Bilateral Adjustment of Bank Assets: Boom and Bust

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Abstract

This paper provides evidence that bilateral factors were relevant for the adjustment of bank assets before and during the Great Recession. This finding is consistent with the theory that monitoring costs or informational frictions can help explain the adjustment of bank assets at a bilateral country level. Distance is a particularly relevant friction, and has non-uniform effects for advanced and emerging hosts. If the assets are denominated in domestic rather than foreign currency, this can reduce the negative effect of distance on adjustment. Further we find that trade, colonial ties and the history of a position are important for the bilateral adjustment of bank assets.

JEL classification: F30, F41, G15, G21

Keywords: Cross-border banking, Bilateral-banking , Financial crises.

1 Introduction

The Global Financial Crisis focused attention on the expansion and subsequent contraction of bank balance sheets over the last fifteen years. The world economy experienced a significant increase in gross capital flows during the boom (2005-2007) followed by a sharp tightening during the crisis (2007-2009). Milesi-Ferretti and Tille (2011) document this period in detail and find that banking flows were particularly significant. In light of the variation in the adjustment of bank assets before and during the Great Recession, we use bilateral data from the Bank for International Settlements (BIS) to see which links are important for bilateral patterns. To illustrate the magnitude of these adjustments; BIS reporting countries increased their cross border lending by 50% in the period 2005-2007, this was reversed during the crisis, with cross border assets shrinking by 52% between 2007 and 2009.

Understanding adjustments in bank holdings is central to gauge the stability of a banking system. The recent boom and bust cycle provides a testable situation of bank behaviour. While detailed analysis has been performed with aggregate data, studies at bilateral level are less common. We use bilateral data to further uncover the fragility or stickiness of banking relationships across borders and whether they differ across country types or risk environments. The literature using country level bilateral data is typically cross sectional and focuses on the ties that are important for the establishment or scale of positions, whereas we are concerned with the importance of bilateral links for the adjustment of bank holdings across time or risk periods.

Increasing understanding of bilateral patterns is important as countries experiencing significant bank inflows can face increased pressure on domestic credit systems leading to credit booms. The reversal or sudden stops of these flows causes issues such as slower growth or currency depreciations. Jordà et al. (2011) and Schularick and Taylor (2009) provide evidence of credit booms preceding recessions, while Lane and Milesi-Ferretti (2012) show how current account deficits in the boom period were associated with significant reductions in domestic demand in the subsequent period. Increased understanding of the fragility of cross border bank loans can assist policymakers in framing their reactions to crises in their lending partners economies, and indeed, global crises or

periods of high risk.

We use country level data to get a clearer picture of global banking movements. This aggregation of data is useful for national policymakers as it increases the understanding of the fragility or stickiness of cross border loans. There is also a detailed bilateral literature using data at the bank level, De Haas and Van Horen (2011). The first difference between De Haas and Van Horen (2011) and our own work is the level of data, we use country positions while they consider syndicated loans at the bank level. The use of country level data increases understanding of global movements and patterns of capital allocation. It also facilitates the analysis of the non-linear effect of distance for advanced than emerging economies. While their work focuses on banking relationships that lead to sticky positions we look at the currency the loan was issued in and the advanced or emerging nature of the host economy.

The main theories behind gravity relationships include informational frictions, Okawa and Van Wincoop (2012). A prominent type of informational friction are monitoring costs for bank lending as proposed by Kleinert et al. (2012). The further two countries are geographically, institutionally and culturally, the higher the cost of monitoring loans. This distance increases the friction to cross border banking relations. The literature highlights geographic distance from source to host country, common legal system, trade ties and colonial links as important factors for the allocation of bank holdings. We include the position held in 2005 to see whether there is evidence of compression of positions by banks across borders during the boom. In the bust period we include the adjustment from the boom to investigate mean reversion effects.

Using Bank for International Settlements (BIS) locational and consolidated data, we investigate whether these frictions are important for the adjustment in holdings for a boom (2005-2007) and bust period (2007-2009). The locational data provide an added layer to the study, facilitating analysis on assets issued in either domestic or foreign currency. For each data type we further analyse whether distance has a non-linear effect for emerging than advanced countries. These two considerations differentiate this paper from the literature on bilateral bank assets for both bank and country level studies.

We estimate the model using fixed effects on both source and host economies facilitating focus on bilateral ties. Applying host fixed effects accounts for factors that are common to investors that attract them to a specific host; macroeconomic conditions, exchange rate effects and valuation effects. Placing fixed effects on the source country means we are controlling for uniform cross border increases or decreases in cross-border positions. For example, consider France and Senegal as a source and host pair. If French banks increase their cross border lending globally this is covered in the source fixed effect, and if Senegal is attracting cross border loans due to a favourable macroeconomic environment this is absorbed in the host fixed effect. In this example, we are analysing whether bilateral ties such as common colonial history or language reduce the frictions to adjustment. We investigate the residual beyond the fixed effects to see if this can be explained by bilateral links. Finally, we want to examine whether that tie was different for emerging than advanced countries.

Specifically, we ask the following questions. Were bilateral factors important for the adjustment of bank assets in the boom and bust periods. Did the sensitivity to bilateral factors differ between advanced and emerging host economies? Did the role of bilateral factors differ on the currency denomination of the asset?

Primarily, we show that bilateral factors are important not only for the size of asset holdings, but they are relevant in explaining the adjustment of bank assets. The chief result of the paper is robust evidence that distance is more influential for emerging than advanced countries for the adjustment of bank assets. We examine whether bilateral ties differ in importance for the two country groups using both consolidated and locational data. Interestingly, when we account for the currency denomination of the loan in the boom, if the loans are denominated in domestic currency the distance effect is no longer significantly different for advanced than emerging hosts. Thus in the pre-crisis period, banks were not concerned with the friction of advanced or emerging country status of distant borrowers, once the assets were denominated in their domestic currency. In the bust period, we find a different story, non-uniform effects of distance emerge for loans even in domestic currency, source countries are more sensitive to the distance to emerging than advanced

borrowers.

The paper proceeds as follows, Section 2 details the conceptual framework and reviews the relevant literature. The empirical method is detailed in Section 3, while Section 4 describes the data. Section 5 provides results and discussion, conclusions are offered in Section 6.

2   Conceptual Framework

The relevance of bilateral ties for the adjustment of bank holdings has yet to be analysed in the literature. This paper provides evidence that bilateral factors matter for asset adjustment in boom and bust periods and are more important for emerging economies. We consider gravity variables and how they can create or ease informational frictions which affect the cost of monitoring and adjusting asset holdings.

2.1   Theoretical Motivation

Gravity models are used extensively in the trade literature to explain international trade patterns. Portes and Rey (2005) presented the foundation of applying gravity models to determine international asset portfolio flows. Distance and informational asymmetries account for the gravity findings in their paper, while in trade the main explanations are differing transport and informational costs. Portes and Rey (2005) focus on drivers of bilateral flows while more recent work is aimed at understanding the patterns observed in bilateral portfolio holdings. Okawa and Van Wincoop (2012) note the increase in papers applying gravity type models to portfolio allocation and emphasise the importance of using fixed effects in empirical work. They highlight the need for theoretical foundations to the empirical literature and provide an initial framework to consider gravity models and asset trade. The gravity model Okawa and Van Wincoop (2012) presented is driven by informational or bilateral frictions between the countries. They note that these frictions could be observed such as distance, common language or legal system. A key concept in this area is the interpretation of geographical distance for "weightless", financial trade. We interpret the negative role of distance as an informational friction.

Following the theoretical model of Kleinert et al. (2012), distance increases the monitoring costs

of the bank, thus banks offer loans at a higher price to distant borrowers. Similarly, distance increases the cost to the firm of finding the loan from a faraway bank. Kleinert et al. (2012) use a search model of banks and borrowers for loan allocation. The pairing can be across countries and is formed where loan conditions are most attractive for the borrower. They propose that the cost of monitoring loans increases in geographical distance; as such the banks closest to the borrower can offer the most appealing loans. An alternative explanation for the role of frictions is provided by Niepmann (2011). Differences of countries' factor endowments and banks' intermediation capabilities drive the heterogeneous cross border lending behaviour. Although neither model deals explicitly with the adjustment of loans in periods of global exuberance or crisis it is conceivable that these frictions will emerge as significant factors for the adjustment of assets.

