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# Why Has There Been Less Financial Integration in Asia Than in Europe?

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# **WHY HAS THERE BEEN LESS FINANCIAL INTEGRATION IN ASIA THAN IN EUROPE?**

**BY**

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## **ABSTRACT**

This paper asks why there is less financial integration in Asia than in Europe, taking as a case study the cross-border lending and investment activities of national banking systems. Our results suggest that different levels of economic development in Asia and Europe, along with other differences in regional circumstance that are largely predetermined from the point of view of policy (distance between countries, whether they share a common language, and whether they share a land border), explain a good deal of the difference in financial integration between the two regions. The rest of the gap is explained by policy variables. Evidence that finance follows trade suggests that Asia is less financially integrated than Europe because it has done less to promote the growth of intra-regional trade. Our results also suggest that controls on capital account transactions can have a lingering effect on the volume of cross-border claims and that their shadow is longest where those controls were maintained for the greatest number of years. The underdevelopment of financial markets and institutions in some potential lending countries also appears to be an impediment to financial integration in the region.

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# 1. INTRODUCTION

1. One of the most striking aspects of Europe's recent development has been the growth and integration of financial markets. Bond markets have grown explosively since the advent of the euro. Cross border transactions in government bonds have risen sharply with the emergence of the German bund as a benchmark asset, while the volume of corporate bond issues has grown even more dramatically.<sup>1</sup> Securities markets are consolidating around London and Frankfurt, which are competing for the mantle of Europe's dominant financial center. This rapid market integration has raised questions about the viability of Europe's traditional model of bank-based financial intermediation, causing commercial and investment banks to respond with a wave of mergers and acquisitions.<sup>2</sup>

2. In Asia, in contrast, there has been less progress in financial integration. Cross border bank credit flows remain becalmed at low levels. There is no sign of the development of an integrated market in government and corporate bonds. Equity markets have not yet begun to consolidate. If anything, the countries of East Asia have developed stronger financial ties with Western Europe and the United States than with one another. This conclusion obtains whether one analyzes the distribution of lead manager by nationality, the source of cross-border bank credit flows, or any of a number of other indicators of financial integration (Park and Bae, 2002). These contrasts are perhaps not surprising, given that the broader process of integration is so different in the two regions. Europe has gone further than Asia in the integration of product and factor markets. While the EU has a true single market in goods and services, progress toward the creation of an Asian free trade area remains incomplete. While Europe has removed essentially all barriers to the free movement of capital and most barriers to the movement of labor, in Asia limits on factor mobility remain pervasive. In Europe regionalism is motivated in no little part by a desire for political integration that

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<sup>1</sup> In addition, the volume of outstanding commercial paper rose by nearly a third in the nine months ending in October 1999 alone (the first three post-euro quarters), while international banks have been able to book very large money-market deals on a cross-border basis at very fine bid-ask spreads (Eichengreen 2000).

<sup>2</sup> These mergers and acquisitions so far remain mainly within national borders but increasingly occur across them (as with the acquisition by Spanish banks of the leading Portuguese banking groups and by Swedish intermediaries of some Danish institutions).

has no counterpart in East Asia. Where Europe has built institutions of transnational governance (the European Commission, the European Parliament, the European Court of Justice, and now the European Central Bank), Asian integration is “weakly institutionalized.” That is, it is predicated not on transnational institutions but on intergovernmental agreements that defer to the sovereignty of the participating states. Nor is integration in Asia driven by an alliance of key nations like France and Germany or by a single hegemonic power (the role played by the United States in the Western Hemisphere); it is a more multi-polar process.

3. All of these are reasons why regionalism might take different forms in Europe and Asia. But none of them obviously explains why experience with financial integration in the two regions contrasts so sharply.

4. This paper inquires into the causes of these contrasting experiences and asks what they bode for the future. It poses questions like the following. Is the contrast explicable in terms of the fact that Europe was earlier to begin the process of removing controls on cross-border portfolio capital flows? Is it explicable by the fact that Europe had better developed financial markets at the start of its regional monetary and financial integration project? Is the main difference deeper trade and factor market integration due to Europe’s Single Market project, compared to more partial and tentative moves toward regional trade integration in Asia? Or does the euro make a key difference through the elimination of exchange risk?

5. Our empirical analysis focuses on cross border bank claims, which are available on a bilateral basis. In contrast to other forms of financial capital, statistics on which do not typically distinguish country of origin and destination, there exists disaggregated information on the home and host country for consolidated international bank claims courtesy of the Bank for International Settlements.<sup>3</sup> We are interested in comparing international financial transactions within Europe and within Asia; doing so requires information on source and destination, by country. While this focus yields evidence on the determinants of only one aspect of financial internationalization, the results still shed useful new light on what was previously terra incognita.

