BANKING INTEGRATION IN EUROPE

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Abstract

The paper studies the evolution and determinants of banking integration across European countries, including New Member States, with attention to the impact that the Euro might have on that process. It is the first time that banking integration is being studied using the data on international consolidated banking assets provided by the BIS. The paper also presents empirical evidence on the determinants of the flow of foreign banking assets across countries of the EU and the Euro area. Banking integration in Europe is still low but it progresses over time. The empirical evidence also shows that integration is affected by both, competitive and institutional conditions so it can not be viewed as a uniform and balanced process across all countries. Finally, evidence is provided indicating that the introduction of the Euro has changed the pace and trend of European banking integration.

1   Introduction

The creation of the Euro is an important step forward towards economic integration and the formation of a single market in Europe. A common currency is expected to have a special impact in the economic integration of European financial markets since it means a common monetary policy and a unique basic interest rate for the whole Euro zone. Instead of a dozen of fragmented national financial markets each with its own currency, the Monetary Union eliminates the national currencies, one of the main sources of fragmentation, and sets up conditions to create a unified financial services market for 12 of the 15 country members, now 25 since last May 10 Central and Eastern European countries were accepted as new members.

But as it is the case with non financial products and services, to remove technical and economic barriers to trade and flows of goods and services across European Union (EU) members does not mean necessarily that trade and cross country flows will actually take place. The creation of a single currency is made precisely with the purpose of increasing the economic benefits of larger markets, in terms of more opportunities for specialization and gains from trade. Several studies present evidence of potential gains of the economic integration, in terms of economic growth for equity and bonds markets, European Commission (2002), and for all financial markets, Guiso et al (2004).[1] Since these gains are substantial it is of interest to know if financial market integration is actually taking place, both for the whole financial markets and for individual segments, such as the banking sector.

This paper presents empirical evidence of cross country flows of banking assets in the Euro zone in the period 1999-2003, that is, the period when countries have lived with the single currency. The interest of the research is to evaluate the trend in integration of banking activity that can be inferred from the cross country flows and also investigate up to what extent the enlargement of the European Union with New Member States (NMS) can stimulate or slow down the process. Second, the paper responds to the question of whether a single currency has in fact fostered such integration, and, finally, it explores the institutional and economic forces that may enhance or limit cross countries flows of banking assets.

Our research uses data on cross country flows of banking assets published by the Bank of International Settlements (BIS) consolidated international banking statistics which, even though it is the most reliable public data on international banking assets, to our knowledge it has not yet been used for this purpose.[2] The measures of integration documented in the paper are country openness, which we define as the flow of assets from outside that enter into a national market, and internationalization of national banking systems, which we define as the flow of assets from banks of a given country to the rest of countries. Each of them is aggregated into European measures of openness and internationalization. Finally, distinct features of the paper are that it explains receiving and sending flows as a function of an array of institutional and economic country variables and those trends in asset

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1. This paper was first published as European Commission Economic Paper, Gianetti et al. (2002).
2. Papaioannou (2005) studies the determinants of international bank flows using BIS locational international banking statistics. Locational data refers to international financial claims and liabilities of banks resident in a given country, while consolidated data uses as creditor reporting basis the nationality (home country) of the lender on a worldwide consolidated basis, net of inter-office accounts (i.e. net of internal transactions between subsidiaries and the parent bank). We believe that consolidated data has several advantages to study banking integration, compared with locational data, since it provides a measure of the risk exposure of lenders' national banking systems and avoids double counting. One limitation of the consolidated data is that, to our purposes, it is only available since 1999.

flows among EMU and non-EMU countries are evaluated controlling for world wide trends in internationalization.

Research on European banking integration has been taken place for several years, some times sponsored by the European Central Bank (ECB) itself, as ECB (2003a) and Trichet (2003). Dermine (2002), Cabral, Dierick and Vesala (2002) provide a comprehensive empirical overview of cross border banking activity using data on prices and quantities and looking at wholesale as well as retail banking services. More recently, Baele et al (2004) present an overview of the state of financial integration in the Euro area, including, money, government bond, loan and deposit and equity markets, and the European Commission has established a regular monitoring of financial integration, European Commission (2004). Quiros and Mendizabal (2001), Danthine et all (2000) and Fernández de Guevara et al (2003) view banking integration mainly from the law of one price and convergence in interest rates and margins. On the other hand, Manna (2004) studies banking integration using cross border quantity flows for several banking assets using non consolidated bank level data, and calculating several measures of integration.[3] The dominant conclusion in these studies is that financial integration in general, and banking integration in particular, is evolving at a different pace across financial instruments and services. Integration appears higher in money markets and interbank markets and lower in retail banking.

Our paper uses flows of cross border activity with banking assets, but differs from previous research in European banking integration in that it uses BIS data on international assets. The data refer to flows from consolidated banks, a clear advantage to avoid double counting compared to using unconsolidated balance sheet data (see footnote 2). Second, the paper measures the effect of the Euro in the integration process controlling for the general trend in international flows of banking assets inside and outside the Euro and the European Union. Third, preliminary evidence is provided on institutional and economic forces behind integration, both for countries inflows and for countries outflows of banking assets. Four, in order to gain some insights in future developments after enlargement of the EU, the paper measures integration with and without New Member States. The analysis has the limitation that only data on aggregate flows is available and therefore the analysis at the level of several products as in Manna (2004), it is not possible.

We find evidence that cross country flows of banking assets in the Euro zone is progressing at a faster pace than the general trend in financial services integration world wide, an indication that the single currency is in fact stimulating the process. This is true for assets received from other Euro area countries. Second, the Euro alone is by itself an institutional factor that enhances integration after controlling for factors that tend to explain why outflows and inflows are more important in some countries than in others.[4] Third, banking services of NMS are already well integrated into the European Union and at this point in time the measures of integration give similar values when applied to these countries alone as when they are applied to the enlarged area. The main reason for this is that significant parts of the banking system of most of the NMS are already under the control of banks from EU-15 countries.[5]

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3. A more complete list of references to papers on European financial integration that goes further back in time can be found in Manna (2004). Rajan and Zingales (2003) view integration of financial markets within the context of banking versus non intermediated financial markets and convergence in models of corporate governance and control.
4. In the spirit of La Porta et al (1998), Beck et al (2001), Rajan and Zingales (2003) and Caprio et al (2003).
5. However, this may create new supervisory challenges. See Magyar Nemzeti Bank (2004) and Quinn (2004), for supervisory challenges, and see Claessens et al. (2000) and Crystal et al. (2001) for a review of the benefits of foreign ownership of the banking system from the point of view of regulation and prudential supervision.

The rest of the paper is structured as follows. Section 2 contains a discussion about the meaning and evaluation of banking integration. Section 3 describes the indicators used in this paper, and analyze their evolution over time in the period of study. Section 4 reviews some of the economic and institutional factors behind banking integration, and presents evidence about the explanatory power of these factors to account for differences in openness and internationalization of European countries. Section 5 draws some policy implications of the findings for banking supervisors. Finally, section 6 concludes the paper.

2 Meaning and evaluation of banking integration

The introduction of the Euro is one of the many, although especially important, steps towards what has been called the Single European Market. Broadly, a "single market" means that all buyers and sellers within the boundaries of the Union have ex ante equal opportunities to trade among themselves, independently of the country in which buying and selling takes place. A single currency contributes to the creation of a single market if it increases the number of buyers and sellers that can potentially enter into profitable transactions and/or it evens the opportunities to transact towards the more favorable ones in terms of welfare creation. The Euro is expected to make this kind of contribution as long as it eliminates the exchange rate risk; increases price transparency and, overall lower transaction costs.[6]

Financial markets and banking markets, in particular, share the common potential benefits of a single currency and have other especially relevant ones. The introduction of the Euro goes together with the creation of a European Central Bank in charge of the monetary policy decisions for the whole Euro-countries. This means the same basic interest rate for all country members and, if there is one price, there must also be one market (single interbank market). Second, the reduction of transaction costs will stimulate trade more intensively in those goods and services that have lower transportation or other costs originated from the physical movement of goods and services. Financial transactions are, in many cases, virtual transactions as they imply book keeping notations but no physical movements of goods and services at all, so lower transaction related costs (contractual costs) should have a positive effect in stimulating trade of financial services. Not all, of course, since for many customers there are high perceived benefits from physical proximity and face to face transactions for example in retail banking activities and relationship lending between banks and firms. According to Guiso et al (2004) European financial integration will accelerate the development of the most backward financial markets and this development can produce a sustained additional growth of GDP in the EU countries of 0.2% yearly.

European financial and banking integration can then be viewed as a process converging into a single market for financial/banking products and services, where all buyers and sellers within the Union have opportunities to transact in the most favorable terms. The Euro and the removal of regulatory and institutional barriers to trade and to cross-country investments can stimulate banking integration, but there is also interest in knowing if expectations are actually fulfilled. In this respect, studies on banking integration have focused on ex post evaluation of the actual progresses being made towards the single market, looking at price convergence and at the actual flows of goods and services.