2.2 Empirical Literature

Papaioannou (2009) discusses the importance of institutions and bank holdings, which provides intuition on the inclusion of the legal origins variable. The paper uses locational BIS data; we also use these data in our paper. Buch (2005) shows the importance of distance in banking and that this relationship has not changed in the fifteen years preceding 2000. The study uses bank level data across five source countries. A recent consideration of financial frictions and the crisis is provided by Buch et al. (2013). Using German bank-level data the authors show that financial frictions were important during the crisis, with distance emerging strongly from their specifications. Using annual stocks, their study focuses on the determinants of the segregated composition of bank assets.

Other papers have found that foreign-owned banks behave differently. De Haas and Van Horen (2011) find that during the crisis foreign banks remain more committed to countries that hold an affiliated subsidiary, that are closer from a geographical measure and those that have developed relations with domestic banks in the market. Their finding of the significance of relationships in banking solidifies the inclusion of the lagged stock of assets as proposed by Galstyan and Lane (2013).

As a basis for time period or boom and bust sample splits we refer to Düwel et al. (2011), who show how banking behaviour of crisis countries differs. The authors find that increased risk aversion

(in our case this is representative of the sample split boom and bust) has a negative impact on cross border lending which increases during crisis periods.

When considering informational frictions it is plausible to think that exchange rate risk could play a role. A bank issuing a loan in its domestic currency faces reduced informational frictions relative to issuing a loan in foreign currency. Lending in foreign currency requires increased analysis of exchange rate risk, thus increasing monitoring costs of the bank. In line with the theory proposed by Kleinert et al. (2012), this would increase the price of the loan. We would thus expect distance to have a larger negative effect on foreign currency loans or assets. The BIS locational data are provided for holdings in all currencies but also provides detail on whether the holding is in the domestic currency of the source country or if it was issued in foreign denominated currency. We make use of this data by running the model specifications on foreign and domestic currency denominated holdings and see if the results hold. Of particular interest here is the non-uniform behaviour of advanced and emerging economies. If source countries issue loans in their domestic currency, does distance still have a more significant effect for emerging than advanced economies?

Galstyan and Lane (2013) provide a starting point for the specification we employ[1]. Considering the crisis period, they show that gravity factors are relevant not only for the variation in levels across countries at a given point in time but also for variations in portfolio growth across time periods. The paper focuses on portfolio debt and equity across the Global Financial Crisis and subsequent recovery period. They find financial frictions have differing effects on equities and bonds and for advanced and emerging economies. An important contribution is their consideration of the lagged stock of a bilateral position. We follow this approach and use initial 2005 holdings and the adjustment of holdings during the boom in the bust sample to capture mean reversion effects. Our paper extends the analysis on advanced and emerging behaviour by introducing an interaction term. We investigate whether there are non-uniform effects of gravity variables across advanced and emerging countries.

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[1]A partial list of bilateral investment papers includes Lane (2006), Aviat and Coeurdacier (2007) and Lane and Milesi-Ferretti (2008), while Coeurdacier and Rey (2013) provide a survey of the main findings to date.

3 Empirical Method

This paper investigates the importance of bilateral relations in the adjustment of bank holdings. We consider whether bilateral links provided stability in times of bust, if they led to increased holdings in times of calm, and crucially if this differed for advanced and emerging economies. The model is applied to two distinct time periods: a boom and a bust phase. The boom period corresponds to the documented increase in cross border financial flows, low interest rates and low perceived risk, while the bust corresponds to the onset of the sub-prime mortgage crisis in the United States. The boom period is analysed as the adjustment in holdings from end of 2005 to end of 2007 and the bust period for end of 2007 to the end of 2009. The model is applied to three types of data: locational (the reporting is in accordance with the Balance of Payments method); consolidated (employs the ultimate risk reporting method); and currency-detailed locational data to analyse whether there are differences between domestic and foreign currency loans. The bilateral findings are robust across locational and consolidated data. As anticipated we find differences between domestic currency and foreign currency loans. The model specification in the boom period is:

$$\Delta Ln(A_{ij0507}) = \alpha_i + \alpha_j + \sigma Ln(A_{ij2005}) + \theta Ln(DIST_{ij}) + \lambda Ln(Trade_{ij})$$

$$+\pi Lang_{ij} + \phi Colonial_{ij} + \gamma Legal_{ij} + \omega EA_{ij} \quad\quad (1)$$

$$+\delta EU_{ij} + \kappa ADV_j + \beta(DIST_{ij} * ADV_j) + \varepsilon_{ij}$$

$\Delta Ln(Adj)_{ij0507}$ is the log change in bank holdings for the period between end of 2005 to end of 2007. $\alpha_i + \alpha_j$ are source and host country fixed effects. $Ln(A)_{ij2005}$ is the log of the stock of bilateral holdings in 2005, $Ln(DIST)_{ij}$ is the log of the bilateral distance, the log volume of imports in 2005 is represented by $Ln(Trade)_{ij}$, and the common language dummy is $Lang_{ij}$. The colonial links dummy is $Colonial_{ij}$, common euro area membership is EA_{ij} and common European Union membership is EU_{ij}: these two dummies take a value of 1 if both countries are members of the group and zero otherwise. The interaction term will capture non-uniform effects of the gravity variable DIST. The term ADV is a dummy variable and takes a value of one if the host economy is advanced[2]. A significant coefficient on the interaction term implies that distance affects emerging

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[2]The advanced countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden,

countries differently than advanced economies.

We include fixed effects for both host and source countries. This enables us to focus on the bilateral links beyond the widely documented global expansion, retrenchment and flight to safety of capital flows. This method focuses the analysis on bilateral relations. Further, their inclusion means we are effectively controlling for the common to all, and country specific macroeconomic issues at the country level.

The source dummy α_i captures the change in holdings by i in all destination countries. In this instance we aim to account for increased diversification in lending or loan supply during the boom years and possible retrenchment of holdings during the bust phase. Thus, if all countries increased their holdings in emerging markets in the calm period, we can examine whether banks in source countries increased their holdings more in the countries they trade with.

The host effects α_j control for price and exchange rate movements in the destination countries. This also captures common movement by all banks into/from a host for country specific reasons. Here we can consider a country experiencing a change in regulation or policy, we can see if trade or legal system ties acted as a stabiliser on holdings. Equally important, the host fixed effects account for changing demand for loans from international banks.

Precisely, the valuation effects have been dummied out at the country level using host fixed effects. This leaves the differences in adjustments as capital flows. A bank holding in country i recorded in the BIS (in US$) is composed of the bilateral exchange rate converted to US$ and the volume of the holding. Fixed effects control for exchange rate or valuation effects at the country level so that the change in position will be accounted for by the bilateral factors or the source and host time varying fixed effects. The following equation illustrates this with LnA_{ijt} representing the assets, ΔLnH_{jt} is the change in price of the asset, $\Delta LnEX_{jt}^{\$}$ is the bilateral exchange rate converting the currency into dollars, both of these are valuation effects and are controlled for with the fixed effects framework. Thus the remainder ΔLnQ_{ijt} yields the change in volume.

$$\Delta LnA_{ijt} = \underbrace{\Delta LnH_{jt} + \Delta LnEX_{jt}^{\$}}_{\text{common to all i in j}} + \Delta LnQ_{ijt}$$

Switzerland, United Kingdom, United States

We can focus on the relative adjustments beyond the aggregate level driven by bilateral factors.

The empirical importance of the lagged stock of assets is highlighted in Galstyan and Lane (2013) for portfolio adjustments, while De Haas and Van Horen (2011) provide banking specific evidence of the importance of relationships in banking, thus we include the 2005 holdings in both models.

$$\Delta Ln(A_{ij0709}) = \alpha_i + \alpha_j + \phi Ln(A_{ij2005}) + \sigma Ln(Adj_{ij0507}) + \theta Ln(DIST_{ij})$$

$$+\lambda Ln(Trade_{ij}) + \pi Lang_{ij} + \phi Colonial_{ij} + \gamma Legal_{ij} + \omega EA_{ij} \qquad (2)$$

$$+\delta EU_{ij} + +\kappa ADV_j + \beta(DIST_{ij} * ADV_j) + \varepsilon_{ij}$$

For the bust period, we add the adjustment during the boom period as a regressor. ϕ and σ might uncover evidence of unwinding of positions that were built up during the boom or a mean reversion effect. On an aggregate level, there is global evidence of capital returning home: here we hope to observe whether boom-acquired positions were reversed more than longer term positions. A negative coefficient would indicate a convergence or compression story, countries are disproportionately moving away from those host economies they had "larger" positions with. This would be in line with the increase in cross border banking experienced during the period, positions or holdings were being built up in new areas or markets. Galstyan and Lane (2013) report a similar story for portfolio bonds and equities.