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<sup>3</sup> The only other form of financial capital flow that could be analyzed in this manner, to our knowledge, is M&A related flows, for which several commercial vendors tabulate deals by host and home country. See di Giovanni (2002). There is also a kindred literature on foreign direct investment; see Mody, Razin and Sadka (2002).

## 2. DATA AND METHODS

6. Our dependent variable is the consolidated international bank claims of BIS reporting banks as of the end of 2000, in U.S. dollar terms. We gathered these data for reporting Western European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom), reporting Asian countries (Japan, Taiwan, Hong Kong and Singapore), and the United States and Canada.<sup>4</sup> The data for Taiwan, Hong Kong and Singapore, while reported to the BIS, are not published on its website or in its *Quarterly Review* for reasons of confidentiality. These were obtained from the BIS (in the case of Taiwan) and the relevant national authorities (in the cases of Hong Kong and Singapore).<sup>5</sup> We also obtained compatible data for Korea from that country's supervisory authorities. In addition to both claims of and on each of these countries vis-a-vis one another, we have their individual claims on several additional Central European countries (Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Poland, Romania, and the Slovak Republic) and several additional Asian countries (China, Indonesia, Malaysia, Philippines, and Thailand).

7. This measure of international bank claims is organized by the country of origin of the claims (specifically, the country in which the head office of the reporting bank is located). The underlying information is drawn mainly from supervisory and statistical returns of the countries in which the banks are headquartered. Data are broken down by national destination of the loans. We consider gross rather than net flows – for example, we have separate observations for Japanese banks' claims on Korean borrowers and Korean banks' claims on Japanese borrowers.

8. The BIS consolidated claims provide a broad measure of international financial integration, appropriately for our study. In contrast to the BIS "locational data" (not published on the BIS website), which distinguish banks by location, the consolidated data distinguish banks by nationality,

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<sup>4</sup> Note that the BIS also reports this variable for some very small European countries like Andorra and Luxembourg. These small countries were not included in our analysis, both because their circumstances are special and because it was not possible to assemble information on the ancillary variables.

<sup>5</sup> These limitations of country coverage create obvious problems of selectivity, which we address below. Reassuringly, however, they turn out to have no implications for our substantive conclusions.

summing contractual lending by the head office and its branches and subsidiaries on a worldwide consolidated basis (net of inter-office accounts). Claims of Japanese bank branches and subsidiaries operating in, say, the UK (or, for that matter, in a third country) and raising funds there in order to extend loans to UK borrowers are counted as Japanese claims on the UK. If we were just interested in analyzing the determinants of cross border capital flows, locational data would be preferable. But financial integration can take other forms besides cross-border capital flows. When Japanese banks set up shop in London and do intermediation there, that too can be thought of as a form of financial integration.<sup>6</sup> In a sense, it is to our advantage that our data capture financial integration broadly and not simply the volume of bank-intermediated cross-border capital flows.

9. It will be evident from the preceding that we have information on internationally active banks headquartered in a smaller number of Asian than European countries. This reflects economic reality: banks headquartered in a larger number of different European countries engage in international lending than is the case of their Asian counterparts.<sup>7</sup> The dearth of data for Asia is not quite as bad as the preceding paragraph suggests, since we have data on claims by banks in reporting Asian countries broken down not only into claims on one another but also into claims on other Asian countries (including China, Indonesia, Malaysia, Philippines, and Thailand, as noted above), as well as on individual European countries and on Canada and the United States. But the fact that we have data only for Asia's financially more-developed economies raises a problem of selectivity – with more complete Asian data, might we get different results and an even stronger contrast between Asia and Europe? This is an important issue. We address it below by explicitly modeling the determinants of data availability and correcting for sample selectivity.

10. We gathered ancillary information about these countries from a variety of sources. Information on GDP, population, and trade was drawn

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<sup>6</sup> Banking system internationalization is widely discussed in the literature as a form of financial integration.

<sup>7</sup> There may also be a statistical/institutional aspect to the reporting discrepancy: the BIS has expanded into Asia only relatively recently, so a relatively limited number of Asian governments and supervisors report to it.



from IMF and World Bank publications.<sup>8</sup> Data on physical distance, dominant language, and shared borders was taken from Andy Rose's website. Our classification of de facto exchange rate arrangements (pegged, intermediate and floating) was taken from Reinhart and Rogoff (2002), who distinguish exchange rate regimes using actual rates (including black market rates) as opposed to official arrangements declared to the IMF.<sup>9</sup>

11. The gravity model provides the framework for our empirical analysis. We hypothesize that cross border claims increase with the average size of the lending and borrowing countries (specifically, with their aggregate and per capita GDPs), increase with common language and shared border, and decline with physical distance between the lending and borrowing countries (where these last three variables proxy for information and transactions costs). The gravity model is typically used to analyze merchandise trade flows, but there have also been some prior applications to international investment (see for example Frankel, 1997 and Frankel and Wei, 1997). To our knowledge, however, there have been few previous applications to issues like international banking.<sup>10</sup>

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<sup>8</sup> The Bank's *World Development Indicators* and the Fund's *International Financial Statistics* and *Direction of Trade Statistics*. Taiwan not being a member of these organizations, we gathered data on its trade from national sources.

