FINANCIAL INTEGRATION IN EUROPE AND BANKING SECTOR PERFORMANCE

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1 MOTIVATION

Legally, virtually all direct barriers to the cross-border activities of banks in Europe have been abolished in the past decades. Hence, Europe might be considered one of the most integrated banking markets worldwide. However, there is ample evidence suggesting that financial market integration de facto is smaller than one might expect in fully integrated financial markets.[1] This study tries to give an answer to three questions:

- Has integration promoted cross-border banking?
- What are the segmenting barriers to a full integration of financial markets?
- What have been the effects on the performance of banks?

Throughout the study, we try to disentangle policy-induced factors segmenting financial markets (such as taxes, regulations), from those inherent in markets, i.e. 'natural' factors such as preferences, culture, or technology. This distinction is relevant in particular because economic policy can have a direct impact on the former type of barriers, while market-inherent barriers to integration can be affected by economic policy only very gradually and modestly at best.

The remainder of the paper falls into three parts. Section two provides stylized facts on the integration of financial markets in Europe, providing also comparative evidence for the United States. The focus is on cross-border capital flows, market shares of foreign banks, and the impact of integration on bank profitability. In Section three, we provide new empirical evidence on the link between the deregulation of financial markets and banking. We distinguish the impact of deregulation on cross-border banking and the impact of cross-border banking on banking efficiency. Part four discusses the results, focusing in particular on the benefits of financial integration and potential lessons for economic policy.

2 HOW FRAGMENTED ARE FINANCIAL MARKETS IN EUROPE? STYLIZED FACTS

2.1 Institutional Background

In Europe, financial market deregulation has been shaped both by the abolition of capital account restrictions and the adoption of common legislative standards. Yet, the timing of

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[1] For a review of the literature see Buch (2001).

implementation at the national level has varied quite substantially (European Commission (EU) 1997, Table 1). Although individual countries had opted to liberalize capital flows earlier on, agreements to abolish capital controls on a European-wide level were adopted only in the 1980s (Bakker 1994). The Single European Act, which was signed in 1986, formally prepared the ground for the removal of all legal obstacles to an internal market. Full implementation into national law was achieved only in the 1990s in the majority of countries.

Table 1 — Liberalization of Banking Activities in EU Member States

	Lifting of capital controls	Interest rate deregulation	First Banking Directive	Second Banking Directive
Belgium	1991	1990	1993	1994
Denmark	1982	1988	1980	1991
France	1990	1990	1980	1992
Germany	1967	1981	1978	1992
Greece	1994	1993	1981	1992
Ireland	1985	1993	1989	1992
Italy	1983	1990	1985	1992
Luxembourg	1990	1990	1981	1993
Netherlands	1980	1981	1978	1992
Portugal	1992	1992	1992	1992
Spain	1992	1992	1987	1994
UK	1979	1979	1979	1993

Source: EU (1997)

First steps towards leveling the playing field for financial institutions across Europe were made in the 1970s by granting the freedom of establishment and passing the First Banking Directive. Since cross-border banking activities remained subject to host-country supervision, the potential for national discretion yet remained substantial. The major step towards closing the remaining gaps was made with the Second Banking Directive, which became effective in 1993. The Directive establishes, among other things, the acceptance of the principles of mutual recognition of banking licenses, of minimum harmonization, and of home country control. Furthermore, the Directive eliminates the need to get a local banking charter for branches in a foreign country, subjects foreign branches to home country supervision, and abolishes the need for foreign branches to hold a certain amount of endowment capital.

As a result, Europe is one of the most open regions worldwide towards foreign competition in banking. Table 2 gives an overview of the prudential regulations affecting foreign financial institutions. In Europe, there are virtually no restrictions to the market entry of foreign banks in place, indicating a slightly more liberal regime in comparison to high income