The gravity literature suggests the inclusion of the following variables; distance, trade, common language, colonial links, common membership of regional blocs and common legal systems between countries. The common membership will be of interest to tease out the importance of a common currency. Including both euro area and European Union controls will capture this aspect. Although the literature has not yet focused on adjusted bank holdings and the importance of gravity factors, we expect that factors affecting levels of bank assets might also be relevant for adjustment of holdings.

OLS is used to estimate the models. Given the use of bilateral data it is reasonable to expect some heteroskedasticity at the country pair level. It is possible that the residual estimating ij can be related to the residual in estimating ji. In order to account for this robust standard errors are

reported.

A central question of this paper is asking whether financial or informational frictions affect countries in a uniform manner. To this end, we introduce an interaction term of distance with an advanced/emerging dummy variable. A significant coefficient implies that distance has a significantly different effect on advanced than emerging countries.

On first sight the independent variables; common language, legal origins and colonial ties raise suspicions of multicollinearity. In view of this we run various tests of multicollinearity and it is not an issue for this sample. Using the VIF command, we test the tolerance (1/VIF) and in each case the value is greater than .1.We also test the stability of the coefficients using the Collin command in stata. The condition number does not indicate instability. This is true for both the stock and growth regressions.

4   Data

4.1   BIS Data Discussion

The paper uses data sourced from the Bank of International Settlements (BIS). They are confidential data provided by 22 reporting countries to the BIS on their bilateral holdings with partner countries[3] The respective central banks collect the data at bank level, aggregate them and provide them to the BIS. It is extensive in its list of partners; reaching 168. The data used spans 2005-2009. We examine the adjustment in holdings or positions across two periods, the boom 2005-2007 and the bust 2007-2009. We take the end of period values because we are using stocks. The data report outstanding claims and liabilities of banks that are residing in the BIS source countries. These outstanding values are comprised of cross border loans, and typical bank lending activities; loans, deposits, and inter bank credit lines. Also included in these figures are securities holdings and debt and portfolio investment.

The data are provided using two reporting methods. The locational data are based on the residence principle of the banks, keeping with the balance of payments system. Thus both domestic

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[3]See Table 1

and foreign owned banks are included in these figures. [4] The availability of consolidated banking data provides an appropriate testing ground of the bilateral theory. The "Ultimate Risk" based consolidated data captures the claims of banks head-quartered in the source country and their foreign affiliates, but it nets out positions between related offices. [5] Using this data we overcome one of the main criticisms of locational based information; we avoid the inter office movement which may be happening for intra bank financial incentives and not linked to country level ties or frictions. Further, using the consolidated data as a cross-check overcomes another criticism of locational data, the exposure may not rest with the country listed but where the bank is head-quartered.

The BIS data is a rich source and it enables us to further the analysis by addressing whether the currency denomination of the loans or holdings adjusted by the banks is important. This data are provided on a locational basis,[6] and the data indicates the amount outstanding between two countries for all currencies and the amounts denominated in domestic and foreign currency.

To get a better insight into the data we present Tables 2 and 3 detailing summary statistics of the dependant variables. We report regional summary statistics on the asset adjustments for the boom and bust period of locational and consolidated data, and the locational data by reported currency. These figures show the broad global coverage of the data with ties between the BIS reporters and each region. They also reveal the regional variation in asset adjustment by BIS reporting countries. Considering the consolidated regional means, BIS countries increased their asset holdings in Eastern Europe and Central Asia by twice the amount than in OECD countries. During the bust or retrenchment period, banks adjusted least in Other High Income economies, only 4% while the South American region experienced the largest adjustment at 32%.

It is interesting to note the differences in the mean adjustments between consolidated and

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[4]The BIS definition is: Statistics designed mainly to capture the financial claims and financial liabilities of internationally active banks (i.e. excluding only resident domestic banks without positions vis--vis non-residents of the reporting country). The statistics cover all on-balance sheet positions and some off-balance sheet positions in the area of trustee business. The basic reporting basis underlying the statistics is the residence of the reporting banking office. This conforms to balance of payments and external debt methodology. These offices report exclusively their own (unconsolidated) business, including their international transactions with any of their own affiliates (branches, subsidiaries, joint ventures), including claims and liabilities vis--vis non-residents in any currency, claims and liabilities vis--vis residents of the reporting country in local currency as well as in foreign currencies.

[5]According to the BIS The statistics capture the consolidated positions of banks worldwide offices, including the positions of banks foreign subsidiaries and branches but excluding inter-office activity.

[6]As our results are similar across locational and consolidated reporting methods we are confident in its use here.

locational data. For the boom period, there was higher growth on average in the consolidated reported data. This implies there was an increase in lending by BIS banks outside their ownership structures during the boom. The consolidated data has a mean retrenchment value of 21% for the whole sample while the locational data value is 70%. The smaller consolidated number indicates that much of the retrenchment in flows for the period was intra-office flows, as the consolidated data nets out these movements.

In Table 4 we present summary statistics on the static and varying independent variables. In 2005, BIS reporting countries on average, held the largest amount of assets in OECD countries and the least in sub-Saharan Africa. This is true for both locational and consolidated data. The BIS reporting countries also did the most trade with OECD countries and the least with Sub-Saharan Africa. Finally in Table 5, note the differences in average distance to reporting countries. The region of Latin America and the Caribbean is on average the furthest distance from BIS reporters, while Europe and Central Asia is the closest region.

Given the large coverage of host countries in the data there are zeroes indicating no bilateral relation. Our log specification means these are dropped from the sample. We are concerned here with non-trivial holdings and the zero observations mainly relate to minor destinations. As a robustness check we transform the data according to Kleinert et al. (2012) and find similar results[7].

As with any dataset there are limitations. The data provides in-depth coverage of the advanced bank centres and captures much of the global banking flows. But using this data, we must bear in mind that the source countries are mostly advanced economies. To this end, we would expect stronger results if the data had a larger reporting base akin to the CPIS with in excess of 70 countries, thus including more emerging source countries. Given our central finding that distance has a significantly different effect for emerging than advanced host countries we would also anticipate differences across the behaviour of source countries.

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[7]They add 1 unit to each observation, then calculate the log of the variable.

4.2 Other Data

For the gravity variables; distance, colonial ties and common language we use the CEPII database. The trade data are taken from the IMF IFS DOTS database. The European Union and euro area dummy variables were created based on information on their respective websites. The legal origins regressor is sourced from Shleifer et al. (2008).

5 Empirical Analysis

We begin by considering the importance and variation of bilateral links in the adjustment of holdings. Figure 1 depicts selected residuals from a regression of $\text{Ln}(A_{ij0507})$ on host and source fixed effects. Figure 2 depicts selected residuals from a regression of $\text{Ln}(A_{ij0709})$ on host and source fixed effects. The United States is used as the host country for the liabilities and the source country for the assets to portray the concept. The residuals illustrate what is explained by bilateral factors, stripping out the impact of common factors. These graphs illustrate the variation in bilateral factors between countries and across the risk periods.

This paper is mainly concerned with the role of bilateral factors for the adjustment of positions during the boom and bust. However in order to be complete, we regress the stock position in 2005 on our independent variables.These results provide background as to the bilateral factors important for holdings and then we will consider their role in the adjustment of assets. Table 6 reports the results. Greater bilateral trade has a significant and positive effect on bilateral asset holdings, so too does common EU membership, common legal origins and a shared colonial history. A common language is also weakly significant. Greater distance between two countries corresponds to a lower asset position. These findings are in line with what the banking and portfolio asset literature has found. Considering the interaction terms; the distance effect is stronger for emerging than advanced host economies. This is a new finding in the literature, distance has a non-linear effect for emerging than advanced economies. Given the BIS reporting economies are mainly advanced, we interpret that holding assets in an emerging country may increase the informational friction and thus the cost of a loan. When the friction of distance is added to investing in an emerging economy we see

this non-linear effect.

5.1   The Boom Period 2005-2007

Table 7 presents the specification executed on the locational and consolidated data. Table 8 details the results for assets or loans issued in foreign and domestic currency.