<sup>9</sup> Below we compare the results using the Reinhart-Rogoff classification with those obtained using an alternative measure of de facto exchange rate regimes constructed by Levy Yeyati and Sturzenegger (2002) and with the IMF's de jure classification as published in *International Financial Statistics*.

<sup>10</sup> The one exception of which we are aware is Rose and Spiegel (2002).

### 3. BASIC RESULTS

12. Table 1 shows summary statistics for our variables for Asia, for Europe, and for the US and Canada (the last two for comparison's sake). The first row reports total consolidated international banking claims of individual European (Asian) countries on other European (Asian) countries. Note that these are total claims, not yet country averages or ratios to GDP. Such claims are an order of magnitude larger in Europe than in Asia. The differential is equally evident when we scale consolidated claims on other countries within the region by GDP and more pronounced still when we scale them by population.

13. Note also, from Table 1, that several plausible determinants of international bank claims are lower in Asia than in Europe. This is true of country size (measured here by GDP). It is true of the level of economic development (measured by per capita GDP), which is relevant insofar as richer countries tend to be more open financially. And, it is true of intra-regional trade (scaled by regional GDP), which is relevant insofar as finance tends to follow trade (Rose and Spiegel, 2002). Europe has more stable exchange rates (as measured by the standard deviation of cross rates within the region), which may be conducive to financial internationalization. It has a longer history of domestic financial liberalization and more years without capital controls. These are all potential explanations for more financial internationalization in Europe. The one variable that works in the other direction is that banking systems are a more important source of domestic credit in Asia (scaled by GDP), the notion here being that when banking systems are more important domestically they will also be more important internationally.

14. Table 2 reports results for the gravity model.<sup>11</sup> Recall that the unit of observation is gross bilateral claims, and that independent variables like GDP, per capita GDP, and trade are averages for the lending and borrowing countries. The basic specification in column 1 works well: international bank lending is an increasing function of GDP and per capita GDP. The coefficient on log GDP is unity; in other words, there is evidence of neither economies nor diseconomies of scale. In addition, richer countries (as measured by the level of per capita GDP) have a higher level of consolidated bank claims on

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<sup>11</sup> The equation is estimated in double-log form, which seems to deal best with potential problems of heteroscedasticity.

other countries. International bank lending falls with distance and rises with common language. All of these coefficients differ significantly from zero at standard confidence levels. In contrast to gravity models of merchandise trade, there is no significant effect of common land border. That physical distance and common language but not common land border seem to matter suggests that information costs are more important than transportation costs.<sup>12</sup>

15. The second column reports what are in some sense the most provocative results, adding dummy variables for intra-European and intra-Asian flows. Note that the coefficient for Asia is larger and that the two coefficients are significantly different from one another at the 99 per cent confidence level according to the standard F test. Also noteworthy is the fact that while the coefficient for intra-European flows enters negatively and significantly (at the 90 per cent level), that for intra-Asian flows is positive but insignificant.<sup>13</sup> Asia is characterized by a lower value of cross-border bank claims, these results suggest, because Asian countries have, inter alia, lower per capita incomes on average and are (again, on average) further distant from one another, not because their financial markets are otherwise less well integrated. (Recall that the Asian countries in question include not just Japan, Hong Kong, Singapore, South Korea and Taiwan but also a number of smaller, lower income emerging-market borrowers.) The problem, these results suggest, is not simply one of financial integration per se; it is a problem of geography and economic development. Again, the question is the generality of this finding, to which we will also return.

16. In columns 3 and 5 we replicate these results with a correction for selectivity. We model the determinants of inclusion in the sample – this generally means the probability of reporting domestic banks' claims on other countries to the BIS – as a function of GDP, GDP per capita, and a constant

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<sup>12</sup> This is in contrast to results for both trade (e.g. Frankel, 1997) and M&A flows (di Giovanni, 2002), which tend to find that both information and transportation costs matter.