A single market must be matched by only one price for the product that defines the market. The so-called law of one price is the benchmark for studies on banking integration that focus on interest rate convergence after the Euro; Quiros and Mendizabal (2001), Fernández de Guevara et al. (2003), Baele et al. (2004). Less interest rate dispersion among countries together with convergence towards the lowest prevailing interest rate in loans and the highest in deposits will confirm that the Euro stimulates banking integration and increases social welfare.

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6. Baele et al. (2004) define an integrated financial market as a market where all potential participants with the same characteristics, i) face a single set of rules when dealing with financial instruments or services; ii) have equal access to the services and iii) receive an equal treatment. They propose a number of measures to evaluate the state of the evolution of financial integration in money, corporate bond, government bond, credit and equity markets, that are partially inspired in those proposed by Adam et al. (2002) on their report for the European Commission.

Tests of the law of one price require a proper definition of the relevant market. Consumers' transportation costs and potential gains of relational banking create conditions for geographic market segmentation so that in the case of retail banking the relevant market can be a local area grouping several bank branches. Second, product differentiation efforts and investment in borrowers' and depositors' specific information by banks, in response to the increase in competition, can "customize" the banking relationship and increase interest rate differences among banks, Boot and Thakor (2000). Finally, interest rate dispersion among EU countries will be sensitive to the evolution of the monetary conditions and, in particular, to the evolution of the interbank interest rate. The latter can distort the conclusions of interest rate converge due to the single currency effect. To see this, notice that the equilibrium profit maximizing interest rate of deposits in market i, assuming Cournot type competition, will equal to,

$$R_{di} = R \frac{n_i \varepsilon_{di}}{n_i \varepsilon_{di} + 1}$$

where R_{di} is the equilibrium interest rate in deposits in country i, n_i is the number of banks in the market, ε_{di} is the supply elasticity of deposits and R is the interbank interest rate, the same in all Euro countries after the introduction of the single currency (we assume zero marginal operating costs). The standard deviation of R_{di} can be used as a measure of interest rates dispersion.

Once the interbank interest rate R is the same in all countries dispersion of interest rates is explained in terms of differences in structural conditions, number of banks, elasticity of deposits' supply, across markets. If R remains stable over time and the Euro creates positive conditions for convergence in structural conditions across markets, then the introduction of the Euro will coincide with the start of a process of convergence in interest rates. But notice that for given structural conditions dispersion of interest rates across countries varies over time with changes in the interbank interest rate R. Before the Euro, dispersion in interest rates across EU countries reflected both, differences in structural conditions and differences in interbank interest rates. After the Euro interbank interest rate differences disappear and for this reason some convergence in interest rates can be expected even if the structural conditions in each country remain unchanged. The observed decreasing trend in the interbank interest rate set by the ECB in recent years also has to be accounted for to explain convergence in interest rates across countries beyond potential changes in structural conditions.

Studies of banking integration focusing on quantities instead of prices base their conclusions on the expected changes in equilibrium market shares when the enlargement of a market coincides with a change in the comparative relative competitive advantages of the firms in old markets, Manna (2004). Under the same Cournot competition conditions assumed above, equilibrium market shares of deposits of banks in a market will be inversely related to marginal operating costs, i.e. more efficient banks will have larger equilibrium market share. If initially segregated national banking markets evolve into a single market, national banks will start to compete and those more efficient will gain share at the expense of the less efficient ones. Cross border flows of deposits may be observed in response to the new competitive conditions, which just reflect the transition from the old to the new equilibrium. To make effective the potential gains in share, more efficient banks may have to undertake direct foreign investment, for example open branches or to purchase existing

branch networks in the country they are entering, that will also be part of the cross countries flows of banking assets.

From this perspective, and assuming that before the Euro and before the true economic conditions for a single market the differences in efficiency among banks of different countries were important, banking integration will be far away from symmetric flows of banking assets across countries. Rather, flows towards countries that have more efficient banks should increase at the expense of those with more inefficient ones. The new structure of banking markets in the enlarged European market can differ from the old in many ways, including number of surviving banks and their respective specialization in segments of banking products as a function of their comparative competitive advantage in each of the segments. Universal banks may divest some activities in which they are not competitive and concentrate all the efforts in a core of services in which they are particularly efficient, to the point of becoming more specialized in products but more diversified in geographic markets.

In this scenario, equilibrium interest rates of homogeneous products will be the same in all banks, although each of them can have different market shares and profits. If economic markets extend beyond country borders then convergence in interest rates among countries will just reflect the characteristics of the market. But if banks differentiate products and cost is no longer the only source of competitive advantage then market boundaries are difficult to identify and the interest rate differences among banks and countries may persist even if there are cross-country flows of banking assets. Finally, high differences in efficiency among banks may incentive spur mergers and acquisitions and increase concentration in certain product and geographic markets even if the total market has enlarged. The efficiency effect behind market concentration will also push towards more favorable interest rates from a welfare point of view, but collusion practices can be easy to implement in markets with less number of competitors. Thus, the net effect of banking integration from the perspective of the cross-country flows of banking assets is an open question.

As indicated in the introduction, this paper focuses on flows of banking assets across EU countries to calibrate banking integration in the Euro era. The main purpose of the exercise is to provide evidence of the amount of these flows without making any welfare inference of this evidence. The underlying assumption is that the Euro creates conditions where more efficient banks can gain market share over less efficient ones and, as a result, there will be an increasing trend in cross country flows of banking assets in the Euro area in the process towards the new equilibrium. More flows will be interpreted as an indication of higher integration, assuming that the opportunities for reallocation of assets are high because the initial differences in efficiency are also high.

3   Some quantity indicators of European banking integration

So far, flows of banks' assets across European countries have been approximated in different ways, for example interbank exposures, deposits, loans, shares and securities holdings, branches, mergers and acquisitions.[7] However, there is another piece of information that potentially might be useful for this purpose but has been ignored so far. That information comes from BIS reporting on foreign assets by banking systems of developed countries. Those assets are broken down by country of destination (i.e. not only contains information across developed countries but also of banking assets held in emerging markets by, mainly, banks of developed countries). In this section, some indicators of international activity at the country level and for the Euro area and the European Union as a whole are presented, together with measures of them for the years 1999 to 2003.

The assets reported by banks to BIS are financial assets. Thus, they include government debt held by banks as well as interbank exposures and loans to the private sector plus equity of financial and non-financial firms. The data is reported at a consolidated level. Therefore, cross operations between the parent bank and its subsidiaries abroad have been properly eliminated. That is very important in order to avoid double counting of foreign assets. An individual or solo bank approach might bias the amount of foreign assets abroad. For instance, if a parent bank lends funds to a subsidiary or a branch in a foreign country and that subsidiary or branch uses the funds to make loans in that country, individual reporting might add up both the assets of the subsidiary or the branch and the loan from the parent to fund the assets being hold in that country. On the contrary, a consolidated approach will net out the flow between the parent and the subsidiary and avoid double counting of foreign assets; which is an important advantage of consolidated statistics versus locational statistics. Moreover, BIS data is reported by banks and does not include, for instance, assets of money market mutual funds.

Country breakdown of foreign assets, both at the level of reporting and non-reporting countries, is only available since 1999. Thus, it is not possible to determine a direct impact of Euro on banking integration from this data. However, we are more interested in medium term trends since the impact must be not of an impulse-type but, rather, more progressive through time.[8]

The introduction of the Euro is likely to modify the amount of foreign bank assets held in other Euro zone countries. Since January 1999 exchange rate risk disappeared, so banks might be keener to hold debt or equity issued in other Euro countries. Moreover, they might be less reluctant, for the same reason, to lend to foreign banks operating in the area. For the same token, and since integration is a two way process, countries will receive more banking assets from abroad than when each country had its own currency. Absolute indicators might be influenced by the general trend in bank assets, both domestic and foreign. Therefore, we should focus on relative magnitudes (i.e. percentage of foreign assets over total banking assets or GDP).

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7. See, in particular, Cabral et al. (2002), Baele et al. (2004), Manna (2004) and European Commission (2004).
8. Rajan and Zingales (2003) test quite crudely the impact of euro using a dummy variable that takes de value of 1 from 1999 onwards and 0 otherwise. Thus, their hypothesis is that the euro has a sudden and permanent change. However, it seems more reasonable to expect that the institutional framework changes only slowly to the appearance of the Euro, in particular in banking markets (out of interbank and, to a lesser extend, wholesale markets).

Some indicators of European banking integration: outflows and inflows of banking assets relative to total banking assets and GDP

The first indicator of cross border activity, I1, is the amount of bank assets of a given country that are owned by foreign banks, over total banking assets of the receiving country. The second indicator of cross border activity, I2, measures the assets held abroad by banks of a given country, relative to the total banking assets of the sending country. The indicator I1 gives an indication of the degree of *openness* to foreign banking activity of a particular country, while I2 indicates the *internationalization* of the banks of a given country.