During the boom period, we find evidence of convergence of bank holdings. Table 7 reports the adjustment of holdings are significantly negatively correlated with the level of assets in 2005. This implies large holding positions grew more slowly and hosts with small initial holdings experienced positive adjustments. We interpret this as compression from more traditional banking partners and a movement by banks into more global markets', coinciding with the documented boom in cross border capital flows. This pattern holds for locational and consolidated data and in both domestic and foreign currency.

Looking at the bilateral variables we see that they are significant for the adjustment in the boom. Previous research has found that gravity factors are important for the level of assets: this finding indicates that bilateral factors are also important for adjustment.

Trade links between two countries are significantly and positively associated with greater growth of positions during the boom, see Table 7. The finding holds when we look at domestic currency bank assets but is no longer significant when we consider foreign currency assets. Thus, trade ties are not associated with increased adjustment when the assets are denominated in foreign currency, but if the assets are in domestic currency; stronger trade ties are correlated with higher growth in the position for the period.

Distance emerges throughout this analysis as a significant bilateral variable. Countries further away experienced less growth in holdings than those that were geographically close. This finding fits the concept of monitoring costs of loans; the further the borrower from the lender, the higher the cost to screen hard and soft information. The increased cost in distance affects the suppliers ability to compete in the distant market as effectively as the local competitors. The impact of distance is strongest or greatest in magnitude in the locational data.

These results have quantitative resonance. We can consider France as a source country, the

distance between France and Indonesia is twice that of France to India. Column (1) in Table 7 reports a coefficient of 0.21, holding all else equal, we would expect 15% lower growth[8] by French banks of their assets in Indonesia than India during the boom. If we use the consolidated data we estimate 8% less growth of the holdings.

In the boom period, we find no significant relation between countries sharing a common language. We had anticipated a common language to reduce frictions which might have leaded to a positive adjustment for the period. This implies that, during the boom period or global increase in cross border flows; the adjustment of banking positions were not affected by language ties[9]. When we consider this finding in conjunction with 6, common language can explain the stock of a position but not the adjustment.

Colonial links emerge as a strong indicator of adjustment for the locational data. Consider two host countries that are otherwise identical, except one country has a colonial tie with source country i. The coefficient of 0.26 in column (1) in Table 7 implies greater growth of bilateral assets of 29% for the pair that share a colonial link. The specification using consolidated data estimates a 26% greater adjustment for countries with common colonial histories. The effect is insignificant in the consolidated data when we control for advanced host countries. The colonial variable emerges positively significant for assets denominated in domestic currency. Papaioannou (2009) reported that colonial ties are important for having branches or subsidiaries of banks across countries, now we show that colonial ties are also important for the adjustment of asset holdings.

We introduce an interaction term between distance and an advanced dummy to investigate whether there is a non-uniform effect of distance between the two types of countries. We report that distance from the source country significantly affects emerging hosts more than advanced host economies. This is a new finding in the literature. The interpretation is, monitoring costs or informational frictions for BIS reporting source countries are more important for emerging than advanced hosts. Quantitatively, consider two advanced economies, one is twice the distance from source country i than the other. Doubling the distance between the source and advanced host is

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[8]The calculation is $\Delta lnstock_{2.distance} - \Delta lnstock_{distance} = -.21 \ln(2) = -.15$

[9]This variable is important for portfolio adjustment of equities and bonds.

associated with 6% less growth for the distant advanced hosts. If we consider the same scenario but for emerging hosts, the country twice the distance from the source will experience 22% lower growth in asset holdings.

Next we consider Table 8, which details the domestic and foreign currency sample split. Of main interest is distance and the interaction term. Column (1) reports that for assets denominated in foreign currency, distant borrowers are associated with lower growth for the full sample. Controlling for advanced hosts, in column (2) distance has a significantly stronger effect for emerging than advanced economies. However, when we look at assets denominated in the domestic currency of the source, the distance effect is no longer significantly different for advanced than emerging hosts. In other words, pre-crisis, banks did not distinguish between equidistant advanced or emerging countries, once the assets were denominated in the banks' domestic currency.

5.2 The Bust Period 2007-2009

The bust period specification is similar to that of the boom, but with the inclusion of the adjustment that took place in the boom as an additional regressor. This should capture evidence of mean reversion of boom acquired positions. Did countries unwind positions they had built up in the 2005-2007 period.

In Table 9, we consider the initial holdings in 2005. Across the different data specifications, we consistently find evidence of compression or convergence. This is interesting as, although the banking industry was under severe stress for this period, a large position in 2005 is associated with less growth during the crisis. When we look at coefficient on the boom adjustment, we see evidence of mean reversion. Considering the coefficients of $Ln(A_{ij2005}) + Ln(Adj_{ij0507})$, we can think of a situation of source countries unwinding large positions accumulated in the boom.

Trade ties in the boom period were an important factor for growth in assets, in the bust period this link is no longer as strong. It emerges in the locational data but not consolidated data. The difference between the two data types as outlined above is the consolidated removes the inter-office adjustments. Unlike the boom period, when banks have positions in foreign currency, trade is a good predictor for positive adjustment. For banks that issue assets in domestic currency, trade is

no longer a significant explanation for asset adjustment. We interpret these findings that when the friction of foreign currency is present, trade ties can ease or reduce the friction.

Colonial links provide stability during the bust period: banks grew their holdings more in countries with a shared colonial history. Quantitatively, using locational data, a shared colonial history is associated with 22% higher growth in asset holdings. The magnitude increases to 27% when we consider assets denominated in foreign currency. In addition, sharing a language emerges as a positive link in the crisis when banks issue in their domestic currency. Thus a common language between countries reduced the informational friction, and we see greater growth in assets to host economies that share a language.

The distance variable emerges as an important factor in the adjustment of bank holdings in the crisis period. Given the time frame and global risk environment it is particularly informative to look at the interaction effects. Consider a scenario where two advanced countries are identical except one is twice the distance from source country i. In Table 9 column (2), we estimate that the more distant country is associated with 2% more growth than the near country. This is a somewhat surprising result, distance in this case appears to reduce the friction. On closer examination, this finding reflects BIS reporting countries located further from the euro area increasing their assets in euro area countries or decreasing it less than in non-euro area countries. We investigate this by using an interaction term comprising a dummy EA host and the distance to the host. Further this result holds, indeed it is stronger if we exclude the US or UK as source countries. Thus we interpret this that during the 2007-2009 crisis, BIS reporters increased their positions (or reduced them less) in distant euro area countries. What is most interesting is that it is the opposite of what would be expected. Thus during the global crisis there was a movement by BIS banks into euro area countries. This movement proceeded the euro area crisis.

If we analyse two emerging host economies that are otherwise identical, doubling the distance leads to 15% less growth in assets for the more distant economy. If we consider the consolidated data, the corresponding figures are 1% and 17% respectively. In other words, in a high risk environment distant advanced host countries benefited from positive adjustments in assets, the opposite is true

for emerging host countries.

Next we consider Table 10 and the differences between domestic or foreign currency denominated assets. In column (1) we see no significant association of distance and growth of assets denominated in foreign currency. The regression in column (2) including the interaction term depicts a very different story; highlighting the importance of looking at differences of adjustment in advanced and emerging host economies. The results in column (2) estimate that an emerging host that is twice as distant from the source had 9% lower growth over the period. But an advanced host that was twice the distance from the source economy actually experienced higher growth of 4%. We interpret this positive effect of distance on assets denominated in foreign currency to advanced hosts as a movement by banks to hedge or move away from European markets. Given the large sample of European countries reporting to the BIS, this can reflect a movement away from assets in Europe, denominated in euros.

Finally, we look at the specification estimated on assets denominated in the domestic currency of the source country. Without differentiating between advanced or emerging host countries, a country that is twice the distance from the source would have had 15% lower growth than the nearer host. Now we look at column (4) and consider the advanced and emerging differences. An advanced host country that is the same distance from the source is estimated to have a 5% greater reduction in assets during the crisis, for an emerging host it is estimated to be 27%. In comparison to the boom period, where source countries did not differentiate between distant emerging than advanced countries when the assets were denominated in domestic currency, here we see that during the crisis banks were more sensitive to distant emerging than advanced hosts.

5.3   Summary

Overall, the finding of non-uniform distance effects is a new contribution to the literature and is important for policy makers in emerging economies. In particular, that this finding is robust across both locational and consolidated data, it is not distorted by netting out affiliates or other accounting and reporting details. We have shown that gravity factors are important for the adjustment of holdings in the boom and bust period; trade, distance and colonial origins emerge as particularly

important ties.

