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Abstract

This paper shows that, controlling for standard determinants of net external positions, financially-remote countries exhibit more positive net external positions. This finding is found to be stronger for less advanced countries, hinting at external funding problems for more remote countries. Being located near financially very open countries, being in currency unions with creditor countries, or being highly integrated through financial and trade linkages with a 'core' country facilitates net external borrowing. Consequently, evidence is found for an important role of geographic and bilateral factors for a country's net external wealth.

Keywords: net foreign assets, cross-border investment, distance, proximity
JEL Classification: F21, F34, F41

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1 Introduction

This paper integrates two major research areas - the analysis of external imbalances and studies of the geographical determinants of cross-border investment. We investigate if a country's geographical location affects its ability to raise net external funding.

The net external position of a country is an important steady-state variable which is crucial in order to understand short-term capital flows. As shown by Lane and Milesi-Ferretti (2001a 2001b, and 2002), long-term fundamentals such as GDP per capita, the demographic structure, the level of public debt, and country size are important determinants in explaining the level of a country's net external position. These fundamentals help explain why countries are persistent net creditors or net debtors. Theoretically, net external positions ensure that capital is allocated to the most productive nations. Moreover, intertemporal consumption smoothing works through this channel internationally.

The role of geographical and bilateral factors for a country's net external position is largely unexplored. In the literature on bilateral asset trade, it is well established that geography matters. For example, Lane and Milesi-Ferretti (2008) and Portes and Rey (2005) show that bilateral distance and other proxies for informational asymmetries such as common language, colonial ties, and currency unions are crucial in explaining bilateral asset holdings and flows, respectively. Daude and Stein (2007) find that the difference in time zones is also important for bilateral (foreign direct) investments. Thus, asset trade can be explained by gravity models that are very similar to models of bilateral trade, implying a home bias or rather a proximity bias.

There is evidence for a proximity bias in the financial sector due to differences in access to financial services and information asymmetries that are increasing in distance. Coval and Moskowitz (1999, 2001) show that returns of fund managers in the United States are higher from investing in firms in close proximity. Also financial analysts tend to be more accurate in their assessments the closer they are located to a firm (Malloy, 2005). Petersen and Rajan (2002) find that borrower quality increases with distance, as banks are unwilling to lend at great distances to problem borrowers whose loans would require more active monitoring.

We build on the literature above by investigating how geographic and bilateral factors influence the net external position of a country. The determinants of bilateral holdings can affect gross aggregate positions: as we expect a financially-remote country to be less integrated with the rest of the world, it might receive less inward capital flows which could translate into problems in generating net external funding.

Based on the idea of increasing financial intermediation costs with distance, Rose and Spiegel (2009) introduce a unilateral concept of distance, namely international financial remoteness. They find that countries that are remote from financial activity (defined by the closest distance to one of the world's major financial centres - London, New York, and Tokyo) are systemically more volatile in terms of output and consumption growth. We use a similar concept in order to

obtain remoteness measures for each country, namely the minimum distance and minimum time zone difference to one of the eight largest creditor countries that are consequently the major providers of external funding. We include these financial remoteness measures in standard net external position estimations.

Going beyond measures of distance there are more bilateral concepts potentially affecting net external positions. As we carry out our analysis in a unilateral framework, we apply Baicker's (2005) notion of neighbourliness which she uses to examine spillovers of fiscal policy among US states. We apply her idea of geographic contiguity and use further concepts from the bilateral asset trade literature in a unilateral framework. Starting from bilateral datasets, we construct composite measures of - for instance - financial openness of neighbour countries and test their relevance for the net external position.

Countries might also be able to participate in world financial or goods markets by being integrated with a 'core' country. This notion, dating back to Baumol (1986), postulates that specific convergence clubs of a core (leader) and a periphery (converging countries) exhibit spillovers from the core to the periphery via extensive trade and financial linkages. We apply the concepts of bilateral financial and trade linkages by identifying a core country and the level of integration with this core country for each economy in our sample and investigate if integration with the core has an impact on net external funding.

The theoretical framework of this paper is shaped by the models of Obstfeld and Rogoff (2001) and Martin and Rey (2004). In both models, (asset) trade costs induce home bias in financial holdings. Trade costs in the models represent transaction and information costs in a broader sense. Fazio, MacDonald, and Melitz (2008) find strong empirical support for Obstfeld's and Rogoff's hypothesis that trade costs are the key to explaining the Feldstein-Horioka puzzle. They find this to be consistent with persistent net external positions and trade balances as observed by Lane and Milesi-Ferretti (2002).

There are no strong theoretical or empirical priors about the role of financial remoteness and other bilateral factors for net external positions. From the findings by Lane and Milesi-Ferretti (2008), Portes and Rey (2005), and Daude and Stein (2007) we know that geographic factors are important for bilateral asset trade. Consequently, it is of high interest to analyse the impact of these factors for a country's net external wealth.

The remainder of the paper is organised as follows: in Section 2 theoretical issues are raised, followed by the empirical strategy in Section 3. The empirical results are presented in Section 4, and Section 5 concludes.

2 Theoretical Issues

Obstfeld and Rogoff (2001) show that trade costs can have large effects on macroeconomic phenomena. Obviously, bilateral factors such as geographical barriers imply higher trade and

transaction costs. In their model, Obstfeld and Rogoff demonstrate that higher trade costs in goods can explain home bias in equity holdings (representing overall asset holdings).

Martin and Rey (2004) focus on incomplete asset markets and transaction (iceberg) costs in financial markets. In their framework, assets are endogenously created leading to larger countries having larger asset markets, while a reduction in financial trade costs leads to more international asset trade. Frictions in asset trade through asymmetric information costs between home and foreign agents induce home bias in equity holdings. The gravity models of Milesi-Ferretti (2008) and Portes and Rey (2005) support these theories by finding a significant role for standard geographic determinants as well as informational distance proxies.

If we drop the assumption of symmetric transaction costs across all countries, we can speculate about the impact of geographic and bilateral factors on the net external position. As each country exhibits a unique geographic position in the world, financial trade costs vis-a-vis the rest of the world (as for instance proxied by the degree of financial remoteness) are of an idiosyncratic nature. This may entail distinctive foreign asset and liability positions for each country and the emergence of external imbalances.

Based on the theoretical and empirical asset trade literature, a financially-remote country is less likely to be involved substantially in international financial trade. However, for a small open economy, an asymmetry in the way financial remoteness affects foreign assets and liabilities is probable: on the capital outflow side, geographic barriers are more likely to be overcome by a 'remote' country actively seeking to pursue an internationally-oriented investment strategy (for example in the form of a national pension fund). On the inflow side, however, remoteness can translate into problems in generating net external funding. For a small open remote economy, it might be very problematic to come into the focus of international investors as well as to receive substantial investments given increasing information costs and informational asymmetries with distance.

Put differently, financial remoteness functions as an asymmetric tax that is levied on the return on foreign liabilities, but not on the return on foreign assets. Consequently, the foreign asset accumulation is not (or only to a lesser extent) distorted by financial remoteness, whereas foreign liabilities are subject to a 'remoteness' tax.

For a small open economy this asymmetry results in a more positive net external position (hence a lower, less negative, net foreign liability position). For remote countries that seek net external funding based on their macroeconomic fundamentals, a disadvantageous geographic location can thus be an impediment to achieving the desired net external position.

