	31.9	11.9
2003	83	41	725	75	10.9	4.0	45.6	10.4
2004	91	45	941	74	13.0	5.8	57.6	9.0
2005	112	57	832	76	14.6	6.8	65.3	7.5
2006	152	84	919	82	14.8	8.5	88.4	7.7
2007	127	80	1096	95	17.5	10.1	84.1	11.1
2008	51	31	977	67	6.6	2.5	104.1	6.9
2009	62	44	956	54	13.2	8.5	100.5	9.9
2010	119	97	989	70	19.9	18.1	96.1	13.2
2011	95	105	649	99	15.5	14.7	70.9	13.2
2012	164	99	843	141	26.7	18.0	86.9	21.2
2013	191	159	696	94	24.1	27.8	74.5	11.6
Total	1505	1059	12474	1546	198.4	147.4	1077.4	196.8

[a] Base 1982-1984.

Table A.4: Summary statistics by country group.

	N	Mean	Std. Dev.	Min.	Max
Advanced (9 Countries)					
Home currency issue	14020	0.11	0.32	0	1
Deal amount (Bil. real USD)[a]	14020	0.09	0.16	0.00	2.32
Seasoned home cur. issuer	14020	0.68	0.47	0	1
Seasoned for. cur. issuer	14020	0.93	0.25	0	1
Gross govt. debt/GDP	14020	36.81	24.46	8.6	101.7
Inflation >10% last 10 years	14020	0.03	0.18	0	1
Emerging (21 Countries)					
Home currency issue	2564	0.06	0.24	0	1
Deal amount (Bil. real USD)[a]	2564	0.13	0.13	0.00	1.40
Seasoned home cur. issuer	2564	0.07	0.25	0	1
Seasoned for. cur. issuer	2564	0.58	0.49	0	1
Gross govt. debt/GDP	2564	40.41	22.60	3.8	139.4
Inflation >10% last 10 years	2564	0.75	0.43	0	1

[a]Base 1982-1984.

Table A.5: Issue-Level Regressions: Probability of Home Currency Issuance: Advanced economies all sectors. Robustness tests.

	CLogit (1)	No Sweden (2)	No Iceland (3)	Inc. Sov. (4)	Only Sov. (5)	No Foreign (6)	Spread 10yr (7)	Spread 5yr (8)	Spread 1yr (9)	Firm-level (10)	Inf. Target (11)	Inf. Vol. (12)
Trend	-0.041	-0.001	-0.003	-0.003	-0.002	-0.003	-0.004	-0.003	-0.003	0.014***	-0.0008	-0.001
	(0.088)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Post Crisis	1.66***	0.05***	0.12***	0.12***	0.05	0.12***	0.12***	0.12***	0.12***	0.08**	0.12***	0.13***
	(0.63)	(0.02)	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)
High inflation (a)	6.86**	0.90**	0.25	0.15	0.06	0.18	0.25*	0.25*	0.25*	0.62***		
	(3.28)	(0.36)	(0.17)	(0.14)	(0.10)	(0.13)	(0.14)	(0.14)	(0.14)	(0.18)		
Debt / GDP (b)	0.03	0.004***	0.0007	0.0006	-0.0001	0.0005	0.0005	0.0007	0.0007	0.0006	-0.001	0.002
	(0.07)	(0.0006)	(0.0012)	(0.0011)	(0.0005)	(0.0012)	(0.0011)	(0.0011)	(0.0011)	(0.0012)	(0.0014)	(0.0015)
(a) * (b)	-0.16***	-0.021**	-0.007**	-0.005**	-0.0012	-0.006**	-0.007***	-0.007***	-0.007***	-0.013***		
	(0.06)	(0.008)	(0.003)	(0.0023)	(0.0017)	(0.0024)	(0.0025)	(0.0025)	(0.0025)	(0.003)		
Export Share	-2.82	-0.35**	-0.34**	-0.34**		-0.32	-0.34**	-0.33**	-0.34**	-0.09	-0.32**	-0.35**
	(9.92)	(0.17)	(0.16)	(0.16)		(0.29)	(0.16)	(0.16)	(0.16)	(0.34)	(0.16)	(0.16)
Deal Amount	-3.56***	-0.06***	-0.17***	-0.16***	-0.007	-0.17***	-0.17***	-0.17***	-0.17***	-0.18***	-0.17***	-0.17***
	(0.95)	(0.02)	(0.04)	(0.04)	(0.008)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Seasoned Dom. Cur.	0.23	-0.04***	-0.01	-0.006	-0.04	-0.002	-0.006	-0.006	-0.007	-0.009	-0.001	-0.013
	(0.86)	(0.01)	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Seasoned For. Cur.	-0.33	-0.003	-0.015	-0.02		0.007	-0.02	-0.02	-0.02	-0.09**	-0.02	-0.02
	(2.29)	(0.02)	(0.02)	(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)
Swap spread							0.0006***	0.0003*	0.00006			
							(0.0002)	(0.0002)	(0.0002)			
Leverage										0.18		
										(0.15)		
Log total assets										-0.09***		
										(0.03)		
Alt. inflation (c)											-0.076	0.20**
											(0.06)	(0.09)
(c) * (b)											0.003*	-0.005**
											(0.002)	(0.002)
Observations	11200	11265	13650	14333	313	12255	14020	14020	14020	6803	14020	14020
Adjusted R^2		0.33	0.32	0.32	0.01	0.27	0.32	0.32	0.32	0.25	0.32	0.32
Adjusted within R^2		0.027	0.044	0.042	0.012	0.051	0.045	0.044	0.044	0.045	0.037	0.039
Threshold debt$^{(d)}$	51	53	51	49	none	47	49	49	49	54	none	95