The analysis of the domestic and foreign currency provides a further friction to consider in cross-border banking. We find that host countries that take loans in the domestic currency of the lender are less affected by bilateral distance during the pre-crisis years. BIS source countries do not distinguish between distant advanced or emerging countries if the loan is in their domestic currency. Host countries that are twice the distance from the source than an otherwise identical country, are associated with 20% less growth in assets if denominated in foreign currency but only 7% less if the loan is denominated in domestic currency. These figures illustrate that the friction of distance is intensified when loans are issued in foreign currency during the boom.

When we look at the analysis between boom and bust periods, comparing the marginal R^2, it is clear that the specification fits the boom better than the bust. This finding suggests that when source banks were moving further into cross-border positions bilateral factors are important; however, in periods of crisis, these ties provide less explanatory power.

Throughout the specification a common legal system has not been associated with the adjustment of assets. This result is somewhat surprising, as it is found to be important in the establishment of positions by Papaioannou (2009). This leads us to believe that similar institutional factors are important in the initial stages of establishing cross border flows or holdings, such as reducing the start up cost, but are not seen as a day to day cost or benefit to cross border banking.

5.4   Robustness Analysis

To be confident in our findings, we run a number of robustness checks. Primarily, we look at different time periods for the boom episode. Changing the boom to the period 2002-2007 does not affect our results. We use the 2005-2007 period so we can directly compare the locational and consolidated data, since the latter only becomes available in 2005. Similarly, we have data until 2009 which provides a natural end to our bust period, but changing the bust specification to end 2008 from end 2009 does not alter the findings.

In selecting the model specification, we considered other bilateral ties suggested by the literature and find that they are not significantly relevant in the case of adjustment of positions. The following

were estimated: growth of imports and sharing a common border.

Following our main finding of non-uniform effects of distance across advanced and emerging economies, we investigated whether these were evident for debtor or creditor countries, crisis and non-crisis economies and for varying intensity of foreign bank presence in the host markets. Using both sample splits and interaction effects there is evidence of non-uniform relations but the results are sensitive to specification changes and thus not sufficiently robust.

Finally, we checked for advanced dummy interaction terms between the advanced country dummy and the other strong bilateral indicators, none of which were robust across the different data specifications.

6   Conclusion

This paper has provided evidence that bilateral factors are relevant for the adjustment of bank assets. This evidence is consistent with the theory that monitoring costs or informational frictions assist in explaining the adjustment of bank assets at a bilateral country level. Distance is particularly relevant, and has non-uniform effects across advanced and emerging hosts. Distant emerging hosts are affected significantly more than advanced host countries, ceteris paribus. Interestingly, during the pre-crisis period, in the absence of currency risk reflected in assets denominated in domestic currency, distance did not significantly affect emerging countries more than advanced hosts. However, in the crisis phase even if assets were issued in domestic currency, BIS source countries distinguished between distant advanced than emerging hosts.

We also find that trade, colonial ties and the history of a position are important for the bilateral adjustment of bank assets. So too, but in lesser instances are common languages and regional group membership.

Figure 1: Bilateral Residuals: Boom Period
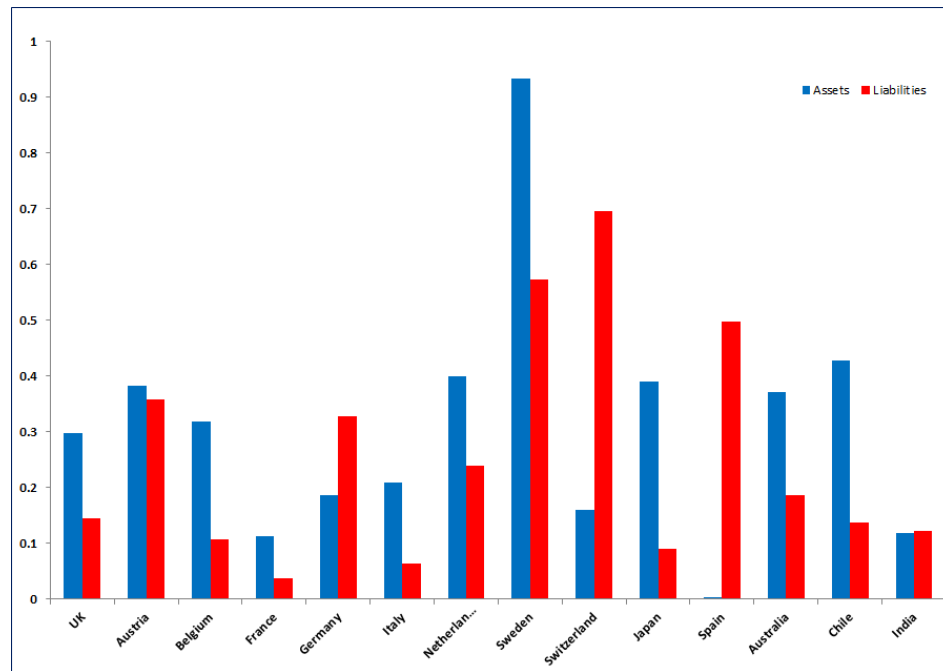
Note: The graph depicts residuals for a regression of $\mathrm{Ln}(A_{ij0507})$ on source and host country fixed effects only. The countries reported in the graph are BIS reporting countries vis a vis the United States. The blue bar represents the bilateral component of US adjusted assets, the red bar refers to the bilateral component of US liabilities.

Figure 2: Bilateral Residuals: Bust Period
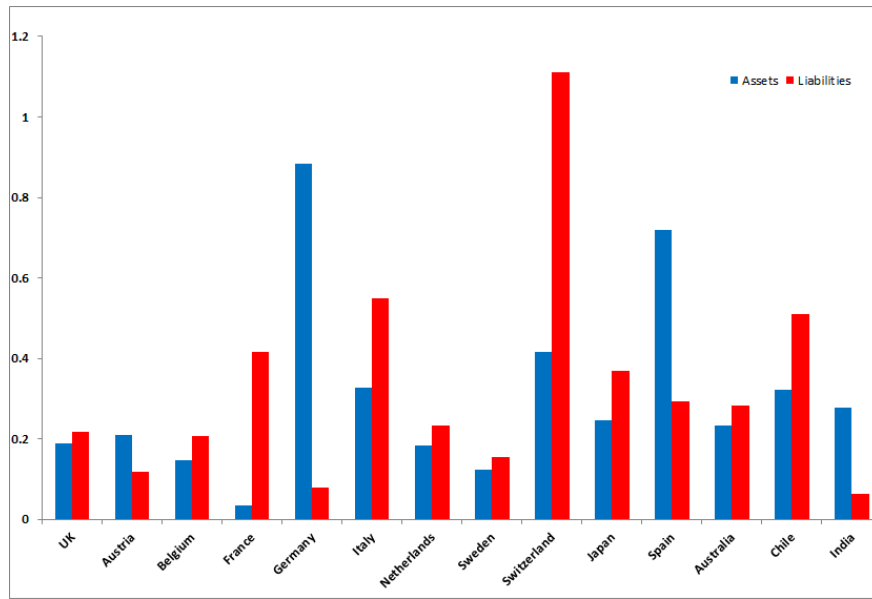
Note: The graph depicts residuals for a regression of $\text{Ln}(A_{ij0709})$ on source and host country fixed effects only. The countries reported in the graph are BIS reporting countries vis a vis the United States. The blue bar represents the bilateral component of US adjusted assets during the bust, the red bar refers to the bilateral component of US liabilities.