We test this formally by including variables from the bilateral concepts of financial remoteness, neighbourliness, and convergence clubs in the net external position estimations framework.

3 Empirical Strategy

3.1 Specification

The empirical framework focuses on a static long-run relation using a cross-sectional approach. We include the net external position (as a ratio to GDP) as an average over the period of 2005-2007. The control variables are measured in 2005 values. As there is not much time-series variation in many of our bilateral variables, a cross-sectional approach seems more appropriate than a panel estimation. Various bilateral concepts are introduced in the estimation. We estimate the regression specifications by least squares using heteroskedasticity robust standard errors:

$$NFA_i = \alpha + \beta Bilateral_i + \gamma \mathbf{X}_i + e_i \tag{1}$$

where $Bilateral_i$ represents various bilateral concepts. Specifically, we include international financial remoteness, various measures of neighbourliness as well as financial and trade integration indicators based on the convergence clubs concept (see Section 3.3 for details). $\mathbf{X}_i$ is a set of control variables building on Lane and Milesi-Ferretti (2001a 2001b, and 2002) and comprises the natural logarithm of GDP per capita (in PPP terms using constant international dollars), the demographic structure, the level of public debt, and the natural logarithm of population size (see Section 3.2 for details).

We benefit from the updated and extended version of the dataset on external positions constructed by Lane and Milesi-Ferretti (2007). This dataset covers 178 economies. After matching it with the explanatory variables (see Appendix A1 for details on the country sample and data sources), we are left with a cross-section of 153 countries that we reduce to 149 countries by excluding countries that have a net external position that is larger than 200% of GDP (Kuwait, Lybia, Hong Kong) or smaller than -200% of GDP (Guinea-Bissau).

We use both the full sample of 149 countries, as well as a narrow sample of 119 countries that excludes the 30 most advanced countries (in terms of GDP per capita) as we expect differences in the way the bilateral concepts affect net external funding based on the stage of development of an economy.[1] Conceptually, less advanced countries might be more reliant on external funding in order to facilitate investments that lead to higher economic growth and convergence with the group of advanced countries. For the group of advanced countries, we expect this relation to be less pronounced. First, these countries are more likely to be well-integrated into the world economy, hence raising external capital should be less difficult even for remote advanced countries.[2] Second, given that these countries have reached a high level of economic development,

[1] This corresponds to excluding countries from the reduced sample that are above the 80th percentile in terms of GDP per capita. All of these belong to the group of high-income countries as defined by the World Bank's World Development Indicators. See Appendix A1 for a list of these countries.

[2] Australia and New Zealand are both very remote countries while also being substantial net debtors with net external positions of -61% and -89%, respectively, over the period of 2005-2007. This circumstance supports the

they are likely to have more savings and less investments, leading to less demand for net external funding. In the narrow sample, 100 out of 119 (84%) countries are net debtors, whereas only 19 out of 30 (63%) advanced countries are net debtors. Considering a net liability position of 0.25% of GDP as a cut-off point, we find 66% of the less developed sample to be even more indebted, whereas only 20% of the advanced countries exhibit a higher net liability position. Third, in the less advanced sample, the major international creditor countries and financial centres (see Section 3.3.1) are excluded. This avoids a potential blurring of these estimations, as for example for the United States the impact of financial remoteness might be different compared to other countries as it is one of the eight major gross creditor countries and New York is one of the world's three major financial centres.

Less advanced countries are expected to be 'natural' net debtor countries that are in need of *downhill* international capital flows. Given the theoretical considerations presented in Section 2, international financial remoteness might be a severe impediment to receiving the desired level of net external funding for this group of countries.

3.2 Control Variables

We build our empirical specifications on previous work by Lane and Milesi-Ferretti (2001a, 2001b, and 2002).

Lane and Milesi-Ferretti find a positive relation between net foreign assets and GDP per capita in cross-sectional estimations. Various channels can explain this result: if an economy grows richer, the marginal product of capital (and hence domestic investment) decreases. A rise in income can also be associated with more domestic savings. Both factors can lead to more investments abroad.

Furthermore, Lane and Milesi-Ferretti (2002) show that demography is a very important determinant of net external positions. We employ the entire age distribution in our empirical work as proposed by Fair and Dominguez (1991) and Higgins (1998). This is crucial, as for instance, a relatively young workforce may be associated with relatively low savings and high investments whereas an older workforce may be associated with a rise in the net foreign asset position, as saving for retirement becomes more urgent and domestic investment falls. Countries with a high age-dependency ratio might start accumulating overseas assets to generate international investment income. A high youth dependency ratio may be associated with a high investment rate (to finance social infrastructure investments). Consequently, we follow Lane and Milesi-Ferretti (2002) and use the entire age distribution of a country in order to account for the different demographic channels. We restrict the coefficients on the population share variables to lie along a cubic polynomial, so that only three composite demographic variables are entered into the regression specification (see Appendix A2 for details).

hypothesis of rich countries being less affected by financial remoteness. As a robustness check we also include Australia and New Zealand in the less advanced sample (based on their large net foreign liability positions), but find the results of the empirical analysis to hold nonetheless.

We also consider the level of public debt. Lane and Milesi-Ferretti (2002) find a significant negative coefficient on the level of public debt for developing countries. This non-Ricardian behaviour implies that higher levels of public debt are not fully offset by an increase in private asset accumulation.[3] Hence, more public debt might be associated with a decline in the net external position.

In addition, we control for country size by including the natural logarithm of population, as a large country may be more diversified and hence faces less external risk than a smaller country. Also larger countries might be more likely to set up a stock market or attract the interest of international investors.

As additional variables, we use *de-facto* (Lane and Milesi-Ferretti, 2007) and *de-jure* (Chinn and Ito, 2008) international financial integration. These variables might be associated with easier access to external funding, thus lower net external positions.[4]

3.3 Bilateral Concepts

3.3.1 International Financial Remoteness

The concept of international financial remoteness was introduced by Rose and Spiegel (2009). They use the natural logarithm of the distance to the closest financial centre (London, New York, and Tokyo) as their prime measure of remoteness.

First, we use as a remoteness measure the minimum distance to the eight largest gross creditor countries (in terms of US dollars), hence the eight countries that exhibit the largest foreign asset positions in Lane and Milesi-Ferretti (2007).[5] As a robustness check we use the distance to the eight largest gross capital exporters using financial flows data from the IMF's International Financial Statistics and find very similar results. Here we use the total of gross capital outflows, that is the sum of portfolio investments, foreign direct investments, and 'other' and reserve asset flows.[6]

Second, we also consider 'time distance' as measured by the minimum difference in time zones to one of the eight largest creditor countries. Daude and Stein (2007) show that time zone difference is a significant negative factor in FDI and goods trade. The rationale for using these two remoteness measures (both as distance and time zone difference) is to find a proxy for aggregate 'access' to foreign funds and to account for informational asymmetries that are positively related to remoteness.

[3]Non-Ricardian behaviour means that the government's budget constraint is not internalised by private economic agents.

[4]In addition, we included the share of natural resources in total exports as a high share of natural resources can be associated with accumulated export revenue. On the other hand, it could also attract FDI inflows. However, this variable is neither significant in any of the estimations nor does it affect the coefficients of the other variables. As it decreases the sample size substantially, we dropped it from the estimations.