Total assets of each national banking system are only available, in a homogeneous way, for EU countries and only up to 2002.[9] In order to expand our field of comparison and see if developments are different among Euro zone and/or EU countries and the other developed countries that report information to BIS on foreign assets, we modify the indicators I1 and I2 to normalize the absolute flows in terms of GDP instead of total assets, since data on GDP is available for all countries. When necessary, the indicators normalized by the GDP of the country will be identified as I21 and I22, respectively.

From Table 1, Panel A, column *Received,* we see that the amount of "openness" of national banking systems to foreign bank assets from other euro area or EU-15 countries (I1) is relatively low. The weighted average of national figures, which can be considered a measure of European integration that takes into account the size of the receiving country, is around 10% during the period under study. However, the simple average is around 15% indicating that smaller countries are more open than larger ones, as one could expect. In particular, France and Germany appear as countries quite closed to the presence of foreign banks, since their figures of openness are quite below the average. Nevertheless, in weighted (simple) averages there is a tentative trend towards more open banking systems in the Euro area starting from 1999, since assets received from foreign banks of other Euro area countries were 8.6% (13%) of the total banking assets of the country in 1999, and go up to 11.1% (17%) in 2002.

Regarding the foreign assets that banks from a country hold in the other Euro area countries, (I2), from Table 1, Panel A, column *Sent,* again the average level is low and there are less differences across countries according to their size (simple and weighted averages are quite similar). Belgium and Netherlands, two small countries with some large *bancassurance* groups operating in both countries, are the two countries clearly with more internationally active banks in the Euro zone. Again, a tentative increasing trend towards internationalization can be perceived, from 8.6% in 1999 to 12.1% in 2002.

If the whole European Union is considered, bottom of Table 1, Panel B, integration measures increase in value around 2 percentage points (pp) and also show an increase along time. In particular, UK, one of the major world financial centers, appears as integrated as the rest of the EU countries, specially in terms of bank assets received, I1, but much less in terms of banking activity abroad, I2. Moreover, Sweden and UK show no trend in the measures of integration over time.

Data in Table 1 is summarized in Chart 1, which also includes the average aggregate measure of integration computed with GDP as normalization factor in order to provide preliminary information about the integration trend in year 2003. The observation of the chart,

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as well as the country level data not reported to save space, confirms that in year 2003, the trend of banking integration continues at the pace initiated years before.

Table 2, constructed in a similar way as Table 1 with GDP as a normalisation factor, allows us to compare observed trends in internationalization within the European Union with trends in all developed countries. Large developed countries as Japan and USA are relatively closed countries as they hold abroad, among developed countries, fewer assets than large European countries. Japan appears more active sending assets abroad than receiving them, while for the USA the reverse is true. In this larger sample of countries UK shows a similar proportion of banking assets sent and received. In any case, Table 2 confirms that the trend towards more banking integration is common among developed countries, evidence that should be taken into account when evaluating the effect of Euro in such integration.

Overall, Tables 1 and 2, as well as Chart 1, show a low, in particular for large countries, although increasing trend towards banking systems integration. That effect is quite clear among European Union countries and Euro area countries as well.[10]

New Member States

Regarding New Member States, we only have information of the flows received from developed countries and not from the flows they send abroad. Nevertheless, the latter are probably much less important in quantitative terms since banks from those countries are mainly local and, more importantly, the foreign ownership of those banks is quite high. In four of the countries the market share of banks owned by foreigners is above 85%, while in 3 countries is around two thirds. Only the banks in the smallest countries, especially Malta and Cyprus, seem to have maintained their independence.[11] Again, we only have data from 1999 onwards and we can only compute the indicators based on GDP measures since we do not have total banking assets of the countries along time.

Table 3, Panel A, shows that New Member States, in simple average terms, tend to receive a similar percentage of foreign assets as Euro zone countries. However, in terms of weighted averages, the importance of the flows received is higher (around 10 pp the last three years). If we take into account that the relative weight of total banking assets in terms of GDP is much higher in the Euro zone countries [Caviglia et al. (2002)], this is an additional indication of the importance of foreign assets in the NMS banking systems.

Table 3 also shows that there is a clear trend towards an increase in the openness of these countries that might reflect the growing interest of Euro zone banks in those emerging countries that, finally, joined the EU in May 2004. In this sense, it is interesting that in 1999 and 2000 simple average is higher than weighted average, an indication that small countries were receiving more banking assets. Nevertheless, differences between simple and weighted average have vanished over time, an indication that bigger countries have become also an attractive destinations of funds for Euro zone banks.

Table 3, Panel B, shows even higher degrees of openness when we take into account those countries members of the EU-15 that are not in the Euro zone. In particular, the increase is more significant in the Baltic Republics (as a result of the flows coming from Sweden) and Malta (from UK) for geographical and historical reasons. Finally, openness

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10. Papaiaoannou (2005), with BIS locational statistics, also finds evidence of increasing banking integration in Euro countries after the introduction of the single currency.
11. See, Caviglia et al. (2002).

increases a few percentage points when we add the flow of funds received from all developed countries as shown in Table 3, Panel C.

Chart 2 shows that among developed countries, those from the Euro zone are the ones that have more foreign assets in NMS. The historical relationships between those groups of countries coupled with proximity, which helps to explain higher flows of economic transactions, might be the explanatory factors. However, some banks from countries with less historical relationships are also present in New Member States while other internationally active banks from large countries have not shown much interest until now. Belgian and Austrian banks have been very active in relative terms (Table 4) while German, Dutch, Italian and French banks have a lower penetration, in terms of their GDP. Spanish banks have played a marginal role.

The former result is, partially, the result of the different strategies of internationalization carried out by banks. Austrian, Belgian, and Finish banks concentrate in NMS more than half of their foreign assets in emerging markets (Table 5). Moreover, that percentage has increased systematically and significantly since 1999. On the other hand, Dutch, French and German banks concentrate in Eastern Europe less than one third of the foreign assets in emerging markets. It seems that, banks from smaller countries, which may appear initially as less internationally active banks, are trying to exploit competitive advantages focusing increasingly in New Member States while larger banks from larger countries follow a more diversified strategy with a significant presence in all the markets.

NMS in the portfolio of foreign banking assets of banks world wide

The internationalization strategy of banks can separate foreign investment decisions that involve developed countries and decisions involving emerging ones. In order to provide additional evidence on how the enlargement of the European Union can affect banking integration it may be of interest to evaluate the flow of banking assets to NMS in the context of investment strategies towards emerging countries. The study of global portfolios of foreign banking assets of the countries we follow in this study may provide some valuable information in this respect.

Table 6, Panel A, shows that since 2000, one year after the introduction of the Euro, Euro zone countries are concentrating the flows of funds sent abroad in other Euro zone countries (from 30.8% in 2000 to 35.3% in 2003, simple average) while almost maintaining them in the rest of EU-15 countries (at least, in weighted averages), or even decreasing in other developed countries and in emerging countries. However, regarding the group of emerging countries, only the relative weight of funds sent to emerging countries in Europe and, in particular, to New Member States, has increased.

When we consider the foreign assets sent abroad by EU banks, some of the former developments are less clear cut. In general, the increasing importance of foreign assets in New Member States banking systems declines since other emerging markets seem to be attracting funds from European banks (Table 6, Panel B). Finally, when we add all the developed countries, the weight of total foreign assets in New Member States is much lower although it still shows an increasing trend (Table 6, Panel C).

The tentative conclusion has to be that NMS become relative more attractive to foreign banks within the group of emerging countries as the expectations that they will join the European Union consolidate over time and they are finally fulfilled.

Statistical significance of the observed trends towards an increase in internationalization and openness

The last step in this examination of the trends in inflows and outflows of banking assets is to test for the statistically significance of the observed trends over time. Since internationalization of banking activity can be a global phenomena the trends in the flows among Euro zone countries can just be part of a general trend in internationalization. The methodology used to isolate the Euro effect is a simple linear regression where the dependent variable is the outflow (inflow) of bank assets divided by the country GDP of the country every year from 1999 to 2003, and the explanatory variables are time and country dummies, together with a cross effect that allows for differences in the coefficients of the time dummies of the Euro countries over time. The analysis will account too for possible differences with NMS. In particular, we define a Euro dummy variable (i.e. 1 if the country is member of the European Monetary Union, 0 otherwise), and a MNS dummy variable (i.e. 1 if the country is a NMS, 0 otherwise) that multiply the time dummies so their respective estimated coefficients will determine differences of Euro (NMS) relative to the rest of the world. The results of the regression estimation are presented in Table 7.

The analysis shows that the Euro Area attracts banking assets at a higher increasing rate than the rate of other developed countries (column 1). The inclusion of New Member States does not change the former conclusion regarding received foreign claims (column 2). However, column 3 shows that there is not a statistically significant effect for NMS and the increasing trend observed in the flows they received must be considered in the context of a global trend of openness among the countries considered.