Table 1: BIS Reporting Countries

BIS Reporting Source Countries
Australia
Austria
Belgium
Brazil
Chile
Denmark
Finland
France
Germany
Hong Kong
India
Ireland
Italy
Japan
Luxembourg
Netherlands
Panama
Spain
Sweden
Switzerland
United Kingdom
United States

Table 2: Dependant Variable Summary Statistics

	REGION	n	Mean	S.D.	Min	0.25	Mdn	0.75	Max
	EAP	119	0.54	0.96	-1.35	0	0.33	0.85	6.21
	ECA	231	0.69	0.96	-3.04	0.13	0.67	1.17	4.64
	LAC	249	0.27	0.9	-2.46	-0.15	0.27	0.63	5.67
	MENA	155	0.27	0.82	-1.9	-0.17	0.23	0.72	2.83
Locational Boom	OECD	313	0.48	0.63	-4.42	0.25	0.44	0.66	4.77
	OHI	100	0.73	0.85	-0.94	0.27	0.63	1.12	5.89
	SA	54	0.57	1.01	-1.3	-0.01	0.34	0.91	4.48
	SSA	226	0.23	1	-4.41	-0.2	0.23	0.69	3.36
	TOTAL	1447	0.44	0.89	-4.42	0.01	0.39	0.81	6.21
	EAP	120	-0.78	0.78	-3.91	-1.1	-0.74	-0.51	3.11
	ECA	238	-0.61	0.81	-4.55	-0.89	-0.56	-0.22	3.14
	LAC	260	-0.8	0.88	-4.43	-1.16	-0.73	-0.38	2.9
	MENA	158	-0.67	1.08	-4.64	-1.1	-0.72	-0.35	4
Locational Bust	OECD	314	-0.73	0.54	-4.08	-0.97	-0.74	-0.48	2.74
	OHI	100	-0.52	0.73	-3.12	-0.89	-0.6	-0.22	2.07
	SA	54	-0.56	0.64	-2.05	-0.92	-0.56	-0.2	1.08
	SSA	233	-0.74	0.74	-3.37	-1.15	-0.69	-0.35	1.39
	TOTAL	1477	-0.7	0.79	-4.64	-1.02	-0.69	-0.36	4
	EAP	108	0.59	0.8	-2.77	0.27	0.56	1.01	3.23
	ECA	205	1.06	1.13	-1.87	0.51	0.9	1.49	4.91
	LAC	224	0.46	1	-2.81	0	0.38	0.91	5.21
	MENA	132	0.44	0.98	-3.02	-0.05	0.4	0.92	4.41
Consolidated Boom	OECD	310	0.53	0.54	-1.46	0.27	0.48	0.73	3.64
	OHI	95	0.84	0.84	-2.45	0.34	0.8	1.33	3.56
	SA	46	0.84	0.99	-0.46	0.23	0.64	1.17	4.23
	SSA	167	0.43	1.13	-3.14	0	0.41	0.88	3.97
	TOTAL	1287	0.62	0.95	-3.14	0.19	0.53	0.98	5.21
	EAP	107	-0.14	0.83	-3.73	-0.33	-0.05	0.33	1.85
	ECA	205	-0.2	0.92	-3.47	-0.47	-0.05	0.19	3.95
	LAC	228	-0.26	1.03	-5.74	-0.66	-0.11	0.25	2.3
	MENA	136	-0.23	1.17	-4.64	-0.67	-0.09	0.27	4.65
Consolidated Bust	OECD	309	-0.22	0.7	-3.47	-0.47	-0.15	0.11	2.19
	OHI	93	-0.04	0.81	-2.79	-0.4	0.04	0.38	2.37
	SA	48	-0.32	1.08	-4.16	-0.82	-0.04	0.23	1.5
	SSA	164	-0.26	1.03	-3.37	-0.88	-0.08	0.23	3.23
	TOTAL	1290	-0.21	0.93	-5.74	-0.54	-0.09	0.22	4.65

Note: Distance, Common Language and Colonial Link data are sourced from CEPII. EU and EA membership sourced from respective websites. The Legal Origins data is sourced from La Porta et al. The regions are defined as EAC; Europe and Central Asia, EAP; East Asia Pacific, LAC; Latin America and Caribbean, MENA; Middle East and Northern Africa, OECD, OHI; Other High income countries, SA; South Asia, SSA; Sub Saharan Africa.

Table 3: Dependant Variable Summary Statistics

Locational Data	REGION	n	Mean	S.D.	Min	0.25	Mdn	0.75	Max
	EAP	119	0.54	0.96	-1.35	0	0.33	0.85	6.21
	ECA	231	0.69	0.96	-3.04	0.13	0.67	1.17	4.64
	LAC	249	0.27	0.9	-2.46	-0.15	0.27	0.63	5.67
	MENA	155	0.27	0.82	-1.9	-0.17	0.23	0.72	2.83
Foreign Currency Boom	OECD	313	0.48	0.63	-4.42	0.25	0.44jhhj	0.66	4.77
	OHI	100	0.73	0.85	-0.94	0.27	0.63	1.12	5.89
	SA	54	0.57	1.01	-1.3	-0.01	0.34	0.91	4.48
	SSA	226	0.23	1	-4.41	-0.2	0.23	0.69	3.36
	TOTAL	1447	0.44	0.89	-4.42	0.01	0.39	0.81	6.21
	EAP	120	-0.78	0.78	-3.91	-1.1	-0.74	-0.51	3.11
	ECA	238	-0.61	0.81	-4.55	-0.89	-0.56	-0.22	3.14
	LAC	260	-0.8	0.88	-4.43	-1.16	-0.73	-0.38	2.9
	MENA	158	-0.67	1.08	-4.64	-1.1	-0.72	-0.35	4
Foreign Currency Bust	OECD	314	-0.73	0.54	-4.08	-0.97	-0.74	-0.48	2.74
	OHI	100	-0.52	0.73	-3.12	-0.89	-0.6	-0.22	2.07
	SA	54	-0.56	0.64	-2.05	-0.92	-0.56	-0.2	1.08
	SSA	233	-0.74	0.74	-3.37	-1.15	-0.69	-0.35	1.39
	TOTAL	1477	-0.7	0.79	-4.64	-1.02	-0.69	-0.36	4
	EAP	90	0.22	0.81	-1.91	-0.12	0.11	0.57	3.64
	ECA	172	0.72	0.99	-3.35	0.13	0.61	1.26	4.19
	LAC	158	0.2	1.11	-4.2	-0.22	0.23	0.68	5.05
	MENA	131	0.23	0.99	-3.55	-0.18	0.18	0.68	4.1
Domestic Currency Boom	OECD	294	0.48	0.69	-7.09	0.24	0.46	0.74	3.18
	OHI	91	0.58	0.82	-2.79	0.13	0.63	1.1	2.65
	SA	47	0.47	0.69	-1.59	0.13	0.27	0.77	2.2
	SSA	160	0.33	1.08	-4.77	-0.05	0.21	0.7	4.55
	TOTAL	1143	0.41	0.93	-7.09	0	0.38	0.79	5.05
	EAP	92	-0.82	0.78	-4.08	-1.21	-0.75	-0.33	1.13
	ECA	179	-0.59	0.68	-4.18	-0.85	-0.55	-0.18	1.52
	LAC	169	-0.81	0.86	-4.27	-1.22	-0.76	-0.45	3.88
	MENA	133	-0.76	1.24	-5.27	-1.33	-0.86	-0.4	3.94
Domestic Currency Bust	OECD	295	-0.74	0.62	-2.84	-1.03	-0.77	-0.42	2.13
	OHI	92	-0.63	1.05	-3.13	-1.1	-0.74	-0.31	3.99
	SA	47	-0.68	0.72	-1.79	-1.11	-0.77	-0.23	1.58
	SSA	166	-0.74	0.69	-3.37	-1.1	-0.74	-0.37	2.61
	TOTAL	1173	-0.72	0.82	-5.27	-1.09	-0.72	-0.36	3.99

Note: Distance, Common Language and Colonial Link data are sourced from CEPII. EU and EA membership sourced from respective websites. The Legal Origins data is sourced from La Porta et al. The regions are defined as EAC; Europe and Central Asia, EAP; East Asia Pacific, LAC; Latin America and Caribbean, MENA; Middle East and Northern Africa, OECD, OHI; Other High income countries, SA; South Asia, SSA; Sub Saharan Africa.