[5]These are the United States, United Kingdom, France, Germany, Japan, Netherlands, Switzerland, and Ireland.

[6]In fact, very similar measures are used as robustness checks by Rose and Spiegel.

As an additional robustness check, we weight the distances to the eight largest creditor countries by the inverse of the share of the investments actually received from these countries. Using data from the IMF's Coordinated Portfolio Investment Survey (CPIS) on total portfolio investment positions, we construct the share of investments made by the eight largest creditor countries. Thus instead of using an unweighted distance measure, we employ:

$$IFR_i = \min[ln(distance * (\frac{TA_{ji}}{\sum_{k=1}^{n-1} TA_{ki}})^{-1})] \tag{2}$$

where TA_{ji} are the portfolio investments 'Top-8' creditor country j invests in host country i, and $\sum_{k=1}^{n-1} TA_{ki}$ are the total portfolio investments held by foreign investors in country i. We weight by the inverse of the share as the distance to a country which invests a large amount in host country i should receive a lower value than the distance to a country that invests only little in the host country. To illustrate, if the distance from country A to both country B and country C amounts to 1,000 km, but 50% of the foreign portfolio liabilities of country A are held by country B and only 10% by country C, the weighted distance to country B amounts to 2,000 km, whereas the distance to country C is 10,000 km. The rationale behind this weighting is to adjust the concept of international financial remoteness for actual investments such that actual remoteness is relatively smaller or larger than indicated by the unweighted distance term.

Given the theoretical considerations of Section 2, we expect a positive coefficient on the remoteness variables in specification (1) as the ease of net external funding should be decreasing with distance to the largest creditor countries.

In order to illustrate the concept of international financial remoteness we present the fifteen most and least remote countries in Table 1: based on the minimum distance to the eight largest gross creditor countries, we find New Zealand to be the most remote country, followed by Mauritius and Japan. The least remote countries are all European-based with Belgium and the Czech Republic being the closest countries to one of the eight largest gross creditor countries. The histogram in Figure 1, shows the distribution of this remoteness measure for our sample. About two thirds of the sample exhibit a minimum log distance of eight or higher (which is equivalent to 3,000 km) to one of the eight largest gross creditors. 20 countries even have a remoteness measure of 8.8 or larger in log terms (6,600km).

When we apply the concept of minimum difference in time zones to one of the eight largest creditor countries, we find a large number of countries (55) to exhibit no time zone difference to one of the major creditor countries. The most remote country based on this measure is Japan, followed by Samoa and the United States.

Weighting the first measure by the inverse of the share of the investments actually received (as described above), reveals a slightly altered picture: Canada is the second least remote country (after Belgium), whereas the most remote countries are Madagascar, Bahrain, and Cambodia.

Using the measure of financial remoteness preferred by Rose and Spiegel (2009), namely the minimum distance to one of the three major financial centres, reveals Belgium and the Netherlands as being least remote, while Mauritius, Japan, and South Africa are the most remote countries.

In Table 2, we use Spearman's rank correlations in order to investigate the relation between the different measures of financial remoteness. Crucially, we find a very high correlation coefficient of 0.96 between the concepts based on the distance to the largest creditor countries and the distance to the major financial centres. The coefficient between the distance and time difference measures amounts to 0.46, reflecting a less pronounced relation between the two measures. The rank correlation between the unweighted and weighted minimum distance to one of the eight largest creditor countries is 0.70.

3.3.2 Neighbourliness

We know from the bilateral asset trade literature, that there are further bilateral concepts besides distance that are used as proxies for informational asymmetries. We employ a contiguous dummy, a 'nearby' dummy if the distance between the capitals of two countries is less than 1,000 km, and a currency union dummy.[7]

Conceptually, we cannot use straightforward binary dummies like in the bilateral literature, as we carry out the analysis in a unilateral cross-sectional framework. Thus, we start off with a complete bilateral dataset for our country sample and use these concepts in order to construct weighting matrices along the lines of Baicker (2005). Building on Case et al. (1993) she uses weights that apply different concepts of 'neighbourliness' in order to analyse public spending spillovers among US states.

For instance, applying the concepts of contiguity yields a composite neighbour country for each country.[8] Accordingly, we construct weighting matrices based on contiguity, nearby countries, and currency unions in order to measure the effect of *de-facto* and *de-jure* international financial integration and of net external positions of the composite 'neighbour'.[9]

Thus, in our regression specifications, we use for instance the term $W * IFI_i$, where IFI is a vector of the gross level of foreign assets and liabilities (as a ratio to GDP), and W is a weighting matrix for neighbourliness. For example, in the case of contiguity, we weight the IFI-value of the contiguous countries by their levels of GDP. This allows for accounting for the different sizes (and thus importance) of the various contiguous economies.[10]

For the variables described above, we expect a negative sign in the regression analysis as

[7] Based on Rose and Spiegel (2004), we use a strict currency union dummy that is equal to 1 if both countries are in a currency union.

[8] Consequently, this composite variable is zero for an economy without any contiguous countries.

[9] In line with the bilateral asset trade literature, we also construct weighting matrices based on common language between countries. However, we do not find significant coefficients for these variables.

[10] We also experiment with different weighting schemes, for example bilateral asset holdings and bilateral trade and find very similar results.

being closer to (or being in a currency union with) a financially very open or net creditor country should facilitate net external funding.

3.3.3 Convergence Clubs

This concept considers the extent of financial and trade linkages of each country with its respective 'core' country, thus the country with which it has the deepest bilateral integration. This idea goes back to the convergence club concept of Abramovitz (1986) and Baumol (1986) and has been applied to current account patterns of Emerging Asia and Emerging Europe by Hermann and Winkler (2009).

In order to achieve convergence with a 'leader' country, spillovers are sought by the periphery (catching-up or converging) countries. These spillovers work best through extensive trade and financial linkages with the core (Baumol, 1986).

Strictly speaking, the concept of convergence clubs applies best to emerging and developing countries, nevertheless we also use the approach for advanced countries as close financial and trade linkages with another country can potentially facilitate capital imports for this group.

We apply this concept by not choosing a core country *a priori* as done by Hermann and Winkler (that is based on geographic or political considerations), but use three different quantitative concepts. From the Bank for International Settlements (BIS) database, we use the consolidated foreign bank claims on each host country. Thus, the country with the highest level of bank claims is deemed to be the host country's respective core country and we use the actual amount of bank claims (as a ratio to host country GDP) in order to quantify the level of banking integration between the core and the host country.[11]

As an alternative measure, we use the bilateral level of total portfolio investments in each host country as given by the IMF's CPIS in order to determine the 'core' country. Equivalently, we employ the level of the core country's portfolio investments in the host country (as a ratio to host country GDP) as an indicator of financial integration with the core.[12]

In order to obtain a consistent measure for trade integration, we use the level of bilateral exports from each country to the core based on data from the IMF's Direction of Trade Statistics (DOTS).[13]

We expect more integration with the core to signal lower trade costs, less informational asymmetries and better funding opportunities and thus to be negatively correlated with the net external position.

[11] This method reveals that Germany is the 'core' for many European countries (supplemented by Austria for Eastern European countries), the United Kingdom for many Asian countries, France for a lot of African countries, and Spain as well as the United States for Latin American countries.