Table 2 — Openness of Banking System Towards Foreign Competition

	EU	Euroland	Developed countries	High income	Upper middle income	Lower middle income	Lower income
Limits on foreign bank ownership of domestic banks	0.00	0.00	0.08	0.17	0.44	0.19	0.14
Limits on entry of foreign banks	0.00	0.00	0.04	0.07	0.11	0.24	0.14
Concentration ratio	59.19	56.17	60.92	63.75	66.48	72.35	72.91
Foreign bank ownership	16.29	19.97	24.81	33.57	31.72	33.75	33.59
Government-owned banks	9.98	12.97	10.27	10.28	12.32	28.32	35.36
No entry applications	0.00	0.00	0.04	0.09	0.14	0.13	0.00
Domestic	0.21	0.27	0.24	0.31	0.25	0.30	0.11
Foreign	0.08	0.10	0.08	0.16	0.30	0.43	0.22
Fraction of entry applications denied	3.67	3.23	3.21	7.69	11.99	32.22	49.32
Domestic	5.42	3.37	2.13	7.16	8.33	28.04	79.82
Foreign	1.67	2.22	3.21	6.91	16.85	30.83	37.85

All variables are averages by income level or region, respectively. Limits on foreign bank ownership of domestic banks = maximum fraction of banking system assets that can be held by banks that are 50 percent or more foreign-owned. Bank concentration ratio = fraction of deposits held by the five largest banks. Foreign bank ownership = fraction of banking system's assets that are held by banks which are 50 percent or more foreign-owned. Government-owned banks = fraction of banking system's assets held by banks that are 50 percent or more government-owned. No entry applications = dummy variable which assigns a one if applications for licenses have been received in the past 5 years. Fraction of entry applications denied = fraction of applications denied in the past 5 years.
Source: Barth et al. (2001)

countries on average and to less developed countries in particular. EU countries as well as developed countries in general also have a lower share of entry applications being denied in comparison to lower income countries.

At the same time, however, the actual share of foreign ownership in Europe is below the average for developed countries, and substantially below the values observed for lower income markets. Despite the substantial deregulation of cross-border banking that has taken place over the past decades, the direct presence of foreign banks (branches plus subsidiaries) on domestic markets remains modest for most EU countries (ECB 1999).

One reason for the comparatively low market shares of foreign banks in Europe is the typically low profitability of foreign banks in developed market economies (Berger et al. 2000). However, explicit and implicit regulatory barriers play a role as well. Notwithstanding the substantial efforts that have been made at leveling the playing field for financial institutions across Europe and at creating a Single Market for capital, this indicates that substantial indirect barriers to the full integration of financial markets remain. Countries have been able to retain a substantial amount of national flavor in regulating their financial markets and to shield incumbent financial institutions against competitive pressure from abroad. This and the concomitant need to further lower remaining barriers to financial integration has prompted the European Commission to draft a Financial Services Action Plan (European Commission 1999). Also, a recent report of the Committee of Wise Men states that "*the European Union's current regulatory framework is too slow, too rigid, complex and ill-adapted to the pace of global financial market change. Moreover, [...] existing rules and regulations are implemented differently and [...] therefore inconsistencies occur in the treatment of the same type of business, which threatens to violate the pre-requisite of the competitive neutrality of supervision*" (European Commission 2001: p. 7).

However, quantifying the importance of indirect barriers is difficult without having a benchmark case of full integration. Incidentally, the experience of the United States with the integration of financial markets can provide such a frame of reference. Prior to the mid-1990s, the McFadden Act of 1927 effectively restricted interstate branching of commercial banks; intra-state branching was limited by the so-called unit banking system that confined banking activities to a single banking office in some states. Interstate privileges softened subsequently, and by 1994, almost 70 percent of banking assets were legally accessible from the average U.S. state, an increase from less than 10 percent in the early 1970s (Berger et al. 1995). The pattern of deregulation has not been uniform across states, however. While some states had lifted barriers to the interregional activities of banks already in the early 1980s, others followed only in the 1990s. In the early 1990s, however, the process of deregulation of regional banking activities was de facto completed (Jayaratne and Strahan 2000).

Generally, the removal of restrictions to the regional expansion of banks in the United States can be viewed in close relation to the creation of a Single Market in Europe. In both

cases, banks were allowed to expand their activities across borders. While also in the US banks have been slow to move into new markets at first (see, for instance, the evidence reviewed in Buch 2002), cross-border banking has become much more common in recent years. Morgan et al. (2001) show that, in 1995, out-of-state bank holding companies held more than 60 percent of the banking system's assets in most of the US states.