When explaining the banking assets sent abroad by the banks in a country the effect is not statistically significant. As it will be confirmed later on, this is evidence of some asymmetries in the flows received and sent across countries.[12]

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12. Using disaggregated Spanish data we have investigated to what extend the trends in banking integration concentrate in interbank money market flows. Although the interbank market is the most integrated, the general conclusion about a steady trend in integration for the rest of the products remains unchanged.

4 Determinants of banking integration

4.1 Some tentative hypothesis about determinants of banking integration

Even if trade and monetary barriers are levied, economic integration may not be a natural phenomena as account has to be taken of the incentives of the economic agents to go abroad, of the institutional conditions of the countries of origin and reception in terms for example of property rights protection and, specially in the case of banking markets, the influence of regulation. Moreover, these factors may play a different role to explain integration in terms of assets sent abroad than in terms of assets received. This section presents some tentative hypothesis on factors that can explain the differences observed in the inflows and outflows of banking assets in the process of internationalization.[13] Next we will provide some evidence on how such hypotheses are consistent or not with the empirical data.

Efficiency and competition considerations

The *size* of the country explains differences in the level of trade. Large domestic markets allow domestic firms to grow within the country boundaries even in sectors where scale economies are important. Domestic firms in small countries, on the other hand, will have to go abroad to gain scale and lower costs producing higher level of output. In general, trade, imports and exports, represents a larger share of the GDP in small countries than in large countries. In the present context of banking integration a reasonable assumption is that large countries will also have relatively larger domestic banking markets and therefore the proportion of foreign banking assets in the country will be lower than in small ones. On the other hand, all the rest equal it could be expected that small countries will send relatively more banking assets abroad than large ones.

In a competitive market, the market share of the firms is determined by their respective level of competitiveness. Within Europe, some countries have more bank oriented financial systems while other countries have more capital markets oriented ones. Presumably more *"bancarised"* countries will have a comparative advantage to send banking assets abroad, while it will be more difficult to countries with less expertise in banking to gain market share in the countries with highly efficient banking systems. Under these assumptions it is expected that the share of foreign banking assets will be lower in countries with higher "bancarisation", while this variable will be positively associated with the proportion of banking assets sent abroad.

Another important premise of the theory of *competition* is that markets where incumbent firms earn extraordinary profits attract new entrants, while exit of competitors is more likely in more competitive markets than in less competitive ones.[14] Moreover, a very competitive national banking system might act as a barrier to entry of foreign competitors. If the banking system witnesses strong competition among national incumbents, the prospects for foreign new entrants are bleak. However, on the other hand, extraordinary profits can last longer if the incumbents build effective barriers to entry (i.e. a dense network

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13. For a more general approach to the determinants of international bank flows, within the conceptual framework of trade gravity models see Papaioannou (2005).
14. See Tirole (1988) and Freixas and Rochet (1997) for a detailed discussion of this issue and for further references.

of branches, close bank-customer relationships, and high switching costs as a result of convenience and proximity, and so on).

Banks in more competitive domestic markets might seek international expansion in order to increase efficiency (more assets with similar costs as in cross border lending) or to diversify their loan portfolio in order to gain room for more risk taking and, thus, increase profitability,[15] which is more in line with local activities carried out through subsidiaries. On the other hand, to expand abroad might be highly demanding in terms of funds needed to enter into the foreign market (i.e. before the bank acquires a critical mass it must be prepared to sustain losses or, if it buys a foreign bank in difficulties it will be necessary to invest significant amounts of money). Thus, it might be that less competition at home helps international expansion.

So, the impact of competition (or lack of it) in banking integration might be the opposite depending at which side of the coin we are looking at although the final impact is, in both cases, an open question that should be tested empirically. In this paper the structure of the national banking market will be approximated by the Herfindahl index of concentration. For a given number of firms, a higher value of the index implies more opportunities for collusion among incumbent firms and, thus, less competition. But very often concentration is endogenous and in markets with sunk costs higher competition derives into more concentration, Sutton (1991). The interpretation of the empirical results will have to account for these alternative meanings of the concentration variable.

Preferences, regulations and rule of law[16]

Ownership structure of banks might have also an impact on the incentives and capabilities of local banks to expand abroad or in terms of attraction to foreign banks. State owned banks might have more difficulties in being accepted abroad or less incentive to expand. On the other hand, since state owned banks have, at most, no competitive advantage regarding privately owned banks, foreign banks might see an opportunity to expand their activities. Family owned banks might be less interested in foreign expansion since, usually, that would mean more demanding capital requirements and, sooner than latter, equity issues that will dilute ownership and control of the bank. On the contrary, a widely held bank (i.e. one which has no shareholder in the position to control the bank) might have more incentives (including expense theory or agency arguments) to expand abroad and more capabilities since they can tap equity markets easily (i.e. managers have less binding constraints). On the other hand, a banking system were widely held banks are prevalent could be more friendly to foreign banks that one where family or state banks dominate the landscape.

At some point in time *banking regulators* may be more or less prone to allow their national banks to enter other banking markets or, probably more relevant, more or less reluctant to allow foreign banks entering the local market. Prudential concerns might be a reason to restrict international expansion. Some regulators, those less independent of the government, might be interested in protecting national banks from foreign competition, either in order to favor the development of "national champions" that can play a leading role in

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European markets or to protect vested interest of local banks. The less independent the higher the probability of interfering in market forces leading to integration of banking markets.

The legal system has a well known effect on the development of financial systems and economic growth. Papaioannou (2005) provides recent evidence in this topic for international bank flows. It might be the case that banking systems pertaining to countries with *high standards in terms of law* enforcement, accounting standards, judiciary efficiency, shareholder protection and business ethics attracted more international banks than those in the opposite side.

4.2 Empirical analysis

The impact, if any, of the former elements is an empirical question that can be tested with the available data. The empirical model to be estimated in order to test the theoretical predictions outlined above will be formulated as follows:

$$I(i)_{ct} = C + \alpha_1 SIZE_{ct} + \alpha_2 BANCAR_{ct} + \alpha_3 HERF_{ct} + \alpha_4 WIDE_c + \alpha_5 INDEP_c + \alpha_6 RULE_{ct} + \varepsilon_{ct}$$

As previously explained, *I(1)* represents the total banking inflow of assets received by the country over total banking assets of the country banking system, while *I(2)* is the total banking assets sent outside the country, over total banking assets of the country. The actual values of these variables are presented in Table 8.

The variable *SIZE* is used to account for the relative size of the country and it is measured by the GDP of country c in year t over the sum of all GDP in year t for the countries in the sample. The variable *BANCAR* is equal to the ratio between total banking assets of the country c in year t and the country and year GDP; it measures the relative importance of banks in the financial system of the country. Variable *HERF* is the Herfindahl index of concentration of the bank assets of country c in period t, calculated from raw data published by ECB (2003b). The variable *WIDE* expresses to what extent the ownership of the banks of country c is concentrated or dispersed, where higher values of the variable imply higher dispersion of ownership; the actual values of the variable are taken from Caprio et al. (2003). *INDEP*, also from Caprio et al. (2003) is the degree of independence of the banking supervisor from the Government. The variable *RULE*, from La Porta et al. (1998), is again a categorical variable that provides an assessment of the law and order tradition in the country.

The empirical model will include time period dummies to evaluate the trend of integration within the period under study taking into account the other explanatory variables of the model. It can be applied across Euro zone, EU and developed countries. However, since there is no easily available information on banking structure variables outside the EU[17] and we are mainly concerned about integration across European banking markets and the impact of Euro, we focus on the two first areas. In particular, expanding the regressions from Euro zone countries to EU countries we are able to test if the Euro has had a positive impact on banking integration by introducing into the model the variable EURO that takes the value of 1 if the

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17. Moreover, we could also take into account flows towards emerging markets (although there is no data of inflows from those countries to developed countries) in general or across several regions (i.e. Central and Eastern European Countries or Latin American countries).

country belongs to the Euro zone and zero otherwise. If the coefficient of the EURO variable is positive, it means that a single currency enhances banking integration.

When the model is estimated for the sample of EU countries, the explanatory variables include also the dummy variable UK that takes the value of 1 if the observation corresponds to the United Kingdom and 0 otherwise. This variable controls for the fact that United Kingdom has a highly differentiated market-oriented financial system, compared with the rest of the countries of the sample.

The following results should be taken with caution since the number of observations is quite limited (around 40 country-year for Euro zone and 52 for EU). We have focused on the significant variables only in order to increase degrees of freedom. Despite that, adjusted R^2 are not very high, in particular for the outflows model. Certainly, the estimation results are a preliminary exploration of trends and explanatory variables. Nevertheless, taking into account the former important caveat, some preliminary conclusions arise which might be useful in shaping policy recommendations.