[12] Here, the United States is the core country for the majority of Asian, European, and Latin American countries.

[13] For most Asian and Latin American countries, the United States is the largest export market.

4 Empirical Results

4.1 International Financial Remoteness

We analyse the cross-country variation in the net external position, with a particular focus on the role of the bilateral concepts described in the last section.

First, we present some findings concerning the control variables in order to place the paper in the existing literature on net external positions: GDP per capita exhibits a positive sign throughout the paper which is in line with Lane and Milesi-Ferretti (2001a, 2001b, and 2002).[14] Interestingly, the coefficient is smaller (by about 50% and less significant) for the less developed sample hinting at an even larger correlation for the most advanced countries (compare columns (1) and (2), Table 3).

The demographic variables are jointly significant throughout the paper indicating that the demographic structure of a country exerts an important impact on the net external position as also found by Lane and Milesi-Ferretti (2002). We do not report the individual demographic coefficients as introduced in Appendix A2 since they do not have a meaningful interpretation individually, but only jointly as parts of a cubic polynomial.[15] The main findings for the full sample (column 1) are a positive correlation with the net foreign asset position for the age cohorts ranging from 30 to 59, whereas high youth as well as old-age dependency are associated with a lower net external position. The relation for the less advanced sample (based on the findings in column 4) exhibits a peak for the age group between 25 to 29, whereas a negative impact on the net external position sets in for all age groups above the age of 40.

In line with Lane and Milesi-Ferretti (2002), we find a significant negative coefficient on the level of public debt throughout the paper. This shows that countries with larger public debt also have larger net foreign liabilities. Thus, we find strong evidence for non-Ricardian behaviour, as high levels of public debt do not seem to be offset by private agents. Lane and Milesi-Ferretti (2002) find this result for a subsample of developing countries, whereas we confirm this result both for the full and reduced samples. Interestingly, the coefficient for the less advanced sample is about twice as large as for the full sample which suggests a higher prevalence of non-Ricardian behaviour in emerging and developing countries.[16] In addition, we control for country size and find a significant positive coefficient on the natural logarithm of population (in line with Lane and Milesi-Ferretti (2001a and 2001b)).

Building on these standard determinants of net external positions, we innovate by including our first bilateral measure: international financial remoteness. We introduce the minimum

[14] Due to recent updates by Lane and Milesi-Ferretti (2007), we are able to include 149 countries in our analysis - compared to, for example, 61 countries for the period 1990 to 1998 in Lane and Milesi-Ferretti (2002).

[15] Joint significance of the demographic variables is not found in the estimations presented in columns (2) and (8) of Table 3. This indicates that the demographic variables are of less importance for less advanced countries once we control for international financial remoteness based on pure distance measures.

[16] This is in line with Bussiere, Fratzscher, and Mueller (2006) who show that departures from Ricardian equivalence are especially present in liquidity constrained countries.

distance to one of the eight largest international creditor nations. The variable is positive and significant (with a coefficient of 0.093, significant at the 10% level for the full sample (1), and a larger coefficient of 0.146, significant at the 5% level for the reduced sample of less advanced countries (2)). To illustrate this result, were the Slovak Republic in the geographic position of Ukraine (which is equivalent to the Slovak Republic being more remote by 651km), the Slovak Republic's net external position would be less negative by eleven percentage points (that is from -64% of GDP to -53% of GDP), *ceteris paribus*. By the same token, the estimation implies that were Mexico located in the geographic location of Uruguay its net external position (as a ratio to GDP) would be less negative by 15 percentage points. As an extreme case, had the Czech Republic (one of the least remote countries, see Table 1) Argentina's level of remoteness, it would increase its net foreign asset position by about 50 percentage points (that is moving from a net liability position of 35% to a net asset position of 15% (as a ratio to GDP)).

We can infer from this that countries that are more 'financially-remote' tend to have larger net external positions, thus their net foreign liability position is smaller in absolute terms. This relation is stronger for the less advanced, hence natural debtor nations for whom net external funding is more essential. Thus, proximity to major creditor countries facilitates the running of external deficits for emerging and developing economies.

In columns (3) and (4), we modify our remoteness measure by considering the minimum time difference to one of the eight largest gross creditor nations. Here, we find very similar evidence for more remoteness correlating positively with a higher net external position. The coefficient is almost equal in terms of size and significance (at the 5% level) for both the full and less advanced samples. To exemplify the finding of column (3): were Poland (with no time zone difference to one of the eight largest creditor countries) in the location of Russia (with Moscow having a time zone difference of two hours to the closest of the large creditor countries) Poland's net external position would shift from -50% to -36% (as ratios to GDP), *ceteris paribus*.

In columns (5) and (6), we use the weighted remoteness measure presented in equation (2): in line with the previous results the variable has a positive and significant coefficient (at the 1% level for the less advanced sample). Thus our weighting procedure of distance by actual portfolio holdings, substantiates the previous findings.

Finally, we use the measure of international financial remoteness preferred by Rose and Spiegel (2009): the minimum distance to one of the three world financial centres - London, New York, and Tokyo (columns (7) and (8)). This, for the purpose of our analysis, rather coarse measure, fails to be significant for the full sample, but is significant at the 1% level for the less developed sample. This could be indicative of the fact that less advanced countries are particularly relying on financial interactions with these three most established markets.

On the whole, we can conclude that international financial remoteness is robustly significantly associated with larger net external positions. This hints at difficulties to receive net external funding for countries that are more 'remote' from world financial activity. We can attribute these

net funding problems to the positive correlation between distance and informational asymmetries as well as limited access to international finance. This finding is fortified by the fact that results are stronger for the narrow sample of less advanced countries. Moreover, we give a further potential explanation for external imbalances: next to the well-established fundamental variables determining a country's net external positions, there is a role for the geographic location of a country. We will further explore the geographic dimension in the next subsection.

4.2 Neighbourliness

As outlined in Section 3.3.2, we focus on three concepts of neigbourliness: contiguity, nearby countries, and currency unions.

In Table 4, we examine if *de-facto* international financial integration, *de-jure* financial openness, and the net foreign asset position of the respective contiguous countries (weighted by GDP of the contiguous countries) are statistically significant determinants of the net foreign asset position. We find that none of these variables are statistically significant.[17]

In Table 5, we employ a less restrictive concept: we do not focus on contiguous countries, but on all countries where the distance between their capitals is less than 1,000 km. Strikingly, columns (1) and (2) show that financial openness (both *de-facto* and *de-jure*) of countries nearby are consistent with a lower net external position. This indicates that being located near financially open countries facilitates net external borrowing. Crucially, this effect is only visible in the full sample, but not for the less advanced countries (columns (4) and (5)). This effect could be driven by European countries that are located very close to each other and also exhibit a high degree of financial integration with each other.

In a similar vein, we examine the role of being part of a currency union for the net external position (Table 6). Overall, we observe that both *de-facto* financial openness as well as larger net external positions of the other currency union members are associated with lower net external positions. Again, this is only observed for the full sample. In particular, the result regarding net foreign assets of the other currency union members is crucial. It implies that being in a currency union with net surplus countries, facilitates net borrowing. Anecdotally, the Euro area fits into this picture, as Germany as a persistent net surplus country invests substantially in net debtor countries such as Greece and Spain.