Table 4: Static Independent Variable Summary Statistics

Region	Variable	n	Mean	S.D.	Min	0.25	Mdn	0.75	Max
TOTAL		1477	0.08	0.27	0	0	0	0	1
EAP		120	0.11	0.31	0	0	0	0	1
ECA		238	0.02	0.14	0	0	0	0	1
LAC		260	0.1	0.31	0	0	0	0	1
MENA	Colonial Links	158	0.07	0.26	0	0	0	0	1
OECD		314	0.05	0.22	0	0	0	0	1
OHI		100	0.08	0.27	0	0	0	0	1
SA		54	0.07	0.26	0	0	0	0	1
SSA		233	0.14	0.34	0	0	0	0	1
TOTAL		1477	0.27	0.44	0	0	0	1	1
EAP		120	0.24	0.43	0	0	0	0	1
ECA		238	0.03	0.16	0	0	0	0	1
LAC		260	0.38	0.49	0	0	0	1	1
MENA	Legal Origins	158	0.37	0.49	0	0	0	1	1
OECD		314	0.25	0.43	0	0	0	1	1
OHI		100	0.25	0.44	0	0	0	0.5	1
SA		54	0.24	0.43	0	0	0	0	1
SSA		233	0.39	0.49	0	0	0	1	1
TOTAL		1477	0.06	0.23	0	0	0	0	1
EAP		120	0	0	0	0	0	0	0
ECA		238	0	0	0	0	0	0	0
LAC		260	0	0	0	0	0	0	0
MENA	Euro area	158	0.04	0.21	0	0	0	0	1
OECD		314	0.25	0.43	0	0	0	0	1
OHI		100	0	0	0	0	0	0	0
SA		54	0	0	0	0	0	0	0
SSA		233	0	0	0	0	0	0	0
TOTAL		1477	0.16	0.36	0	0	0	0	1
EAP		120	0	0	0	0	0	0	0
ECA		238	0.34	0.47	0	0	0	1	1
LAC		260	0	0	0	0	0	0	0
MENA	European Union	158	0.06	0.23	0	0	0	0	1
OECD		314	0.4	0.49	0	0	0	1	1
OHI		100	0.18	0.39	0	0	0	0	1
SA		54	0	0	0	0	0	0	0
SSA		233	0	0	0	0	0	0	0
TOTAL		1477	0.14	0.35	0	0	0	0	1
EAP		120	0.07	0.25	0	0	0	0	1
ECA		238	0	0	0	0	0	0	0
LAC		260	0.17	0.37	0	0	0	0	1
MENA	Common Language	158	0.09	0.29	0	0	0	0	1
OECD		314	0.16	0.37	0	0	0	0	1
OHI		100	0.11	0.31	0	0	0	0	1
SA		54	0.11	0.32	0	0	0	0	1
SSA		233	0.33	0.47	0	0	0	1	1
TOTAL		1477	8.37	0.92	4.09	7.74	8.62	9.08	9.88
EAP		120	9.03	0.43	7.05	8.97	9.13	9.26	9.86
ECA		238	7.6	0.82	4.09	7.12	7.5	8.25	9.5
LAC		260	9.05	0.41	7.03	8.92	9.1	9.26	9.83
MENA	Distance	158	8.11	0.62	6.39	7.67	8.14	8.51	9.54
OECD		314	7.95	1.22	5.15	7.01	7.74	9.07	9.88
OHI		100	8.37	0.76	5.63	7.99	8.39	9.02	9.84
SA		54	8.71	0.54	6.53	8.63	8.8	8.97	9.74
SSA		233	8.72	0.31	7.92	8.46	8.68	8.98	9.55

Note: Distance, Common Language and Colonial Link data are sourced from CEPII. EU and EA membership sourced from respective websites. The Legal Origins data is sourced from La Porta et al.

Table 5: Independent Variable Summary Statistics

Region	Variable	N	Mean	S.D.	Min	0.25	Mdn	0.75	Max
TOTAL		1447	6.7	3.01	0	4.38	6.52	8.83	15.1
EAP		119	6.29	2.59	0.69	4.25	6.55	8.36	11.2
ECA		231	6.21	2.54	0	4.3	6.29	8.47	11.6
LAC		249	5.95	2.36	0	4.37	5.94	7.52	12.9
MENA	Ln (Locat) Stk 2005	155	5.99	2.28	0	4.32	6.06	7.85	11.13
OECD		313	9.8	2.72	0	8.32	10.13	11.81	15.1
OHI		100	7.39	2.35	1.39	5.86	7.45	9.15	12.43
SA		54	5.45	2.37	0	3.69	5.34	6.96	10.56
SSA		226	4.41	2	0	2.94	4.3	5.82	10.71
TOTAL		1477	7.07	3.08	0	4.81	6.92	9.36	15.59
EAP		120	6.79	2.56	0.69	5.2	6.91	8.66	11.62
ECA		238	6.78	2.66	1.1	4.8	6.76	9.14	12.44
LAC		260	6.22	2.36	0	4.7	5.98	7.82	13.25
MENA	Ln (Locat) Stk 2007	158	6.19	2.4	0	4.99	6.29	7.87	11.44
OECD		314	10.25	2.63	2.3	8.63	10.67	12.12	15.59
OHI		100	8.12	2.26	2.3	6.54	8.51	9.85	12.64
SA		54	6.01	2.34	1.79	4.33	5.93	7.48	11.34
SSA		233	4.56	2.11	0	3.04	4.22	6.12	11.2
TOTAL		1332	5.9	3.02	0	3.56	5.94	8.09	13.78
EAP		114	5.88	2.54	0	4.03	6.02	7.79	11.13
ECA		212	5.34	2.8	0	2.99	5.42	7.78	10.21
LAC		228	5.17	2.36	0	3.35	5.27	6.72	11.65
MENA	Ln (Cons) Stk 2005	136	4.86	2.09	0	3.56	4.96	6.31	9.25
OECD		312	8.78	2.49	0	7.54	9.17	10.53	13.78
OHI		95	6.51	2.12	0	4.87	6.84	7.98	11.81
SA		48	4.85	2.62	0	2.56	4.86	6.75	9.93
SSA		187	3.35	2.29	0	1.39	3.09	5.01	10.9
TOTAL		1329	6.5	3.07	0	4.09	6.61	8.81	14.02
EAP		109	6.67	2.52	0	4.75	7.23	8.47	11.38
ECA		209	6.41	2.8	0	3.97	6.73	8.81	10.81
LAC		237	5.46	2.49	0	3.76	5.46	7.17	11.89
MENA	Ln (Cons) Stk 2007	138	5.19	2.16	0	3.71	5.27	6.71	9.52
OECD		311	9.33	2.41	1.61	8.15	9.65	10.98	14.02
OHI		95	7.35	2.06	1.95	6.18	7.69	8.82	11.93
SA		49	5.58	2.74	0	3.5	5.28	7.65	10.88
SSA		181	3.77	2.48	0	1.79	3.4	5.77	11.29
TOTAL		1477	5.5	2.89	-5.72	3.7	5.75	7.66	12.58
EAP		120	6.72	2.61	-2.12	5.3	7.19	8.33	12.47
ECA		238	5.44	2.37	-1.31	3.81	5.73	7.3	10.2
LAC		260	4.31	2.79	-5.72	2.8	4.39	6.21	12.06
MENA	Ln Imports 2005	158	4.72	2.54	-3	3.12	4.69	6.46	10.26
OECD		314	7.93	1.98	1.42	6.78	8.22	9.28	12.58
OHI		100	5.95	2.16	-0.72	4.75	6.07	7.43	10.13
SA		54	5.54	1.98	-0.85	4.49	5.8	6.78	9.9
SSA		233	3.33	2.68	-4.67	1.88	3.63	5.05	8.81
TOTAL		1477	5.78	2.93	-6.91	4.03	6.08	7.93	12.74
EAP		120	6.97	2.6	-1.1	5.48	7.48	8.62	12.74
ECA		238	5.8	2.44	-2.41	4.3	6.16	7.68	10.55
LAC		260	4.59	2.82	-5.3	3.06	4.7	6.6	12.27
MENA	Ln Imports 2007	158	5.15	2.57	-3.06	3.47	5.57	7.05	10.48
OECD		314	8.17	1.96	1.33	7.16	8.37	9.54	12.67
OHI		100	6.2	2.19	-0.99	4.8	6.39	7.67	10.39
SA		54	5.87	1.92	0.86	4.8	6.03	6.94	10.13
SSA		233	3.51	2.82	-6.91	1.91	4.02	5.33	9.14

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Table 6: Stock 2005 Positions

Variables	(1) Locational	(2) Consolidated	(3) Foreign Currency	(4) Domestic Currency
Imports	0.13***	0.14***	0.11***	0.19***
	(0.03)	(0.03)	(0.03)	(0.04)
Distance	-1.27***	-0.95***	-1.24***	-1.24***
	(0.10)	(0.11)	(0.10)	(0.14)
Common Language	0.27*	0.27*	0.28*	-0.05
	(0.14)	(0.16)	(0.15)	(0.18)
EA	0.36	0.08	-1.29***	1.04***
	(0.24)	(0.26)	(0.25)	(0.29)
EU	0.95***	0.55**	0.58**	1.33***
	(0.22)	(0.24)	(0.23)	(0.28)
Colonial Links	1.06***	1.66***	0.75***	1.33***
	(0.16)	(0.17)	(0.17)	(0.19)
Common Legal System	0.21**	0.23**	0.24**	0.24*
	(0.10)	(0.12)	(0.11)	(0.13)
Advanced	2.42	5.49***	1.17	2.12
	(1.68)	(1.81)	(1.72)	(2.01)
Adv* Distance	0.70***	0.36***	0.63***	0.58***
	(0.12)	(0.13)	(0.13)	(0.16)
Observations	1,447	1,332	1,287	1,143
R-squared	0.86	0.84	0.82	0.83

Note: The dependant variable is $Ln(A_{ij05})$. All regressions include host and source country fixed effects. Estimated by OLS, *** p<0.01, ** p<0.05, * p<0.1 refer to significance at the 1,5,10 % respectively.