Euro zone

Table 9, first column, shows that size of the country is negatively correlated with the proportion of foreign banking assets in the country, and evidence that may be parallel to the observed fact that smaller countries are more open to foreign trade and investment. Secondly, countries more bank-oriented receive less foreign banking assets confirming that more efficient national banking systems attract less foreign competitors. Also, countries with more concentrated banking systems are less attractive for foreign banks, than countries otherwise (the variable Herfindahl is negatively associated with bank assets received). That might be an indirect evidence of the existence of effective barriers to entry into national banking markets. A banking system with banks not in the hands of few shareholders but, instead, widely held seems to be more contestable to foreign banks. Supervisory dependence of the government and lack of rule of law are strong entry barriers for foreign banks. Moreover, time dummies significantly register a growing trend in terms of penetration of banking systems by foreign banks in the Euro area. The hypothesis on determinant of inflows of banking assets are in general confirmed by the data and within the economic and institutional environment of the different countries the introduction of the Euro has a positive and significant effect in increasing the flows of banking assets over time.

Table 10 refers to the determinants of outflows of banking assets. The variables INDEP and RULE are excluded as explanatory variables since they are not relevant to explain sending banking assets. As it was expected, the signs of the coefficients of the rest of economic and institutional variables are just the opposite as those of Table 9 which shows the determinants of receiving banking assets. Larger and more "bancarised" countries allow for larger banks in the domestic market and larger banks have more tangible and intangible assets to expand internationally. Apparently, more concentrated national markets facilitate the accumulation of slack resources, and more profits, that make easier the expansion abroad. The evidence would be consistent with the hypothesis that intense competition forces bank concentration, and surviving banks are in better conditions to expand to foreign markets, but this conclusion should be validated from larger and more representative data. The time dummies show coefficients with an increasing trend but they are not statistically significant.

European Union-15

Table 9 and 10, second columns, shows the results of estimating the former two equations to the whole EU countries. It can be seen that all the variables keep their signs and level of statistical significance, with the exception of WIDE in the estimation of outflows for the Euro area countries only (Table 10).[18] Therefore, the main conclusions above for the case of the EMU alone are basically confirmed, including the increasing time trend. In fact, when an interactive variable is defined in terms of TIME and EURO, the estimated coefficients corresponding to assets received are positive and significant, while the coefficient for the TIME dummies are not significant.[19] This clearly indicates that Euro countries are in a positive trend of integration while in the other three, Sweden, Denmark and UK the trend is not detected.

Both, the EURO dummy and the UK dummy variables show coefficients positive and statistically significant in Table 9. This means that countries in the Euro zone receive more bank assets on average than non Euro area countries. However, on average for the period, the coefficient for UK shows that this country is more open to foreign banks than the Euro zone, although the gap is closing as the positive trend in the TIME x EURO variable shows.

In a similar vein, second column of Table 10 shows that bank outflows are positively affected by the Euro since the coefficient of the variable EURO is now positive but the coefficient of the variable UK is negative and statistically significant. On average, UK, Denmark and Sweden hold less banking assets in other EU countries than countries in the Euro zone, on average. The coefficients of the interactive variable TIME x EURO (not reported) also show an increasing trend for the Euro area.

Unfortunately, lack of data from NMS prevent us from quantifying the determinants of openness of their banking systems. In any case, as mentioned in section 3, the fact that foreign ownership of banks is quite high in many of those countries is a new factor that should be considered.

From our previous analysis it can be observed that there is a certain degree of asymmetries between the flows received and the flows sent across countries. In particular, the impact of the Euro appears to be higher in the banking assets received. Table 6 offers a possible explanation for this question. It seems to be the case that, since the introduction of the Euro, the level of flows sent by Euro zone countries has not experienced a significant increase. However, those countries may have reorganized the structure of their portfolios, increasing, as Table 6 shows, the relative importance of other Euro zone countries.

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18. We do not have an explanation for this change in sign for the estimated coefficient of WIDE.
19. Not reported here. The reader interested can ask the corresponding author for those regression results.

5   Policy discussion

Several issues arise from the former descriptive and econometric results. Banking integration across European countries, in terms of foreign banking assets, is low. Given the increasing evidence of high integration of interbank and, to a lesser extend, of wholesale banking markets, that result points towards the lack of integration of retail banking markets. If that is the result of remaining cross border country barriers (i.e. differences in taxation, regulation, idiosyncrasy) or, on the contrary, is the natural result of an activity that, mainly, could be considered non-tradable, in the sense that relationship banking for non-financial firms and high switching costs (enhanced by proximity services provided by dense branch networks) for households lead, naturally, to a low level of integration in terms of retail banking activities and, more generally, in terms of foreign banking assets, deserves further attention. However, the fact that the level of international activity across countries seems to respond to institutional as well as competitive and technical factors opens new ways to promote policies that would enhance integration such as regulatory independence at each country level, together with more open forms of bank ownership.

More difficult recommendations can be made with regard to competitive conditions in national countries. On the one hand, there appears to be efficiency gains from absolute and relative size of the national banks that may explain why larger and more concentrated banking systems send more assets abroad, but at the same time the possibility that such structure of national champions be the result of strategic national barriers that contribute to perpetuate national concentration and higher profits is also a possibility. In any case, the point is that bank concentration can result from efficiency reasons in a competitive environment, and can not be considered *per se* evidence of lack of competition (i.e. more efficient banks take over less efficient ones with an increase in concentration as a result).

The second result is that Euro seems to enhance banking integration. That might be the result of interbank assets but also the higher willingness of banks to explore new country markets trying to carve out a niche in specialized lending to households or non-financial firms. In terms of medium term strategies it could be also a way to take positions in foreign markets in order to be ready for future mergers and acquisitions. Some large Spanish, Dutch or German banks are buying small specialized lending firms or developing branch activities based on new technologies. This practice explains some of the asymmetries observed in the flows across countries, in the sense that all countries send assets abroad in amounts proportional to their respective sizes, but in terms of receiving assets small countries receive proportionally more than large ones.

Regarding New Member States, in general, they have a larger degree of openness that some EU-15 banking markets. The expectations about joining the EU, already materialized, as well as expectations about joining the EMU, might have triggered across European banks an increasing interest in being present in their banking markets. At the sametime, historical and geographical reasons (i.e. proximity) or particular strategies of some large European banks are some of the driving forces behind the higher and increasing openness of these countries.

Some academics sustain that banking trends in Europe pointed towards the need for a unified banking supervisor, in particular, in the Euro zone but, probably, outside the

European Central Bank.[20] If we take into account the actual low level, albeit increasing along time, of foreign banking assets across European countries, a cooperative solution among supervisors seems more appropriate, at least for the time being. That cooperative approach is in fact the one that prevails now in Europe through the Banking Supervision Committee (BSC) of the ECB and through the recently level 3 Committee of the European Banking Supervisors.

Despite the limited data availability, the line of research that is opened with this paper seems promising, in particular regarding the integration of NMS banking systems and the integration of European banks in other areas such as non-European developed countries and also emerging countries outside Europe.

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20. Danthine et al. (1999) and EEAG (2003).

6   Conclusion

The paper studies the evolution and determinants of banking integration across European countries with particular attention to the impact that the Euro might have had on that process. Our work merges two particularly fruitful strands of economic literature: financial integration and the role of institutional factors for financial development.

It is the first time that banking integration is being studied using quantitative indicators coming from banking consolidated data from the BIS. Previous work has focused mainly on price indicators, branches and subsidiaries or M&A activity. Not until very recently have started to appear measures of integration based on flows of quantities of loans and deposits. The scant papers that have used Euro area quantitative banking indicators are based on statistics designed mainly for monetary policy analysis or is obtained from non consolidated balance sheets, and, thus, has some inherent biases.

The paper contains some country by country indicators of internationalisation of national banks as well as of openness of national banking systems. The analysis of the former indicators shows a growing trend towards both, internationalisation and openness of banking systems, in particular, in Euro area countries. Moreover, we provide evidence on the higher and increasing across time openness of countries that have been in the process of adjusting economic and financial institutions to become members of the European Union, a process that just ended a few months ago.

The second new contribution of this paper is to investigate empirically the determinants of the degree of internationalisation and openness of country banking systems. We find that the size, the degree of "bancarisation" and the concentration of the banking system have opposite effects in terms of outflow and inflow of banking assets. The larger the country or the more bancarised or the higher the level of concentration in the national banking market, the lower the penetration of banking assets from abroad. At the same time these factors are positively associated with the amount of banking assets that are sent abroad that is with the level of internationalisation of the national banks. Moreover, the institutional framework has an impact on the openness of national banking systems. In particular the rules of law, the independence of the supervisor, and the absence of a dominant shareholder among banks have a positive impact for attracting foreign banks interest.

Once we control for the determinants of foreign banking assets allocation, we focus our analysis on the role that the Euro and the single market promoted by the European Union might have had until now in order to spur banking integration in Europe. We find a significant and positive impact of the Euro although with some asymmetries in the evolution of flows send abroad and flows received. Thus, banking integration seems to proceed at a highest speed among Euro area countries than in EU or developed countries as a whole. Moreover, the impact of the Euro on financial integration is not of once for all but, on the contrary, more distributed along time.