To conclude, we find an important role for the different concepts of neigbourliness in net external funding, which is foremost driven by the most advanced countries.

4.3 Convergence Clubs

Following Section 3.3.3, we use three different measures to evaluate the respective core country for each economy and the degree of integration with the core. Starting with the level of banking

[17] However, the signs on the IFI and Chinn-Ito variables are negative.

sector claims of the core country (Table 7, column 1), we find that a higher level of bank claims is associated with a more negative net external position (significant at the 5% level). This indicates that deeper integration (in terms of the banking sector) with a core economy facilitates net borrowing.

In column (2), we use portfolio investments of the core country. Again, we find a significant negative coefficient (at the 10% level).[18] We do not find evidence for a significant role of more trade linkages (column 3). However, when we control for all three measures at the same time (column 4), the bank claim measure and the trade measure both suggest that financial and trade linkages significantly facilitate net borrowing. Thus, the closer the integration with a core country, the better the access to net external funding.

For the narrow sample of less advanced countries, both the portfolio investment measure and the level of exports to the core country are significantly negative, whereas the banking sector measure just fails to be significant at the 10% level. Nevertheless, when we include all three concepts at the same time (column 8), we obtain the same qualitative results as for the full sample: banking sector integration and trade linkages with the core country make net borrowing easier.

We can conclude, both for the full and less advanced sample, that close financial and trade integration with a 'core' country pays off in terms of improved net borrowing opportunities.

4.4 Overall specification

In this subsection, we bring together the different pieces of our analysis so far. In Table 8, column (1) we employ the baseline estimation (without any bilateral concepts). In column (2), we introduce three bilateral concepts: international financial remoteness (measured by the time-zone difference to the top-8 creditor countries), *de-facto* financial openness of countries nearby, and the level of banking sector claims of the core country. All of these concepts exhibit the same sign as in the previous subsections and are highly significant. Thus, more remote countries receive less net external funding, whereas being located close to financially open countries and being integrated with the respective core country facilitates net external borrowing. Also the adjusted R^2 increases substantially from column (1) to column (2) which indicates the improved goodness of fit of our new specification.

By the same token, we analyse the less advanced sample. The previously obtained results persist (thus, financial openness of the countries nearby is not significant, whereas financial remoteness is positive and significant and integration with the core has a significant negative sign).

For both samples, we include *de-facto* and *de-jure* international financial openness in order to cross-check if these have an impact on the net external position or the bilateral concepts.

[18] Note that the number of observations decreases from 149 to 135, as data coverage of the CPIS database is lower than in the BIS database.

However, only *de-facto* openness is significant (with a positive coefficient in column (3) for the full sample). Thus our results are robust to the inclusion of these variables.

4.5 Decomposition of the net external position

In Table 9, we decompose the results obtained in Table 8 along two dimensions. First, we divide the net external position into an equity part (portfolio equity and FDI) and a debt part (portfolio and other debt). For the full sample, we find the financial remoteness indicator to be highly significant for the equity part, but not for the debt component. This could be the result of portfolio equity and FDI being more information-sensitive. In the less advanced sample we find a positive significant coefficient on financial remoteness also for the net debt position.

For the full sample, *de-facto* financial openness of countries nearby exhibits a positive sign for the equity component, whereas we find a negative sign for the debt component (as in the overall estimations). Banking sector integration with the core only has an impact on the net debt position (both for the full and reduced samples).[19]

Second, we distinguish between foreign assets and foreign liabilities: international financial remoteness is significant (at the 1% level) with a negative sign for the total foreign liability position, but has no impact on the foreign asset positions. Consequently, we find additional support for the hypothesis raised in Section 2 that financially-remote countries have difficulties raising (net) external funding, but are able to accumulate assets overseas. This holds for both the full and less advanced samples. The other bilateral variables are not significant for either foreign assets nor liabilities. Thus, their impact works solely through the net position, but not through one of the gross sides.

5 Conclusion

This paper integrates two major research areas - the analysis of external imbalances and studies of the geographical determinants of cross-border investment. We investigate the role of a country's geographic location for its ability to raise net external funding.

We find that geography matters: controlling for standard determinants of net external positions, financially-remote countries exhibit robustly more positive net external positions. This hints at difficulties to receive net external funding for countries that are more 'remote' from the major creditor countries. This finding is even stronger for a narrow sample of less advanced countries.

We also find that being located nearby (and being in a currency union with) financially very open countries, facilitates net external borrowing. In addition, close financial and trade integration with a 'core' country pays off in terms of improved net borrowing opportunities.

[19]Strikingly, the demographic structure is only significant for the net debt position.

Consequently, evidence is found for an important role of geographic and bilateral factors for a country's net external wealth. The determinants of bilateral holdings also affect aggregate gross and net positions: a financially-remote country receives substantially less net external funding.

In line with our theoretical considerations, we find an asymmetry in the way the foreign asset and foreign liability positions are affected by financial remoteness. Financially-remote countries are able to overcome remoteness with regard to investing overseas, whereas inward investments are negatively influenced by a remote geographic location. We attribute this net funding problem to the positive correlation between distance and informational asymmetries as well as limited access to international finance.

For future research, it would be desirable to develop a theoretical model on net external positions and geographic factors that takes the empirical results found in this paper into consideration.

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Appendix

A1 Country Sample and Data Sources

Country sample

Albania	Djibouti	Lao People's Dem. Rep	Rwanda
Algeria	Dominican Republic	Latvia	Samoa
Angola	Ecuador	Lebanon	Saudi Arabia
Argentina	Egypt	Lithuania	Senegal
Armenia	El Salvador	Macedonia	Sierra Leone
Australia	Equatorial Guinea	Madagascar	Singapore
Austria	Eritrea	Malawi	Slovak Republic
Azerbaijan	Estonia	Malaysia	Slovenia
Bahrain	Ethiopia	Maldives	South Africa
Bangladesh	Fiji	Mali	Spain
Belarus	Finland	Malta	Sri Lanka
Belgium	France	Mauritania	Sudan
Belize	Gabon	Mauritius	Swaziland
Benin	Gambia, The	Mexico	Sweden
Bhutan	Georgia	Moldova	Switzerland
Bolivia	Germany	Mongolia	Syrian Arab Republic
Bosnia and Herzegovina	Ghana	Morocco	Tajikistan
Botswana	Greece	Mozambique	Tanzania
Brazil	Grenada	Namibia	Thailand
Bulgaria	Guatemala	Nepal	Togo
Burkina Faso	Guinea	Netherlands	Tonga
Burundi	Haiti	New Zealand	Trinidad and Tobago
Cambodia	Honduras	Nicaragua	Tunisia
Cameroon	Hungary	Niger	Turkey
Canada	Iceland	Nigeria	Uganda
Cape Verde	India	Norway	Ukraine
Chad	Indonesia	Oman	United Arab Emirates
Chile	Iran, Islamic Republic of	Pakistan	United Kingdom
China, P. R.: Mainland	Ireland	Panama	United States
Colombia	Israel	Papua New Guinea	Uruguay
Congo, Dem. Rep. of	Italy	Paraguay	Uzbekistan
Congo, Republic of	Jamaica	Peru	Venezuela, Rep. Bol.
Costa Rica	Japan	Philippines	Vietnam
Croatia	Jordan	Poland	Yemen, Republic of
Cyprus	Kazakhstan	Portugal	Zambia
Czech Republic	Kenya	Qatar	
Cote d'Ivoire	Korea	Romania	
Denmark	Kyrgyz Republic	Russia	