<sup>13</sup> The omitted alternatives are US-Canadian claims (these two countries being highly integrated financially) and intercontinental claims. When we add a North American dummy variable (for US-Canada claims), the other results are unchanged (and the new variable enters with a coefficient insignificantly different from zero). In other words, the negative coefficients for Asia and Europe are not being driven by an unusually high level of claims between the two North American countries.

term.<sup>14</sup> (The probit for the availability of data is in columns 4 and 6.) This specification is motivated by the observation that the BIS has traditionally been a club of high-income countries. Not surprisingly, the results suggest that selectivity is present. The point estimate of Heckman's lambda, measuring the effects of the selectivity correction, is several times its standard error. Reassuringly, however, comparing columns 1-2 with columns 3-4 shows that the basic results carry over. We report selectivity corrected estimates in all the regressions that follow.

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<sup>14</sup> We say "generally" because we also have data for Korea that are not reported to the BIS. None of our results hinge on the inclusion of Korea in the sample or on its treatment in the selection equation.

## 4. HYPOTHESIS TESTS

17. We now consider a series of specific hypotheses that may help to explain the differing levels of financial integration in Asia and Europe: the extent of trade integration, the monetary and exchange rate regime, the development and deregulation of financial markets, and the difficulties of Japanese banks.

18. The first column of Table 3 addresses the hypothesis that Europe's efforts to promote intra-regional trade, starting with the completion of its customs union in the mid-1960s and continuing with the Single Market Act in 1986, encouraged financial integration by promoting the merchandise transactions to which financial flows are often linked.<sup>15</sup> It shows what happens when we add bilateral trade (the bilateral exports of the two partner countries) to the previous specification. The point estimate on the new variable suggests that a ten per cent increase in trade is associated with a nine per cent increase in cross-border bank lending, other things equal.<sup>16</sup>

19. Previous research has found that the European Community and the Single Market have been predominantly trade creating.<sup>17</sup> The record of East Asian regionalism, by comparison, is more mixed. These observations suggest that the longer history and more successful record of trade liberalization in Europe may be part of the explanation for the extent of financial integration there. Once we control for trade, we get negative

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<sup>15</sup> One can argue further that the Single Market Act promoted international bank lending by eliminating barriers within Europe to bank mergers, acquisitions and strategic alliances. In practice, however, the extent of cross-border bank consolidation remains limited. See footnote 3 above.

<sup>16</sup> One can reasonably question the direction of causality, since trade plausibly follows finance as well as the other way around. But there is no doubt that there exists an association. We followed Rose and Spiegel (2002) by omitting distance, contiguity and common language from the equation and instead using them as instruments for the trade variable. As in their study, we found that the coefficient on trade was unaffected.

<sup>17</sup> See for example Bayoumi and Eichengreen (1997), whose conclusion is that the European Economic Community and the European Free Trade Area both significantly stimulated intra-European trade. The authors find that EFTA was mainly trade creating, while the EEC increased the relative importance of intra-bloc trade through a combination of trade creation and trade diversion. Their results for the founding members are reinforced by an analysis of the two enlargements of the EEC, for which they find both trade creation and trade diversion. Contemporaneous empirical studies (e.g. Frankel, 1997) find less evidence of consistent, significant effects of Asian regional agreements.

coefficients on both intra-European bank claims and intra-Asian bank claims; in other words, the largest flows, other things equal, are between Europe and Asia and between North America and Europe (this being the point emphasized by Park and Bae, 2002).<sup>18</sup> Importantly, the negative coefficient on the dummy for intra-Asian claims is significantly larger in absolute value than its counterpart for Europe according to the standard F test (reported in the bottom row of the table). In other words, the slower development of intra-regional trade is not a sufficient explanation by itself for lower levels of financial integration in Asia than in Europe.<sup>19</sup>

20. If the long history of trade integration, as opposed to simply its level, is conducive to financial integration, then a given level of trade should have larger effects in Europe than in Asia. To test this, we added the interaction of bilateral trade with the Asia dummy (in column 2). The results are consistent with this interpretation, in that the log of trade remains positive and significant while the interaction of trade with the Asia dummy enters negatively and significantly. Note, however, that the difference in the magnitude of the effect of bilateral trade in Asia is relatively minor in comparison with the large overall effect.

21. Column 3 asks whether the contrast is explicable by the fact that Europe had better developed financial markets at the start of its regional monetary and financial integration project. We proxy domestic financial depth and development by the ratio of domestic credit provided by the banking sector as a percentage of GDP (again, the average for the lending and borrowing countries). So measured, there is no sign that domestic financial development has an impact on consolidated international bank claims.<sup>20</sup>

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<sup>18</sup> And between the US and Canada, as noted above.

<sup>19</sup> The same, not unexpectedly, is true in column 1, where we constraint the effects of bilateral trade to be the same in Europe and Asia.