Although the trend towards more banking integration, in particular in Euro area countries, seems quite steady, it is true that the level of banking integration is still at a low level. Therefore, some concerns, mainly in the academic world, about the urgent need of a unique European banking supervisor are premature. The response given by European

supervisors through increased co-ordination around the European Central Bank (through its Banking Supervision Committee) or, more recently, around the CEBS (Committee of European Banking Supervisors) seem more in line with market developments in the European banking sector, at least for the time being.

Finally, the results of the analysis indicate that the New Member States that joined the European Union in May 2004 show similar level of banking integration in terms of inflows of banking assets received than the existing member states, especially those of the Euro zone. Within the enlarged Union no unbalance exists in the level of banking integration between old and new members so no special developments should be expected for the near future. The reason of this balanced situation is that banking integration has been taking place steadily in the past with many banks, especially from neighboring countries, buying privatized banks of the countries waiting for joining the European Union.

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Table 1. 'Total Foreign Claims' as percentage of Total Banking Assets of each country

Panel A: Total foreign claims received/sent from/to the Euro Area

	Received (I1)				Sent (I2)			
	1999	2000	2001	2002	1999	2000	2001	2002
Austria	12.32	13.70	25.27	24.69	6.22	7.49	3.89	4.50
Belgium	14.60	15.46	15.98	22.98	26.08	30.87	32.86	36.74
Finland	14.57	18.09	14.15	13.16	5.84	6.69	3.52	3.34
France	5.71	6.68	6.27	7.02	8.39	7.55	7.26	9.22
Germany	4.07	3.60	3.58	5.35	7.80	9.08	10.66	10.53
Ireland	21.28	21.49	21.49	23.36	2.23	2.94	3.14	
Italy	16.40	16.91	16.94	16.71	4.57	5.43	5.14	5.70
Netherlands	17.55	18.78	18.97	19.52	12.81	11.66	11.58	24.05
Portugal	13.31	20.30	20.29	24.45	4.94	3.88	3.92	5.46
Spain	9.75	10.72	10.43	12.95	7.46	8.93	8.46	8.99
Weighted average	8.55	9.16	9.58	11.13	8.55	9.16	9.58	11.45
Simple average	12.96	14.57	15.34	17.02	8.64	9.45	9.04	12.06

Panel B: Total foreign claims received/sent from/to the EU-15

	Received (I1)				Sent (I2)			
	1999	2000	2001	2002	1999	2000	2001	2002
Austria	13.66	15.04	26.62	26.09	8.60	10.38	5.02	5.73
Belgium	16.89	17.93	18.08	25.86	34.56	40.82	42.56	50.84
Finland	24.02	31.35	23.80	22.34	15.33	21.83	22.39	20.44
France	6.73	9.21	8.63	9.32	11.24	10.47	10.25	12.37
Germany	4.85	5.29	5.27	6.56	12.89	15.93	19.66	19.37
Ireland	27.37	28.08	28.94	31.80	14.34	16.40	15.73	
Italy	18.12	19.57	19.47	19.54	7.42	8.16	7.78	8.50
Netherlands	19.47	21.13	21.51	22.82	18.32	19.26	18.20	34.29
Portugal	14.53	21.97	22.52	27.45	6.88	5.91	6.20	7.25
Spain	11.31	12.42	12.12	15.24	9.23	11.39	10.75	11.45
Denmark	10.05	13.10	15.24	16.00	6.86	8.37	7.31	7.54
Sweden	14.22	16.26	15.88	14.05	11.68	23.21	19.86	13.69
UK	13.51	15.34	16.31	14.89	4.08	5.70	5.52	5.48
Weighted average	10.78	12.48	13.08	14.32	10.78	12.48	13.08	14.60
Simple average	14.98	17.44	18.03	19.38	12.42	15.22	14.71	16.41

Sources: Total Foreign Claims from BIS (http://www.bis.org/statistics/consstats.htm) and Total Banking

Assets from ECB (2003b)

Table 2. 'Total Foreign Claims' as percentage of GDP of each country

Total foreign claims received/sent from/to the Developed Countries declaring to the BIS

	Received (I21)					Sent (I22)				
	1999	**2000**	**2001**	**2002**	**2003**	**1999**	**2000**	**2001**	**2002**	**2003**
Austria	38.29	45.95	79.79	74.94	72.74	48.34	60.05	29.42	33.25	38.65
Belgium	69.73	62.74	71.32	92.85	94.55	153.30	175.61	199.76	223.83	217.97
Canada	18.53	20.09	20.69	20.46	18.83	44.85	42.88	48.44	45.09	42.94
Finland	28.31	37.45	34.95	31.95	24.42	24.47	29.72	42.87	41.18	35.70
France	24.02	29.97	29.54	32.44	33.67	58.14	60.37	62.01	72.83	77.59
Germany	21.79	25.70	27.82	31.61	32.55	81.95	100.02	118.58	109.87	100.58
Ireland	110.05	122.27	133.84	142.26	181.01	78.82	91.15	92.88		
Italy	31.73	35.75	35.94	38.89	39.28	21.90	26.52	25.14	26.00	22.39
Japan	8.55	7.62	8.59	8.98	10.92	22.97	24.46	28.14	28.64	28.77
Netherlands	66.45	79.44	81.25	87.43	96.76	101.46	109.28	108.14	220.42	232.13
Norway	26.89	29.75	35.96	42.79	37.19	2.20	7.96	6.68	6.86	7.75
Portugal	43.77	64.92	68.58	79.99	113.11	39.24	39.88	36.32	36.46	46.27
Spain	24.70	28.11	28.08	35.39	38.64	42.37	63.44	59.22	52.33	48.82
Denmark	30.31	42.16	49.90	54.60	42.30	28.89	31.60	28.96	31.68	38.81
Sweden	30.72	35.84	40.86	38.47	36.23	36.04	60.90	63.95	57.17	135.67
Switzerland	39.91	52.06	55.03	51.40	43.57	372.60	401.86	432.39	478.91	495.73
UK	76.75	86.26	90.17	90.20	94.17	59.24	73.98	80.59	86.56	91.07
US	20.27	22.46	24.39	27.46	30.14	7.36	7.61	7.98	7.15	7.72
Weighted average	25.08	27.50	30.06	33.54	36.25	34.94	37.76	41.01	44.19	47.70
Simple average	39.49	46.03	50.93	54.56	57.78	68.01	78.18	81.75	91.66	98.15

Sources: Total Foreign Claims from BIS (http://www.bis.org/statistics/consstats.htm) and GDP from OECD (Main Economic Indicators, January 2004)

Table 3. 'Total Foreign Claims' received by New Member States as percentage of GDP of each country

Panel A: Total foreign claims received from Euro Zone

	1999	2000	2001	2002	2003
Cyprus	52.10	56.72	51.91	41.24	43.58
Czech Republic	30.15	42.89	51.09	51.27	65.08
Estonia	12.75	11.82	14.96	20.61	18.58
Hungary	36.52	43.07	43.55	46.39	51.98
Latvia	6.15	7.47	12.48	16.76	15.94
Lithuania	6.11	6.34	6.76	10.93	12.70
Malta	65.64	75.22	78.84	69.41	107.75
Poland	11.41	22.32	29.39	30.72	31.45
Slovakia	22.03	19.83	21.19	50.38	48.74
Slovenia	9.94	14.74	21.51	26.30	32.03
NMS, Weighted average	19.98	28.33	33.69	37.14	41.90
NMS, Simple average	25.28	30.04	33.17	36.40	42.78
EMU, Weighted average	20.23	22.18	23.74	27.93	29.47
EMU, Simple average	30.99	35.25	39.82	44.61	47.67
Total, Weighted average	20.22	22.52	24.33	28.49	30.20
Total, Simple average	28.13	32.64	36.49	40.51	45.23

Note: Ireland is excluded because it does not report to the BIS with this level of detail.

Panel B: Total foreign claims received from EU-15

	1999	2000	2001	2002	2003
Cyprus	59.87	64.64	60.04	49.54	52.29
Czech Republic	30.88	44.01	52.14	52.28	66.48
Estonia	36.53	65.46	67.97	76.74	18.94
Hungary	37.76	44.50	45.08	47.60	53.00
Latvia	12.98	18.16	28.47	28.10	15.97
Lithuania	7.52	18.88	21.92	20.44	12.77
Malta	148.93	157.01	159.67	156.33	204.20
Poland	11.95	22.85	30.01	31.47	32.01
Slovakia	22.66	20.49	21.65	50.87	49.74
Slovenia	10.27	15.10	21.57	26.34	32.21
NMS, Weighted average	22.28	31.63	37.09	40.41	43.80
NMS, Simple average	37.94	47.11	50.85	53.97	53.76
EU-15, Weighted average	26.00	30.82	33.91	37.89	40.65
EU-15, Simple average	34.38	39.31	45.51	49.71	56.01
Total, Weighted average	25.86	30.85	34.06	38.01	40.79
Total, Simple average	35.93	42.70	47.83	51.56	55.03

Note: Ireland and Denmark are excluded because they do not report to the BIS with this level of detail.