Most advanced countries (in terms of GDP per capita)

Australia	Finland	Japan	Spain
Austria	France	Korea	Sweden
Bahrain	Germany	Netherlands	Switzerland
Belgium	Greece	New Zealand	United Arab Emirates
Canada	Iceland	Norway	United Kingdom
Cyprus	Ireland	Qatar	United States
Denmark	Israel	Singapore	
Equatorial Guinea	Italy	Slovenia	

Data sources

Variables	Source
(Net) External position	Lane and Milesi-Ferretti (2007)
GDP per capita	World Bank - WDI
Demographic variables	United Nations (2007): World Population Prospects: The 2006 Revision
Public debt	Panizza (2008) and National Sources
Distance and contiguous dummy	CEPII (2006)
Time difference	http://www.timeanddate.com/
Currency union dummy	Rose and Spiegel (2004)
Capital account openness	Chinn-Ito (2008)
Bilateral bank claims	BIS (2009)
Bilateral portfolio holdings	IMF - CPIS (2009)
Bilateral exports	IMF - DOTS (2009)

A2 Demographic Specification

Our demographic specification follows Fair and Dominguez (1991) and Higgins (1998), and was introduced as a determinant of net external positions by Lane and Milesi-Ferretti (2002). We divide the population into $J = 12$ age cohorts and the age variables enter the net foreign assets equation as $\sum_{j=1}^{12} \alpha_j p_{jt}$ where p_{jt} is the population share of cohort j in period t and $\sum_{j=1}^{12} \alpha_j = 0$. We make the restrictions that the coefficients lie along a cubic polynomial

$$\alpha_j = \gamma_0 + \gamma_1 j + \gamma_2 j^2 + \gamma_3 j^3$$

The zero-sum restriction on the coefficients implies that

$$\gamma_0 = -\gamma_1 (1/J) \sum_{j=1}^{12} j - \gamma_2 (1/J) \sum_{j=1}^{12} j^2 - \gamma_3 (1/J) \sum_{j=1}^{12} j^3$$

In turn, we can estimate γ_1, γ_2, γ_3 by introducing the age variables into the specification as

$$\gamma_1 DEM_{1t} + \gamma_2 DEM_{2t} + \gamma_3 DEM_{3t}$$

where

$$DEM_{1t} = \sum_{j=1}^{12} j p_{jt} - (1/J) \sum_{j=1}^{12} j \sum_{j=1}^{12} p_{jt}$$

$$DEM_{2t} = \sum_{j=1}^{12} j^2 p_{jt} - (1/J) \sum_{j=1}^{12} j^2 \sum_{j=1}^{12} p_{jt}$$

$$DEM_{3t} = \sum_{j=1}^{12} j^3 p_{jt} - (1/J) \sum_{j=1}^{12} j^3 \sum_{j=1}^{12} p_{jt}$$

Figure 1: International financial remoteness: histogram

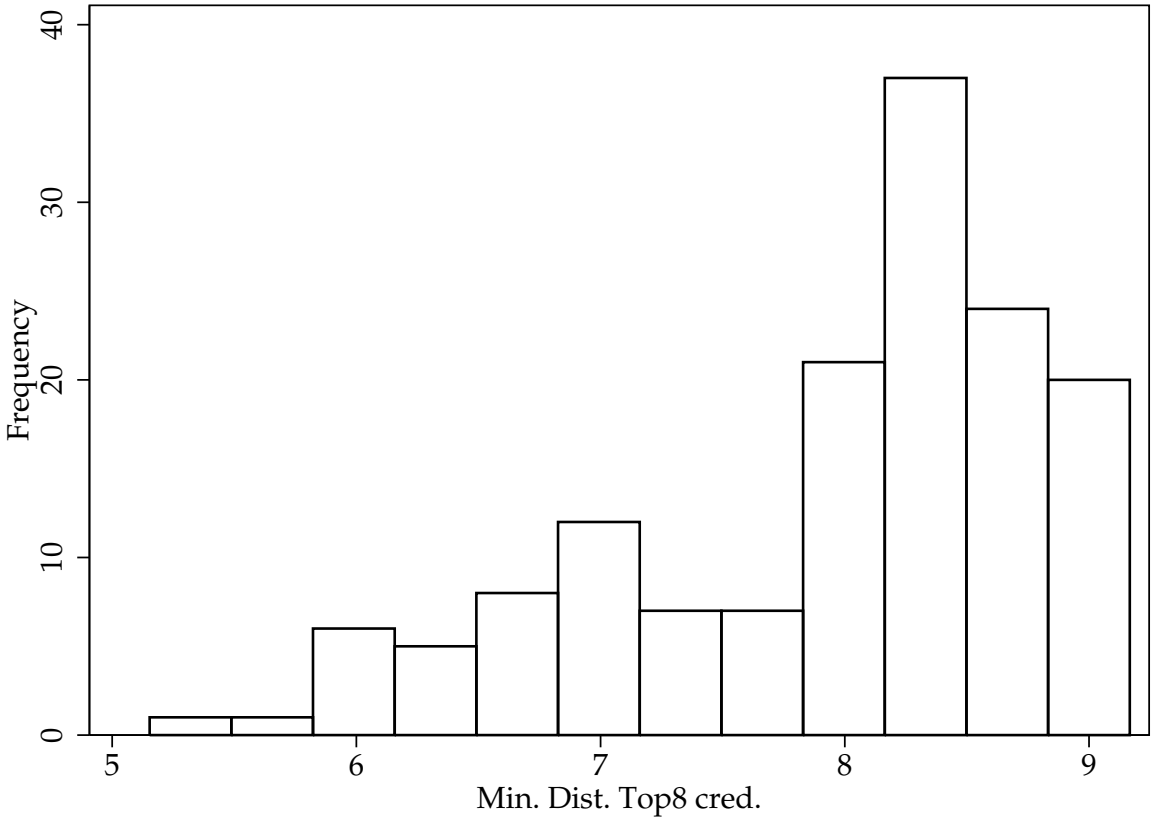

Table 1: International financial remoteness: different measures

Min. Dist. Top-8 cred.		**Min. Time Dif. Top-8 cred.**		**Min. Dist. Top-8 cred. (weighted)**		**Min. Dist. Fin. Centre**	
Least remote	Most remote	Least remote	Most remote	Least remote	Most remote	Least remote	Most remote
Belgium	New Zealand	*55 countries*	Japan	Belgium	Madagascar	Belgium	Mauritius
Czech Republic	Mauritius		Samoa	Canada	Bahrain	Netherlands	Japan
France	Japan		United States	Belarus	Cambodia	Ireland	South Africa
United Kingdom	Mozambique		Maldives	Czech Republic	Fiji	Germany	New Zealand
Denmark	Swaziland		Pakistan	Slovak Republic	Angola	France	Swaziland
Netherlands	Uruguay		Tonga	Latvia	Qatar	Switzerland	Madagascar
Switzerland	Argentina		Nepal	Austria	Namibia	Denmark	Botswana
Ireland	South Africa		Sri Lanka	Lithuania	Malaysia	Austria	Mozambique
Poland	Madagascar		India	Slovenia	Uganda	Czech Republic	Uruguay
Austria	Botswana		Bhutan	Ireland	Botswana	Korea	Argentina
Slovenia	Chile			Netherlands	Indonesia	Slovenia	Namibia
Slovak Republic	Australia			Hungary	Australia	Norway	Zambia
Germany	Tonga			Armenia	Swaziland	Spain	Malawi
Croatia	Namibia			Poland	Mauritius	Croatia	Chile
Hungary	Maldives			Denmark	China	Italy	Tonga