<sup>20</sup> Note that addition of this variable causes the significance of the difference between the two regional dummy variables to disappear (the F-statistic is now less than one, as shown at the bottom of the relevant column). This sharp change in other coefficients, which seems to suggest that we are now fully explaining the observed difference between Asia and Europe with reference to a domestic-financial-development effect that is statistically insignificant, appears to be a statistical anomaly. In particular, it reflects the extent to which Japan is an outlier: its domestic credit is 310 per cent of GDP while the other countries are all in the range of 50 to 150 per cent. Because domestic credit (averaged over the borrowing and lending countries) is positively correlated with the Asia dummy but negatively correlated with the Europe dummy, even an insignificant effect, in conjunction for the large average values for country pairs involving Japan, has a large impact on the difference between the Asia and Europe dummies.

22. We also considered only financial depth in the lending country on the grounds that it is mainly the development of the lending country's banks that is responsible for the extent of international bank credit flows. As shown in column 4, the coefficient on this variable is positive and significant at standard confidence levels. Not surprisingly, countries with better developed banking systems engage in more cross border intermediation. However, less well developed lending-country financial systems do not explain the relatively low level of intra-Asian international bank claims – to the contrary. When this new variable is added, the difference between the intra-Asia and intra-Europe dummies is larger, not smaller, than before.<sup>21</sup> Arithmetically, we now get a larger difference in the absolute value of the two dummies for intra-regional bank claims because the coefficient on financial depth in the lending country is positive, as already noted, and the mean of that regressor is larger in Asia than in Europe – because we have data on this variable for only five Asian countries, namely, Japan, Hong Kong, Singapore, South Korea, and Taiwan.<sup>22</sup>

23. Column 5 looks at financial liberalization as distinct from financial development, using the World Bank's index of interest rate decontrol. This variable is available up through 1997; we therefore construct our financial liberalization measure as the number of years of financial liberalization in the period 1990-1997 in the borrowing country.<sup>23</sup> The results are supportive of the view that countries that have more completely liberalized their domestic financial markets engage in more cross-border bank transactions. The coefficient in question is significant at the 95 per cent confidence level. When we construct this variable as the average for the lending and borrowing countries, however, the coefficient is significant at the 90 but not the 95 per cent confidence level. The sensitivity of this estimate to how the measure is constructed suggests caution in interpreting the result; we present further evidence below suggesting that the extent and timing of domestic financial liberalization is not one of the more important determinants of regional

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<sup>21</sup> This point was anticipated in our discussion of Table 1 (line 7) above.

<sup>22</sup> The domestic bank credit/GDP ratio is nearly twice as high in the five Asian countries as in Europe (when the ratios in question are GDP weighted) – again, see Table 1.

<sup>23</sup> Using this variable for an earlier date is not ideal, but it is probably not terribly misleading either, given the need for domestic financial liberalization to work its effects. There is not much variation in these data, since most countries in the sample had removed their interest rate controls by the early 1990s; as a consequence, the results are likely to be driven by the observations for a few countries (in Asia, China and Korea; in Europe, various transition economies), where decontrol was still incomplete.

financial integration. And, regardless of how this variable is defined, there remains a significant difference in the coefficients on intra-Asian and intra-European claims. Evidently, less financial liberalization is relevant, but it is only part of the explanation for less cross-border bank intermediation within Asia.

24. Column 6 asks whether these contrasting patterns can be explained by the fact that Europe was earlier to begin the process of removing its controls on cross-border portfolio capital flows. We construct the independent variable as the average number of years that the two countries in question did not have capital controls in the 1990s.<sup>24</sup> The results suggest that the larger the share of the decade for which the capital account was uncontrolled, the larger consolidated international bank claims. One reason that Asia has a lower level of financial integration evidently is that it has relied more on capital controls in recent years. Revealingly, the addition of this variable eliminates the difference between the intra-Europe and intra-Asia dummies. A recent history of more stringent capital controls can entirely explain the difference between the two regions, or so this regression suggests. This is the first (and, it will turn out, only) statistically-significant policy-related variable that has this effect.

25. Column 7 asks whether the chronic problems of Japan's banks provide part of the explanation for why there is not more cross-border bank lending within Asia, by adding a dummy variable for observations where Japan is the lending country. The BIS, among others, places considerable weight in its discussion of changes in international bank claims on the tendency for Japanese banks to draw down their exposures on other countries as a way of replenishing their capital and liquidity. This tendency has been invoked in particular as part of the explanation for the severity of the Korean crisis at the end of 1997; see BIS (1998). The earlier enthusiasm with which Japanese banks leapt into international lending, once Japanese financial markets were deregulated and they lost their captive corporate customers to securitization, works in the other direction by creating a network

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<sup>24</sup> Our initial thought was to measure the number of years since the removal of capital controls. But since some countries, such as the United States, essentially never had capital controls, this variable, if left unadjusted, would be dominated by outliers. And those outliers would probably not reflect economic reality, insofar as distant history, as opposed to more the more recent history of capital account restrictions, is unlikely to strongly shape capital flows. We therefore prefer the measure described in the text, which is roughly equivalent to the share of the 1990s decade that was capital-control free.



of customer relations and a stock of syndicated loans, all of which would not yet have necessarily been drawn down. The dummy variable for Japan turns out to enter positively, as if this second effect dominates (although it is not significant at standard confidence levels). The addition of this variable does not alter the relative size of the two dummies for intra-regional claims. In other words, problems in the Japanese banking system do not obviously explain Asia's lower levels of financial integration.