Panel C: Total foreign claims received from Developed Countries declaring to the BIS

	1999	2000	2001	2002	2003
Cyprus	64.39	69.10	64.38	55.17	58.14
Czech Republic	34.15	46.66	54.73	55.46	69.45
Estonia	37.40	66.22	71.60	77.41	19.59
Hungary	42.22	49.80	49.56	51.95	56.02
Latvia	13.87	18.60	28.81	28.30	16.16
Lithuania	9.94	20.91	23.23	21.72	13.15
Malta	152.50	163.09	167.02	164.19	213.27
Poland	14.13	27.20	33.81	35.66	36.01
Slovakia	28.34	25.45	27.03	55.26	52.99
Slovenia	10.76	15.89	22.07	26.84	32.69
NMS, Weighted average	25.10	35.47	40.60	44.10	47.03
NMS, Simple average	40.77	50.29	54.23	57.20	56.75
Developed, Weighted average	23.60	25.88	28.33	32.06	34.82
Developed, Simple average	37.95	44.08	48.77	52.95	55.94
Total, Weighted average	23.62	26.02	28.52	32.27	35.04
Total, Simple average	38.96	46.30	50.72	54.47	56.23

Note: Ireland, Denmark, Canada and Norway are excluded because they do not report to the BIS with this level of detail.

Table 4. 'Total Foreign Claims' sent to New Member States as % of GDP of each country

	1999	2000	2001	2002	2003
Austria	3.57	5.73	4.60	5.78	7.86
Belgium	4.30	7.92	11.36	12.83	12.84
Finland	0.38	0.54	1.16	1.78	1.21
France	0.41	0.38	0.84	0.86	1.44
Germany	1.50	1.93	2.73	3.02	3.14
Italy	0.27	1.50	1.74	2.09	2.09
Netherlands	2.47	2.88	2.56	3.14	3.14
Portugal	0.11	0.23	0.31	0.23	0.22
Spain	0.08	0.08	0.10	0.09	0.11
EMU, Weighted average	1.09	1.68	2.16	2.46	2.67
EMU, Simple average	1.45	2.35	2.82	3.31	3.56
Sweden	0.89	2.32	3.17	3.05	0.31
United Kingdom	0.40	0.41	0.41	0.42	0.48
EU-15, Weighted average	0.96	1.46	1.86	2.08	2.20
EU-15, Simple average	1.31	2.17	2.63	3.03	2.98
Switzerland	0.63	0.72	0.83	0.92	0.77
United States	0.07	0.10	0.10	0.11	0.11
Japan	0.04	0.04	0.04	0.04	0.05
Total, Weighted average	0.39	0.55	0.70	0.81	0.93
Total, Simple average	1.08	1.77	2.14	2.45	2.41

Note: Ireland, Denmark, Canada and Norway are excluded because they do not report to the BIS with this level of detail.

Table 5. 'Total Foreign Claims' sent to New Member States as percentage of total foreign claims sent to emerging markets

	1999	2000	2001	2002	2003
Austria	34.56	40.99	51.86	53.86	58.59
Belgium	51.18	58.83	71.95	72.27	73.73
Finland	18.55	23.17	39.56	62.59	66.42
France	5.36	5.16	11.41	11.53	18.27
Germany	16.59	19.57	25.45	30.43	31.88
Italy	8.16	27.09	31.42	38.96	45.49
Netherlands	12.02	14.12	13.42	16.58	16.06
Portugal	4.52	9.45	10.91	8.44	10.02
Spain	0.46	0.25	0.32	0.41	0.58
EMU, Weighted average	12.23	14.80	19.12	23.33	26.22
EMU, Simple average	16.82	22.07	28.48	32.79	35.67
Sweden	45.04	64.39	68.24	72.47	0.58
United Kingdom	5.10	4.42	4.60	4.36	5.04
EU-15, Weighted average	11.29	13.63	17.43	20.51	19.32
EU-15, Simple average	18.32	24.31	29.92	33.81	29.70
Switzerland	4.21	4.90	5.47	5.96	4.17
United States	3.12	4.68	3.82	5.38	5.26
Japan	1.90	2.13	1.80	2.13	2.64
Total, Weighted average	8.68	11.01	13.26	16.43	16.26
Total, Simple average	15.05	19.94	24.30	27.53	24.19

Note: Ireland, Denmark, Canada and Norway are excluded because they do not report to the BIS with this level of detail.

Table 6. Portfolio structure over time

Panel A: Sent by EMU

	Developed							Developing							Other
	Total	EU			Japon	US	Other Developed	Total	Africa	Asia	Europe			Latam	
		Total	EMU	Other							Total	NMS UE	Other		
1999	75.55	50.21	33.34	16.87	2.45	13.98	8.92	15.68	1.87	2.91	3.49	2.05	1.45	7.41	8.77
2000	73.29	49.43	30.76	18.66	2.14	13.73	7.99	17.58	1.81	2.47	4.56	3.05	1.51	8.74	9.13
2001	74.62	49.73	30.48	19.26	2.07	13.09	9.72	18.27	1.93	2.05	5.74	4.22	1.52	8.55	7.11
2002	77.78	51.63	33.04	18.59	1.90	14.59	9.66	16.41	1.74	1.59	6.39	4.63	1.76	6.69	5.82
2003	79.15	54.59	35.26	19.34	2.25	13.56	8.75	15.63	1.44	1.54	6.99	5.09	1.88	5.67	5.22

Note: Ireland is excluded because it does not report to the BIS enough detail in emergin markets

Panel B: Sent by EU-15

	Developed							Developing							Other
	Total	EU			Japon	US	Other Developed	Total	Africa	Asia	Europe			Latam	
		Total	EMU	Other							Total	NMS UE	Other		
1999	75.91	47.94	31.26	16.67	2.68	15.61	9.68	14.53	1.82	2.99	3.23	1.96	1.26	6.49	9.56
2000	74.26	48.56	30.97	17.59	2.17	15.12	8.41	16.05	1.75	2.55	4.20	2.89	1.31	7.55	9.68
2001	75.13	48.51	30.56	17.95	2.10	14.61	9.91	16.62	1.84	2.18	5.26	3.95	1.31	7.35	8.25
2002	77.91	49.15	31.31	17.83	1.95	16.58	10.23	15.10	1.68	1.78	5.81	4.31	1.50	5.82	6.99
2003	76.65	51.51	34.85	16.66	2.12	14.70	8.31	17.37	1.42	1.73	5.83	4.23	1.58	8.39	5.98

Note: Ireland and Denmark excluded because it does not report to the BIS enough detail in emergin markets

Panel C: Sent by Developed Countries declaring to the BIS

	Developed							Developing							Other
	Total	EU			Japon	US	Other Developed	Total	Africa	Asia	Europe			Latam	
		Total	EMU	Other							Total	NMS UE	Other		
1999	75.62	45.61	28.52	17.09	3.36	19.25	9.01	14.53	1.72	3.62	2.77	1.63	1.14	6.42	9.85
2000	74.85	45.78	28.06	17.72	2.98	19.52	8.18	15.41	1.63	3.08	3.57	2.39	1.18	7.13	9.74
2001	75.28	45.25	27.94	17.31	2.83	19.58	9.21	16.09	1.68	2.73	4.35	3.21	1.14	7.33	8.63
2002	77.78	46.24	29.06	17.17	2.58	21.01	9.63	14.60	1.54	2.41	4.83	3.52	1.31	5.82	7.62
2003	76.82	48.22	31.81	16.41	2.78	19.18	8.20	16.25	1.32	2.42	4.84	3.45	1.38	7.66	6.94

Note: Ireland, Denmark, Canada and Norway excluded because it does not report to the BIS enough detail in emergin markets

Table 7. Ordinary Least Square regression of 'Total Foreign Claims' as % of GDP as a function of country, time and euro/new member state variables