Unit of observation is an *individual* bond issue. Dependent variable is equal to 1 if issue is denominated in home currency, 0 otherwise.
Linear probability model with firm fixed effects.
$^{(a)}$Recent high inflation = 1 if inflation over 10 percent was observed in last 10 years, 0 otherwise.
$^{(b)}$Debt is gross government debt. $^{(c)}$ Alternative inflation measure as indicated in column heading: an indicator of not inflation targeter and coefficient of variation of monthly CPI.
$^{(d)}$ is debt to GDP ratio (%) above which high inflation has negative and significant (at 5 percent) effect on home currency issuance.
Robust standard errors clustered on country-year. *(P< 0.10), **(P< 0.05), ***(P< 0.01).

Table A.6: Issue-Level Regressions: Probability of Home Currency Issuance: Advanced economies financial firms. Robustness tests.

	CLogit (1)	No Sweden (2)	No Iceland (3)	Inc. Sov. (4)	Only Sov. (5)	No Foreign (6)	Spread 10yr (7)	Spread 5yr (8)	Spread 1yr (9)	Firm-level (10)	Inf. Target (11)	Inf. Vol. (12)
Trend	-0.07	-0.003	-0.005	-0.003	-0.002	-0.005	-0.005*	-0.005	-0.005	0.018***	-0.002	-0.002
	(0.106)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Post Crisis	1.92***	0.05***	0.13***	0.12***	0.05	0.13***	0.13***	0.13***	0.13***	0.09**	0.13***	0.14***
	(0.72)	(0.02)	(0.04)	(0.03)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
High inflation (a)	6.12**	1.08***	0.23	0.15	0.07	0.19	0.23*	0.24*	0.24*	0.49**		
	(2.99)	(0.36)	(0.16)	(0.14)	(0.10)	(0.13)	(0.14)	(0.14)	(0.14)	(0.21)		
Debt / GDP (b)	0.032	0.004***	0.0007	0.0006	-0.00012	0.0004	0.0005	0.0007	0.0007	0.0003	-0.001	0.002
	(0.08)	(0.0006)	(0.0012)	(0.0011)	(0.0005)	(0.0012)	(0.0011)	(0.0012)	(0.0012)	(0.0013)	(0.0015)	(0.0016)
(a) * (b)	-0.15***	-0.026***	-0.007**	-0.005**	-0.0012	-0.006**	-0.007***	-0.007***	-0.007***	-0.01**		
	(0.055)	(0.008)	(0.003)	(0.0023)	(0.0017)	(0.0024)	(0.0025)	(0.0025)	(0.0025)	(0.004)		
Export Share	-4.37	-0.40**	-0.39**	-0.34**		-0.64	-0.39**	-0.39**	-0.39**	-0.37	-0.36**	-0.39**
	(23.27)	(0.18)	(0.17)	(0.16)		(0.47)	(0.18)	(0.17)	(0.17)	(0.45)	(0.17)	(0.17)
Deal Amount	-3.18***	-0.06***	-0.16***	-0.16***	-0.007	-0.16***	-0.16***	-0.16***	-0.16***	-0.17***	-0.16***	-0.16***
	(0.80)	(0.02)	(0.04)	(0.04)	(0.007)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Seasoned Dom. Cur.	0.15	-0.04***	-0.02	-0.006	-0.04	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.02
	(1.06)	(0.01)	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	0.02
Seasoned For. Cur.	-0.41	-0.04	-0.03	-0.02		0.009	-0.04	-0.04	-0.04	-0.07	-0.04	-0.04
	(3.17)	(0.030)	(0.028)	(0.018)		(0.022)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Swap spread							0.0006***	0.0003	-0.00001			
							(0.0002)	(0.0002)	(0.0002)			
Leverage										0.48***		
										(0.10)		
Log total assets										-0.13***		
										(0.04)		
Alt. inflation (c)											-0.092	0.22**
											(0.064)	(0.09)
(c) * (b)											0.003	-0.005**
											(0.002)	(0.002)
Observations	10823	10011	12104	14333	313	10948	12474	12474	12474	6380	12474	12474
Adjusted R^2		0.31	0.31	0.32	0.008	0.24	0.31	0.31	0.31	0.21	0.30	0.31
Adjusted within R^2		0.029	0.044	0.042	0.012	0.051	0.045	0.044	0.044	0.050	0.037	0.039
Threshold debt$^{(d)}$	50	47	50	49	none	47	48	48	48	59	none	100

Unit of observation is an *individual* bond issue. Dependent variable is equal to 1 if issue is denominated in home currency, 0 otherwise.
Linear probability model with firm fixed effects.
$^{(a)}$Recent high inflation = 1 if inflation over 10 percent was observed in last 10 years, 0 otherwise.
$^{(b)}$Debt is gross government debt. $^{(c)}$ Alternative inflation measure as indicated in column heading: an indicator of not inflation targeter and coefficient of variation of monthly CPI.
$^{(d)}$ is debt to GDP ratio (%) above which high inflation has negative and significant (at 5 percent) effect on home currency issuance.
Robust standard errors clustered on country-year. *(P< 0.10), **(P< 0.05), ***(P< 0.01).