26. Column 8 asks whether part of the story is more stable exchange rates in Europe (of which monetary union – the elimination of intra-regional exchange rate volatility achieved by the elimination of the exchange rate – is the limiting case). When stability or volatility is measured by the standard deviation of the monthly nominal rate over the 12 months of calendar year 2000, more stable bilateral exchange rates do not appear to be associated with international bank lending; if anything, there is weak evidence of the opposite. And, given this coefficient, there is, predictably, no change in the relative size of the coefficients for intra-Asia-lending and intra-European lending, which continue to differ significantly from one another. It is not obvious, in other words, that financial integration in Asia has been hindered by the post-1997 collapse of pegs and the observed volatility of currencies, or that cross-border bank lending in Europe has been significantly stimulated by monetary unification.<sup>25</sup>

27. Column 9 sheds some light on why: it distinguishes pegged exchange rates, intermediate regimes, and flexible rates.<sup>26</sup> Both pegs and floats seem to be associated with less cross-border lending compared to the omitted alternative of intermediate regimes. This is consistent with the view (viz. Goldstein, 1998) that soft pegs imply the socialization of exchange risk and lead governments to implicitly guarantee bank commitments, encouraging more risky cross-border lending than would occur in their absence. Note, however, that both coefficients are not quite significant at the 90 per cent confidence level. Again, this suggests caution in interpreting the result. (We

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<sup>25</sup> A dummy variable for when both countries in a pair participate in Europe's monetary union entered with a zero coefficient whenever it was tried. Note that this was still true when we omitted the dummy variable for European country pairs (with which the EMU dummy is highly colinear).

<sup>26</sup> As noted above, we use the Reinhart-Rogoff categorization, classifying their regimes 1-4 as pegs, 5-12 as intermediate arrangements, and 13 as floating. We obtain the same pattern of signs reported in the text when we substitute the Levy Yeyati-Sturzenegger classification or the IMF's de jure classification, although levels of statistical significance are lower.

offer additional grounds for caution momentarily.) Moreover, given the wide range of de facto exchange rate regimes maintained in Asia, circa 2000, the addition of these variables reduces but does not eliminate the difference between the key coefficients on the two dummy variables for intra-Asian and intra-European claims.

28. In column 10, we test the entire set of hypotheses simultaneously. Most of the gravity-model-related variables remain well defined and enter with coefficients that are significantly different from zero at standard confidence levels (the exceptions being common land border, which just misses statistical significance at the 90 per cent level, and now per capita income). Most of the remaining variables have similar effects as before. More bilateral trade, better developed financial markets in the lending country, and the earlier removal of capital controls are all associated with significantly greater cross-border bank claims.<sup>27</sup> The problems of Japan's banks continue to have little discernible impact on the magnitude of cross-border bank claims within Asia.

29. The main differences from when we tested hypotheses one at a time are that the domestic financial liberalization variable loses all significance, and there is not much evidence of a relationship between the exchange rate regime and financial integration. Neither exchange rate regime measure now comes close to significant at the 90 per cent confidence level, and a chi-squared test for the significance of the pair fails to reject the null of no effect.

30. While the negative coefficient on the Asia dummy continues to exceed its European counterpart in absolute value, we now cannot reject the null that the two effects are equal to one another. In other words, after controlling for the country characteristics suggested by the gravity-model framework and for selected policy-related variables (capital controls, the extent of intra-regional trade, the structure of domestic financial markets), there no longer remains an Asia-Europe difference to be explained.

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<sup>27</sup> Although the last of these effects is now only significant at the 90, as opposed to the 95 per cent confidence level.

## 5. CONCLUSIONS AND IMPLICATIONS

31. In this paper we have viewed Asian financial integration in a European mirror. We have asked why there is less financial integration in Asia, taking as a case study the cross-border lending and investment activities of national banking systems.

32. The starting point for our analysis is the observation that cross-border bank claims in Asia are smaller by an order of magnitude: they are 33.9 per cent of regional GDP in Europe but only 3.5 per cent in Asia. But cross-border bank claims are strongly increasing in per capita income (a measure of economic development) even after controlling for economic size (real GDP in the lending and borrowing countries). Our results suggest that the very different levels of economic development in Asia and Europe, along with other differences in regional circumstance that are largely predetermined from the point of view of policy (the distance between countries, whether they share a common language, and whether they share a land border), explain a good deal – but not all – of the difference in financial integration between the two regions, so measured. In some specifications they even suggest that Asia is better integrated financially than Europe, other things equal – that is, adjusting for factors that are mainly predetermined from the point of view of policy.