Table 2: International financial remoteness: Spearman's rank correlations

	Min. Dist. Top-8 cred.	**Min. Time Dif. Top-8 cred.**	**Min. Dist. Top-8 cred. (weighted)**	**Min. Dist. Fin. centre**
Min. Dist. Top-8 cred.	1.00			
Min. Time Dif. Top-8 cred.	0.46	1.00		
Min. Dist. Top-8 cred. (weighted)	0.70	0.48	1.00	
Min. Dist. Fin. centre	0.96	0.50	0.68	1.00

Table 3: International financial remoteness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP per capita	0.241	0.105	0.257	0.144	0.242	0.140	0.241	0.103
	[0.052]***	[0.056]*	[0.053]***	[0.057]**	[0.054]***	[0.060]**	[0.052]***	[0.055]*
Population	0.058	0.055	0.059	0.061	0.062	0.055	0.058	0.054
	[0.023]**	[0.021]***	[0.023]**	[0.022]***	[0.024]**	[0.021]***	[0.023]**	[0.020]***
Debt to GDP	-0.336	-0.643	-0.329	-0.599	-0.381	-0.706	-0.334	-0.626
	[0.139]**	[0.101]***	[0.128]**	[0.106]***	[0.147]**	[0.107]***	[0.140]**	[0.098]***
Min. Dist. Top-8 cred.	0.093	0.146						
	[0.050]*	[0.068]**						
Min. Time Dif. Top-8 cred.			0.068	0.057				
			[0.032]**	[0.025]**				
Min. Dist. Top-8 cred. (CPIS weights)					0.083	0.109		
					[0.047]*	[0.037]***		
Min. Dist. Fin. centre							0.053	0.260
							[0.099]	[0.080]***
Observations	149	119	149	119	136	106	149	119
Adjusted R-squared	0.35	0.44	0.38	0.44	0.38	0.50	0.36	0.46
Wald test (Demography)	3.28	1.50	7.91	7.33	3.89	3.71	4.11	1.67
P-value	0.02	0.22	0.00	0.00	0.01	0.01	0.01	0.18

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the minimum distance to one of the eight largest creditor countries (in natural log form) ((1) and (2)), the minimum time difference to one of the eight largest creditor countries ((3) and (4)), the minimum distance to one of the eight largest creditor countries weighted by portfolio holdings ((5) and (6)), and the minimum distance to one of the three major financial centres (London, New York, and Tokyo) ((7) and (8)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1), (3), (5), and (7); estimations for the sample of non-advanced countries are shown in (2), (4), (6), and (8). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 4: Neighbourliness: contiguity

	(1)	(2)	(3)	(4)	(5)	(6)
GDP per capita	0.243	0.255	0.232	0.113	0.133	0.117
	[0.054]***	[0.059]***	[0.052]***	[0.057]*	[0.059]**	[0.056]**
Population	0.059	0.060	0.056	0.053	0.054	0.054
	[0.024]**	[0.023]***	[0.023]**	[0.021]**	[0.020]***	[0.022]**
Debt to GDP	-0.332	-0.339	-0.326	-0.635	-0.649	-0.654
	[0.145]**	[0.142]**	[0.146]**	[0.109]***	[0.106]***	[0.106]***
IFI of neighbours	-0.002			-0.055		
	[0.011]			[0.080]		
Chinn-Ito of neighbours		-0.058			-0.089	
		[0.061]			[0.062]	
NFA of neighbours			0.164			-0.153
			[0.227]			[0.211]
Observations	149	149	149	119	119	119
Adjusted R-squared	0.35	0.36	0.36	0.42	0.43	0.42
Wald test (Demography)	7.24	7.08	6.83	6.36	6.92	7.24
P-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the sum of gross financial assets and liabilities (as a ratio to GDP) of the composite neighbour country ((1) and (4)), the Chinn-Ito Index of financial openness of the composite neighbour country ((2) and (5)), and the net foreign asset position (as a ratio to GDP) of the composite neighbour country ((3) and (6)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(3); estimations for the sample of non-advanced countries are shown in (4)-(6). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 5: Neighbourliness: nearby countries

	(1)	(2)	(3)	(4)	(5)	(6)
GDP per capita	0.249	0.266	0.241	0.110	0.107	0.111
	[0.053]***	[0.054]***	[0.053]***	[0.056]*	[0.058]*	[0.056]*
Population	0.053	0.072	0.057	0.052	0.050	0.055
	[0.022]**	[0.023]***	[0.025]**	[0.021]**	[0.022]**	[0.022]**
Debt to GDP	-0.341	-0.318	-0.332	-0.644	-0.651	-0.643
	[0.147]**	[0.143]**	[0.145]**	[0.107]***	[0.108]***	[0.106]***
IFI of nearby countries	-0.056			-0.022		
	[0.009]***			[0.067]		
Chinn-Ito of nearby countries		-0.183			0.026	
		[0.073]**			[0.060]	
NFA of nearby countries			0.082			-0.126
			[0.264]			[0.251]
Observations	149	149	149	119	119	119
Adjusted R-squared	0.38	0.38	0.35	0.42	0.42	0.42
Wald test (Demography)	7.65	8.18	7.46	6.81	7.00	6.88
P-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the sum of gross financial assets and liabilities (as a ratio to GDP) of the composite nearby country ((1) and (4)), the Chinn-Ito Index of financial openness of the composite nearby country ((2) and (5)), and the net foreign asset position (as a ratio to GDP) of the composite nearby country ((3) and (6)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(3); estimations for the sample of non-advanced countries are shown in (4)-(6). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 6: Neighbourliness: currency union members

	(1)	(2)	(3)	(4)	(5)	(6)
GDP per capita	0.261	0.253	0.246	0.124	0.124	0.121
	[0.055]***	[0.056]***	[0.052]***	[0.059]**	[0.059]**	[0.059]**
Population	0.057	0.054	0.061	0.048	0.044	0.048
	[0.024]**	[0.024]**	[0.023]**	[0.021]**	[0.021]**	[0.021]**
Debt to GDP	-0.341	-0.332	-0.346	-0.649	-0.650	-0.645
	[0.144]**	[0.145]**	[0.143]**	[0.105]***	[0.106]***	[0.107]***
IFI of CU members	-0.103			-0.115		
	[0.046]**			[0.077]		
Chinn-Ito of CU members		-0.072			-0.094	
		[0.079]			[0.065]	
NFA of CU members			-0.240			1.287
			[0.041]***			[1.014]
Observations	149	149	149	119	119	119
Adjusted R-squared	0.37	0.36	0.36	0.43	0.43	0.43
Wald test (Demography)	8.00	7.20	7.23	7.75	7.66	7.45
P-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the sum of gross financial assets and liabilities (as a ratio to GDP) of the composite currency union member country ((1) and (4)), the Chinn-Ito Index of financial openness of the composite currency union member country ((2) and (5)), and the net foreign asset position (as a ratio to GDP) of the composite currency union member country ((3) and (6)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(3); estimations for the sample of non-advanced countries are shown in (4)-(6). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 7: Integration with core