	Received			Sent
	Coeffcient (1)	Coeffcient (2)	Coeffcient (3)	Coeffcient (4)
Austria	--	--	-21.24 ***	--
Belgium	15.90 ***	15.57 **	-5.67	152.17 ***
Canada	-67.80 ***	-62.86 ***	-62.86 ***	-33.46 **
Finland	-30.92 ***	-39.76 ***	-39.76 ***	-7.15
France	-32.40 ***	-31.50 ***	-52.74 ***	24.26 *
Germany	-34.45 ***	-31.78 ***	-53.03 ***	60.27 ***
Ireland	67.33 ***	-34.20 ***	-55.45 ***	53.64 ***
Italy	-26.01 ***	70.54 ***	49.30 ***	-17.54
Japan	-78.59 ***	-25.39 ***	-46.63 ***	-51.69 ***
Netherlands	19.94 ***	-73.75 ***	-73.75	112.35 ***
Norway	-53.00 ***	19.66 ***	-1.58 ***	-72.00 ***
Portugal	11.74 ***	-51.09 *	-51.09	-2.29
Spain	-31.36 ***	12.02 ***	-9.22 ***	11.30
Denmark	-43.66 ***	-30.62 ***	-51.86 ***	-46.31 ***
Sweden	-51.10 ***	-51.83 ***	-51.83 ***	-7.54
Switzerland	-39.11 ***	-35.09 ***	-35.09 ***	358.00 ***
United States	-61.36 ***	-59.58 ***	-59.58 ***	-70.73 ***
Cyprus	--	-20.26 ***	--	--
Czech Republic	--	-30.41 ***	-10.15	--
Estonia	--	-28.06 ***	-7.79	--
Hungary	--	-32.59 ***	-12.33 *	--
Latvia	--	-61.35 ***	-41.09 ***	--
Lithuania	--	-64.71 ***	-44.45 ***	--
Malta	--	89.51 ***	109.78 ***	--
Poland	--	-53.14 ***	-32.87 ***	--
Slovakia	--	-44.69 ***	-24.42 ***	--
Slovenia	--	-60.85 ***	-40.59 ***	--
2000	5.54	7.49 **	6.13 *	9.64
2001	9.21 **	11.17 ***	10.82 ***	15.37
2002	10.30 ***	13.53 ***	15.00 ***	20.99 *
2003	8.43 **	12.02 ***	17.99 ***	34.29 ***
2000*euro	1.81	-0.41	--	0.97
2001*euro	4.02	1.67	--	-2.94
2002*euro	8.59	5.55	--	6.35
2003*euro	14.23 ***	14.71 **	--	-6.51
2000*nms	--	--	3.39	--
2001*nms	--	--	2.63	--
2002*nms	--	--	1.43	--
2003*nms	--	--	-2.01	--
euro	-30.91 ***	-25.55 ***		-35.94 **
nms	--	--	-21.35 ***	--
constant	80.82 ***	73.66 ***	72.51 ***	62.24 ***
No. Obs.	89	140	140	88
Adjusted R-squared	0.93	0.92	0.92	0.95

Note: ***/**/* denote significance at 1% / 5% / 10% level

The coefficients of the individual country dummy variables show differences in banking internazionalization, in columns 1,3 and 4 with respect to the UK and Austria, in column 2 with respect to the UK and Cyprus.

Table 8. Summary Statistics

Panel A: Euro Area

	Nº Obs	Mean	Std. Desv.	Min	Max
size	40	10.00	9.96	1.46	32.27
bancar	40	2.47	0.73	0.98	3.70
herf	40	9.23	6.45	1.00	22.00
wide	36	0.28	0.31	0.00	1.00
indep	36	2.89	1.21	1.00	4.00
rule	40	9.03	0.83	7.80	10.00

Panel B: European Union

	Nº Obs	Mean	Std. Desv.	Min	Max
size	52	7.69	7.60	1.13	25.04
bancar	52	2.51	0.73	0.98	4.00
herf	52	9.75	6.67	1.00	22.00
wide	48	0.30	0.32	0.00	1.00
indep	48	2.83	1.23	1.00	4.00
rule	52	9.15	0.82	7.80	10.00

SIZE: GDP of country c in year t over the sum of GDP in year t for the countries in our sample. GDP is obtained from OCDE.

BANCAR: Total banking assets of country c in year t divided by each country GDP. ECB (2003b).

HERF: Herfindhal index of concentration of the bank assets of country c in period t. ECB (2003b).

WIDE: Degree of dispersion of ownership of the banks of each country. The variable is calculated for a sample of the ten largest traded banks in terms of total assets at the end of December 2001. Caprio et al. (2003).

INDEP: Degree of independence of the banking supervisor from the Government. The variable is based on a survey conducted between 1998 and 2000. Caprio et al. (2003).

RULE: Assessment of law and order tradition in the country. It is an average from 1982 to 1995. La Porta et al. (1998).

Table 9. OLS estimates of the determinants of 'Total Foreign Claims' Received as % of Total Banking Assets

Variable	Euro area		European Union	
	Coefficient	P-Value	Coefficient	P-Value
SIZE	-0.99	0.000	-1.26	0.000
BANCAR	-9.16	0.020	-8.93	0.000
HERF	-1.11	0.004	-0.65	0.015
WIDE	10.64	0.034	19.60	0.000
INDEP	5.27	0.014	3.73	0.003
RULE	5.58	0.011	7.61	0.000
EURO	--	--	9.30	0.000
UK	--	--	13.20	0.000
2000	3.14	0.091	3.24	0.025
2001	5.58	0.011	5.56	0.001
2002	6.68	0.003	6.85	0.000
CONS	-34.18	0.101	-42.27	0.008
Nº Obs	36		48	
Adj R-squared	0.68		0.78	

The P-value provides, directly, the level of significance of the parameter.

Table 10. OLS estimates of the determinants of 'Total Foreign Claims' Sent as % of Total Banking Assets

Variable	Euro area		European Union	
	Coefficient	P-Value	Coefficient	P-Value
SIZE	0.25	0.000	0.46	0.000
BANCAR	2.92	0.001	2.33	0.035
HERF	0.37	0.004	1.12	0.000
WIDE	-5.20	0.030	5.54	0.075
EURO	--	--	4.93	0.007
UK	--	--	-7.16	0.031
2000	-0.09	0.949	2.26	0.174
2001	-1.30	0.369	0.57	0.732
2002	0.83	0.576	1.37	0.425
CONS	-4.09	0.148	-13.21	0.002
Nº Obs	35		47	
Adj R-squared	0.45		0.60	

The P-value provides, directly, the level of significance of the parameter.

Chart 1. Evolution of 'Total Foreign Claims' (Received and Sent), as % of Total Banking Assets and GDP. Simple Average of countries belonging to the Euro area

Panel A: Received

as % of Total Banking Assets

as % of GDP

Panel B: Sent

as % of Total Banking Assets

as % of GDP
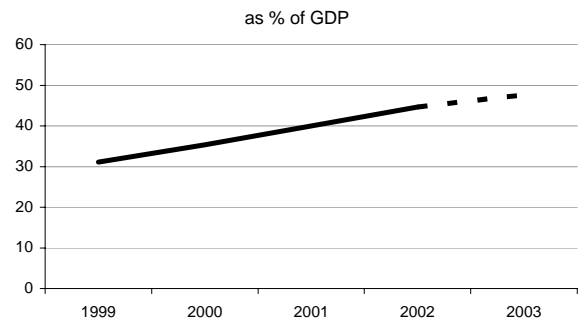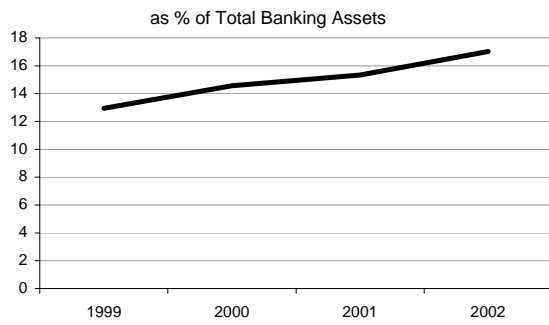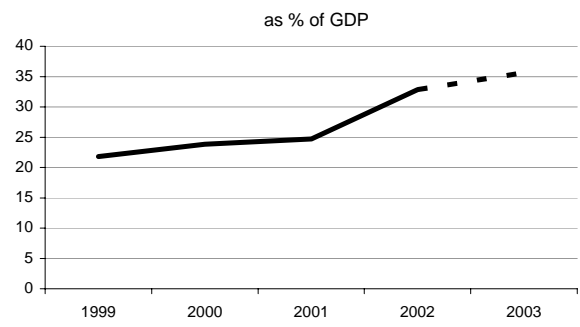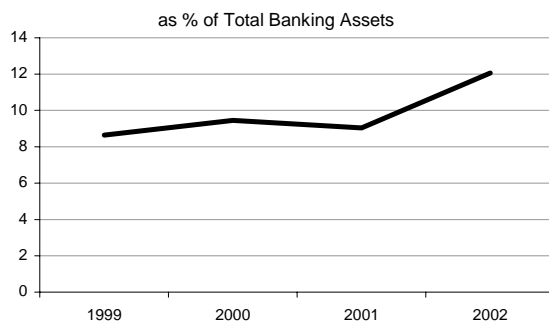
Chart 2. 'Total Foreign Claims' send to New Member States from different regions
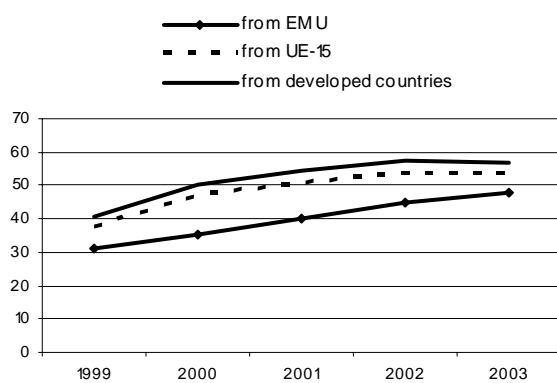
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