33. The rest of the gap is explained by policy variables. Evidence that finance follows trade suggests that Asia is less financially integrated than Europe because it has done less to promote the growth of intra-regional trade. Intra-regional exports as a share of GDP are still only a third what they are in Europe. As ASEAN elaborates its free trade area and links itself to the other economies of the region, additional cross-border finance needed to grease the wheels of trade will presumably be forthcoming. Our results also suggest that controls on capital account transactions can have a lingering effect on the volume of cross-border claims, and that their shadow is longest where those controls were maintained for the greatest number of years. The underdevelopment of financial markets and institutions in some potential lending countries also appears to be an impediment to financial integration in the region; this too can be addressed by policy, in particular by initiatives designed to promote the growth of Asian financial markets.

34. Other factors sometimes pointed to as hindering financial integration in Asia appear to have little effect. Lower levels of financial

integration do not appear to reflect the long-standing problems of Japan's banks or to be the legacy of domestic interest-rate regulation. Nor do lower levels of financial regulation appear to reflect Asia's failure to follow Europe down the road to monetary unification or any obstacles to financial integration associated with Asian countries' move in the direction of greater exchange rate flexibility.

35. The message, in terms of future prospects, is mixed. Incomes in large parts of Asia, notably China, will remain significant lower than incomes in Europe for some years. Conventional estimates suggest that such differentials, now on the order of 80 to 90 per cent, narrow at the rate of two percent a year. Until that gradual process significantly shrinks the per-capita-income gap, Asia will almost inevitably continue to lag Europe in terms of financial integration. Of course, policies to promote intra-regional trade and to remove remaining restrictions on international financial transactions could force the pace of financial integration. But, as recent experience has demonstrated, quick liberalization also has a downside in the form of increased financial vulnerability. Better developed and integrated regional financial markets (in Asia, and elsewhere) can be part of the solution to this problem, but as the 1997 crisis reminds, they can also be a source of problems along the way.

**Table 1: Means of Explanatory Variables**

	Europe	Asia	US and Canada
BIS Claims Within the Region (current US\$) <sup>1</sup>	3.01E+12	2.33E+11	2.26E+11
BIS Claims / GDP <sup>2</sup>	33.9%	3.5%	2.1%
BIS Claims / population <sup>3</sup>	6,414.47	126.54	722.33
GDP (constant 1995 US\$)	1.04E+13	8.49E+12	9.70E+12
GDP per capita (constant 1995 US\$)	470,062	132,776	540,538
Exports within the Region/GDP <sup>4</sup>	18.4%	6.7%	5.2%
Average of Domestic credit provided by banking sector (% of GDP) <sup>5</sup>	73.6%	130.8%	125.5%
Average of Annualized Standard Deviation of Cross Rates within the Region <sup>6</sup>	6.2%	13.0%	6.2%
Average of Number of Years of Financial Liberalization, 1990-1997	7.4	7.0	8.0
Average of Number of Years without Capital Controls, 1990-1999	6.6	4.6	10.0

## Notes:

- 1 Consolidated foreign claims of reporting banks on countries within the same region.
- 2 The ratio of total BIS claims and total GDP of countries within the region.
- 3 The ratio of total BIS claims and total population of countries within the region.
- 4 The ratio of total intra-regional trade flows and total GDP of countries in the region.
- 5 Unweighted average for countries in the region.
- 6 Unweighted average of sqrt(12) times standard deviation of monthly cross exchange rates between countries within the region.

**Table 2: Basic Regression Results**

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Value of Consolidated Foreign Claims of Country 1 on Country 2			Selection Equation	Log Value of Consolidated Foreign Claims of Country 1 on Country 2	
					Selection Equation	
Log of Product of Real GDPs	0.965** (26.678)	0.942** (25.374)	0.917** (24.302)		0.862** (21.990)	
Log of Product of Real GDPs per capita	0.201** (3.839)	0.229** (4.201)	0.198** (3.865)		0.253** (4.799)	
Log of Distance	-0.796** (11.465)	-1.039** (5.849)	-0.750** (10.956)		-0.961** (5.632)	
Common Language Dummy	0.916** (5.044)	0.764** (4.009)	0.970** (5.466)		0.727** (3.968)	
Land Border Dummy	-0.151 (0.524)	-0.251 (0.791)	-0.134 (0.470)		-0.128 (0.411)	
Intra-Europe Dummy		-0.606 (1.676)			-0.638 (1.835)	
Intra-Asian Dummy		0.146 (0.421)			0.587 (1.743)	
GDP (1995 Constant US\$)				0.001** (9.775)		0.001** (9.751)
GDP per capita (1995 Constant US\$)				0.001** (19.800)		0.001** (19.948)
Constant	-28.739** (16.985)	-25.912** (10.475)	-26.238** (14.496)	-1.983** (17.318)	-22.437** (8.959)	-1.918** (17.238)
Observations	645	645	1154	1154	1154	1154
R-squared	0.648	0.652				
F-Test b_asia=b_europe		6.364				
rho			-0.501		-0.656	
sigma			1.549		1.574	
lambda			-0.722		-1.032	