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP per capita	0.250	0.291	0.254	0.303	0.125	0.141	0.136	0.177
	[0.054]***	[0.055]***	[0.053]***	[0.055]***	[0.058]**	[0.056]**	[0.058]**	[0.058]***
Population	0.037	0.059	0.055	0.020	0.041	0.057	0.046	0.032
	[0.025]	[0.027]**	[0.024]**	[0.033]	[0.023]*	[0.025]**	[0.021]**	[0.027]
Debt to GDP	-0.349	-0.341	-0.356	-0.407	-0.647	-0.675	-0.682	-0.720
	[0.144]**	[0.162]**	[0.149]**	[0.168]**	[0.107]***	[0.113]***	[0.105]***	[0.115]***
Bank Claims of core	-0.467			-0.775	-0.275			-0.484
	[0.190]**			[0.240]***	[0.168]			[0.192]**
CPIS assets of core		-0.330		0.008		-0.349		-0.116
		[0.192]*		[0.218]		[0.103]***		[0.130]
Exports to core			-0.631	-0.798			-0.814	-0.899
			[0.401]	[0.439]*			[0.348]**	[0.354]**
Observations	149	135	149	135	119	106	119	106
Adjusted R-squared	0.38	0.36	0.36	0.40	0.43	0.44	0.44	0.48
Wald test (Demography)	6.64	9.35	8.09	9.04	6.96	8.15	8.70	9.22
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, bank claims of the core country (as a ratio to host country GDP) ((1), (4), (5), and (8)), portfolio assets of the core country (as a ratio to host country GDP) ((2), (4), (6), and (8)), and exports to the core country (as a ratio to GDP) ((3), (4), (7), and (8)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(4); estimations for the sample of non-advanced countries are shown in (5)-(8). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 8: Overall specification

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP-PC	0.242	0.275	0.231	0.267	0.111	0.161	0.156	0.174
	[0.052]***	[0.056]***	[0.056]***	[0.061]***	[0.056]*	[0.059]***	[0.061]**	[0.062]***
Population	0.058	0.030	0.040	0.030	0.052	0.050	0.052	0.047
	[0.023]**	[0.024]	[0.024]*	[0.024]	[0.021]**	[0.023]**	[0.022]**	[0.024]*
Debt to GDP	-0.332	-0.357	-0.423	-0.373	-0.645	-0.596	-0.614	-0.604
	[0.144]**	[0.128]***	[0.127]***	[0.130]***	[0.105]***	[0.109]***	[0.143]***	[0.112]***
Int. Fin. Rem.		0.074	0.087	0.074		0.062	0.064	0.061
		[0.031]**	[0.031]***	[0.031]**		[0.025]**	[0.026]**	[0.026]**
IFI close count.		-0.056	-0.057	-0.056		-0.035	-0.036	-0.028
		[0.011]***	[0.010]***	[0.011]***		[0.058]	[0.059]	[0.060]
Bank Cl. core		-0.508	-0.572	-0.514		-0.304	-0.307	-0.311
		[0.183]***	[0.169]***	[0.185]***		[0.136]**	[0.143]**	[0.137]**
IFI			0.051				0.016	
			[0.024]**				[0.094]	
Chinn-Ito				0.019				-0.013
				[0.029]				[0.027]
Obs.	149	149	149	148	119	119	119	118
Adj. R-squared	0.36	0.43	0.46	0.42	0.42	0.44	0.44	0.44
Wald (Dem.)	7.44	7.47	7.09	7.78	7.06	7.55	7.35	7.25
P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The dependent variable is the net foreign asset position (as a ratio to GDP); the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the minimum time difference to one of the eight largest creditor countries, the sum of gross financial assets and liabilities (as a ratio to GDP) of the composite nearby country, bank claims of the core country (as a ratio to host country GDP), the sum of gross financial assets and liabilities (as a ratio to GDP) ((3) and (7)), and the Chinn-Ito Index of financial openness ((4) and (8)). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(4); estimations for the sample of non-advanced countries are shown in (5)-(8). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

Table 9: Decomposition of the net external position

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	NFA Eq	**NFA Debt**	**TA**	**TL**	**NFA Eq**	**NFA Debt**	**TA**	**TL**
GDP-PC	0.048	0.225	0.572	0.295	-0.021	0.194	0.252	0.054
	[0.040]	[0.041]***	[0.134]***	[0.119]**	[0.034]	[0.046]***	[0.070]***	[0.065]
Population	0.036	-0.002	-0.087	-0.107	0.038	0.011	-0.042	-0.085
	[0.015]**	[0.019]	[0.058]	[0.051]**	[0.014]***	[0.017]	[0.039]	[0.031]***
Debt to GDP	-0.079	-0.353	0.440	0.849	-0.174	-0.477	0.231	0.861
	[0.070]	[0.094]***	[0.167]***	[0.124]***	[0.068]**	[0.089]***	[0.104]**	[0.119]***
Int. Fin. Rem.	0.041	0.036	-0.088	-0.168	0.047	0.026	-0.015	-0.090
	[0.016]***	[0.027]	[0.059]	[0.057]***	[0.013]***	[0.015]*	[0.025]	[0.030]***
IFI close count.	0.046	-0.085	-0.017	0.030	0.035	-0.020	0.019	0.017
	[0.007]***	[0.007]***	[0.028]	[0.023]	[0.045]	[0.042]	[0.048]	[0.070]
Bank Cl. core	-0.129	-0.314	0.379	0.865	-0.013	-0.250	-0.043	0.262
	[0.150]	[0.165]*	[0.656]	[0.601]	[0.118]	[0.091]***	[0.189]	[0.227]
Obs.	149	149	149	149	119	119	119	119
Adj. R-squared	0.11	0.52	0.31	0.26	0.14	0.59	0.19	0.50
Wald (Dem.)	0.21	6.30	2.71	3.62	0.74	6.62	0.75	3.00
P-value	0.89	0.00	0.05	0.02	0.53	0.00	0.52	0.03

Notes: The dependent variables are the net foreign equity position (as a ratio to GDP) ((1) and (5)), the net foreign debt position (as a ratio to GDP) ((2) and (6)), the gross foreign asset position ((3) and (7)), and the gross foreign liability position ((4) and (8)), respectively; the explanatory variables are GDP per capita (in natural log form), population (in natural log form), three demographic variables as defined in Appendix A2 (not reported), the ratio of public debt to GDP, the minimum time difference to one of the eight largest creditor countries, the sum of gross financial assets and liabilities (as a ratio to GDP) of the composite nearby country, and the bank claims of the core country (as a ratio to host country GDP). Cross-sectional estimation with heteroskedasticity robust standard errors (in parentheses). Full sample estimations are reported in (1)-(4); estimations for the sample of non-advanced countries are shown in (5)-(8). Wald χ^2 statistic and associated p-value for joint significance of the demographic variables. * significant at 10% level; ** significant at 5% level, *** significant at 1% level.

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