Table 7: Boom: Locational & Consolidated Data

Variables	(1) Locational	(2) Locational	(3) Consolidated	(4) Consolidated
2005 Holdings	-0.23***	-0.23***	-0.20***	-0.21***
	(0.02)	(0.02)	(0.02)	(0.02)
Imports 2005	0.05***	0.05**	0.06***	0.06***
	(0.02)	(0.02)	(0.02)	(0.02)
Distance	-0.21***	-0.32***	-0.11*	-0.27***
	(0.05)	(0.07)	(0.06)	(0.07)
Common Language	-0.01	0.02	0.04	0.10
	(0.09)	(0.09)	(0.10)	(0.10)
EA	0.20	0.30*	-0.13	0.02
	(0.15)	(0.16)	(0.16)	(0.16)
EU	-0.03	0.03	0.44***	0.50***
	(0.14)	(0.14)	(0.15)	(0.15)
Colonial Links	0.26**	0.24**	0.23**	0.19
	(0.10)	(0.10)	(0.12)	(0.11)
Common Legal System	-0.01	-0.02	-0.05	-0.06
	(0.07)	(0.07)	(0.07)	(0.07)
Advanced		-0.08		-1.78
		(1.08)		(1.12)
Adv * Distance		0.23***		0.33***
		(0.08)		(0.08)
Observations	1,447	1,447	1,287	1,287
R-squared	0.32	0.33	0.37	0.38
Marg R-quared	0.09	0.10	0.07	0.08

Note: The dependant variable is $\Delta Ln(A_{ij0507})$. All regressions include host and source country fixed effects. The marginal R^2 provides the explanatory power of the bilateral variables in the specification that is not explained by the host and source dummy variables. Estimated by OLS, *** p<0.01, ** p<0.05, * p<0.1 refer to significance at the 1,5,10 % respectively.

Table 8: Boom: Foreign & Domestic Currency Data

Variables	(1) Foreign Curr	(2) Foreign Curr	(3) Domestic Curr	(4) Domestic Curr
2005 Holdings	-0.23***	-0.23***	-0.19***	-0.19***
	(0.02)	(0.03)	(0.02)	(0.02)
Imports 2005	-0.00	-0.00	0.08***	0.07***
	(0.02)	(0.03)	(0.03)	(0.03)
Distance	-0.29***	-0.37***	-0.11*	-0.18**
	(0.06)	(0.08)	(0.06)	(0.09)
Common Language	-0.05	-0.02	-0.13	-0.10
	(0.11)	(0.10)	(0.11)	(0.11)
EA	-0.11	-0.05	-0.02	0.02
	(0.17)	(0.14)	(0.17)	(0.17)
EU	-0.12	-0.09	0.56***	0.60***
	(0.16)	(0.15)	(0.17)	(0.17)
Colonial Links	0.13	0.11	0.37***	0.35***
	(0.12)	(0.10)	(0.12)	(0.12)
Common Legal System	-0.01	-0.01	0.06	0.06
	(0.08)	(0.07)	(0.08)	(0.08)
Adv * Distance		0.16*		0.13
		(0.08)		(0.10)
Observations	1,287	1,287	1,143	1,143
R-squared	0.32	0.32	0.34	0.34
Marg R-squared	0.08	0.08	0.07	0.07

Note: The dependant variable is $\Delta Ln(A_{ij0507})$. All regressions include host and source country fixed effects. The marginal R^2 provides the explanatory power of the bilateral variables in the specification that is not explained by the host and source dummy variables. Estimated by OLS, *** p<0.01, ** p<0.05, * p<0.1 refer to significance at the 1,5,10 % respectively.

Table 9: Bust: Locational & Consolidated Data

Variables	(1) Locational	(2) Locational	(3) Consolidated	(4) Consolidated
2005 Holdings	-0.13***	-0.14***	-0.10***	-0.11***
	(0.02)	(0.02)	(0.02)	(0.02)
Adj 05-07	-0.13***	-0.13***	-0.20***	-0.20***
	(0.03)	(0.03)	(0.03)	(0.03)
Imports 2007	0.04**	0.04**	0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
Distance	-0.10**	-0.22***	-0.08	-0.17**
	(0.05)	(0.06)	(0.05)	(0.07)
Common Language	-0.01	0.03	0.13	0.16*
	(0.08)	(0.08)	(0.09)	(0.10)
EA	-0.14	-0.03	-0.10	-0.02
	(0.14)	(0.14)	(0.15)	(0.15)
EU	0.11	0.18	0.36***	0.40***
	(0.13)	(0.13)	(0.14)	(0.14)
Colonial Links	0.20**	0.18*	0.24**	0.22**
	(0.10)	(0.10)	(0.11)	(0.11)
Common Legal System	-0.02	-0.03	-0.05	-0.06
	(0.06)	(0.06)	(0.07)	(0.07)
Advanced		-1.54		-1.27
		(1.00)		(1.07)
Adv * Distance		0.25***		0.18**
		(0.07)		(0.08)
Observations	1,447	1,447	1,257	1,257
R-squared	0.23	0.24	0.42	0.42
Marg R-squared	0.03	0.04	0.04	0.04

Note: The dependant variable is $\Delta Ln(A_{ij0709})$. All regressions include host and source country fixed effects. The marginal R^2 provides the explanatory power of the bilateral variables in the specification that is not explained by the host and source dummy variables. Estimated by OLS, *** p<0.01, ** p<0.05, * p<0.1 refer to significance at the 1,5,10 % respectively.

Table 10: Bust: Foreign & Domestic Currency Data

Variables	(1) Foreign Curr	(2) For Interaction	(3) Dom Curr	(4) Dom Interaction
Adj 05-07	-0.18***	-0.19***	-0.20***	-0.21***
	(0.03)	(0.03)	(0.03)	(0.03)
2005 Holdings	-0.13***	-0.14***	-0.15***	-0.16***
	(0.02)	(0.02)	(0.02)	(0.02)
Imports 2007	0.05**	0.05**	0.00	-0.00
	(0.02)	(0.02)	(0.02)	(0.02)
Distance	-0.03	-0.13*	-0.21***	-0.40***
	(0.06)	(0.07)	(0.06)	(0.08)
Common Language	0.00	0.03	0.16*	0.22**
	(0.10)	(0.10)	(0.10)	(0.10)
EA	-0.35**	-0.27	-0.11	-0.00
	(0.16)	(0.16)	(0.16)	(0.16)
EU	0.01	0.06	0.05	0.14
	(0.15)	(0.15)	(0.16)	(0.16)
Colonial Links	0.25**	0.23**	0.24**	0.19*
	(0.11)	(0.11)	(0.11)	(0.11)
Common Legal System	0.00	-0.01	0.07	0.06
	(0.07)	(0.07)	(0.07)	(0.07)
Adv * Distance		0.19**		0.33***
		(0.08)		(0.09)
Observations	1,287	1,287	1,143	1,143
R-squared	0.28	0.28	0.27	0.28
Marg R-squared	0.05	0.05	0.08	0.09

Note: The dependant variable is $\Delta Ln(A_{ij0709})$. All regressions include host and source country fixed effects. The marginal R^2 provides the explanatory power of the bilateral variables in the specification that is not explained by the host and source dummy variables. Estimated by OLS, *** p<0.01, ** p<0.05, * p<0.1 refer to significance at the 1,5,10 % respectively.

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