Absolute value of t statistics in parentheses; \* significant at 5%; \*\* significant at 1%

**Table 3: Extensions to the Basic Regression Model**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log of Product of Real GDPs	0.282** (4.749)	0.291** (4.894)	0.235** (2.669)	0.186* (2.562)	0.293** (4.566)	0.316** (5.432)	0.200** (3.185)	0.263** (4.379)	0.292** (4.890)	0.218* (2.82)
Log of Product of Real GDPs per capita	0.115* (2.360)	0.124* (2.528)	0.138* (2.316)	0.145** (2.668)	0.032 (0.555)	-0.072 (1.253)	0.09 (1.850)	0.145** (2.796)	0.121* (2.477)	-0.127 (1.81)
Log of Distance	-0.641** (3.990)	-0.640** (3.991)	-0.775** (3.741)	-0.735** (4.020)	-0.531** (3.172)	-0.689** (4.378)	-0.630** (3.959)	-0.608** (3.768)	-0.614** (3.819)	-0.638 (3.59)
Common Language Dummy	0.292 (1.693)	0.261 (1.513)	0.553* (2.546)	0.537** (2.857)	0.316 (1.906)	0.253 (1.508)	0.367* (2.136)	0.288 (1.674)	0.256 (1.482)	0.456* (2.72)
Land Border Dummy	-0.771** (2.728)	-0.744** (2.634)	-1.186** (2.863)	-1.031** (3.074)	-0.731* (2.575)	-0.767** (2.825)	-0.851** (3.027)	-0.736** (2.601)	-0.739** (2.616)	-0.700* (2.22)
Log Value of Bilateral Trade	0.897** (13.376)	0.893** (13.330)	0.949** (10.327)	0.981** (12.429)	0.890** (11.832)	0.841** (12.703)	0.980** (13.936)	0.916** (13.489)	0.898** (13.419)	0.760* (9.15)
Intra-Europe Dummy	-0.719* (2.243)	-0.713* (2.228)	-0.906* (2.271)	-0.834* (2.339)	-0.468 (1.410)	-0.863** (2.758)	-0.712* (2.242)	-0.571 (1.720)	-0.698* (2.174)	-0.431 (1.27)
Intra-Asia Dummy	-1.267** (3.873)	8.106 (1.542)	-1.256** (2.989)	-1.604** (4.295)	-1.070** (3.216)	-0.830* (2.506)	-1.639** (4.817)	-1.236** (3.776)	-1.197** (3.639)	-0.565 (1.54)
Bilateral Trade x Intra-Asia Dummy		-0.422 (1.787)								
Average Domestic Credit Provided by Banking Sector (% of GDP)			0.002 (1.117)							
Domestic Credit Provided by Banking Sector (% of GDP), alternative				0.005** (4.556)						0.003* (2.47)
Number of Years of Financial Liberalization In 1990-1997, Borrowing Countries					0.068* (2.046)					-0.004 (0.10)
Average Number of Years without Capital Controls in the 1990s						0.170** (5.595)				0.234** (6.52)
Dummy for Japan as the Lending Country							0.963** (0.601)			0.012 (0.03)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Annualized Standard Deviation of Monthly Cross Exchange Rates								1.581 (1.676)		
Flexible Exchange Rate Regime Dummy									-0.336 (1.838)	-0.167 (1.31)
Fixed Exchange Rate Regime Dummy									-0.203 (1.719)	0.120 (0.57)
Constant	-9.605** (3.843)	-10.187** (4.049)	-7.760* (2.116)	-6.663* (2.212)	-9.858** (3.531)	-7.445** (3.054)	-6.609* (2.530)	-10.085** (4.014)	-10.368** (4.076)	-0.507 (0.14)
Observations	643	643	420	501	543	602	643	643	643	422
R-squared	0.7296	0.7309	0.756	0.7545	0.6909	0.7619	0.735	0.7308	0.7315	0.7514
F-Test b_asia=b_Europe	3.5813	2.8214	0.8441	5.2795	4.248	0.0112	9.1886	4.9885	2.8959	0.17

Absolute value of t statistics in parentheses

\* significant at 5%; \*\* significant at 1%



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