At the same time, one important difference to the United States is that banking supervision in Europe remains under national responsibility.[2] In Europe, there is no generally accepted institutional link between banking supervision and the responsibility for monetary policy. In some countries, supervision is performed by institutions outside the central banking system, in others, the two tasks are performed under one roof. At the European level, coordination of banking supervision takes place through a banking supervision committee at the European Central Bank (ECB) which, however, serves mainly as a place for coordination and consultation.

In summary then, it is difficult to argue that deregulation of banking activities has proceeded more or less rapidly in Europe as compared to the United States. While intra-European capital controls had been abolished in some countries early on, others followed only in the 1990s. In the United States, there have been no formal capital controls but restrictions to the regional expansion of commercial banks have played a similar role.

2.2 Cross-Border Capital Flows

As EU banking systems have become more and more open internationally, an interesting question is to what extent international asset holdings have been diversified. The International Capital Asset Pricing Model implies that investors should seek to diversify their portfolios to the greatest possible degree, and securities which show a low degree of correlation with the home portfolio should be relatively attractive. Since the member countries of the EU are relatively similar with regard to their state of economic development and since there has been a general convergence process in the run-up to the introduction of the common currency, we might expect to find a relatively small potential for diversification among these countries. If anything, there might be an incentive to diversify into the smaller EU countries which are still undergoing a catching up process and thus provide diversification opportunities. Empirical evidence provided by Buch and Lapp (2000) and Lapp (2001) in fact supports the view that diversification within Europe is not necessarily an optimal strategy while, at the same time, portfolios of German banks were found to be insufficiently diversified.

The lack of evidence in favor of the investment patterns predicted by standard portfolio theory is certainly not confined to Germany. Generally, agents tend to hold the bulk of their

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2 For a more detailed treatment of regulatory issues at the European level see Lannoo (2000).

financial wealth in assets of their home country and currency.[3] If anything, they diversify their portfolios only within a relatively small regional or cultural surrounding. There is an increasing amount of evidence that, even within national borders, investment patterns are guided by regional and cultural proximity (Coval and Moskowitz 1999, Grinblatt and Keloharju 2000). A number of explanations for this home bias in (international) investment portfolios have been offered, ranging from asymmetries in information on financial markets to incomplete integration of goods markets.[4]

Data on the share of EU countries in international asset holdings for the EU countries as well as for the US provides further evidence on the regional bias of investors (Buch 2001). Generally, the EU member states hold more than one half of their external financial assets within Europe. This holds true for all countries and assets considered with a few exceptions. Austria and the UK, for instance, hold less than 50 percent of their financial assets within Europe, albeit for very different reasons. For Austria, lending to the transition economies of Central and Eastern Europe is of above-average importance, thus likewise reflecting a regional component in investment portfolios. For the UK, to the contrary, the below-average EU-share is the result of the fact that London hosts an international financial center. As for portfolio investments, Italy and the UK have relatively low shares of EU-investments. Data on the outward stock of FDI have not been available for all countries. While the pattern is similar compared to security holdings for most countries, only Portugal holds a below average share (40 percent) of its FDI in Europe.

Buch (2001) also reports information for the US as one of the most important international investors. While the share of the EU in the international investment portfolio of the US (about 48 percent) is somewhat below the average for the EU countries, this gap is yet far smaller than for trade. Only 20 percent of US trade is with countries of the European Union, as compared to values around 60-70 percent for the average EU country, which could be reflecting the importance of physical transportation costs. Applying a similar reasoning to Europe, one would expect a greater degree of trade integration than financial sector integration among the EU countries. Yet, this holds true only for a few countries (Austria, Portugal, Spain, UK).

The dominance of European countries in international asset holdings does not imply, however, that bilateral financial linkages are important relative to the total size of financial markets. Buch (2001) presents data on the ratio of bilateral asset holdings relative to domestic credit in EU countries. Overall, German and French banks are the major lenders on international banking markets, having accounted for almost 20 and 10 percent, respectively, of cross-border assets of commercial banks at the end of 1999. Comparing cross-border assets

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3 See also Tesar and Werner (1992).

4 See Lewis (1999) for a survey.

of German commercial banks to domestic credit in the EU countries, however, shows that most bilateral financial linkages are a relatively small fraction of total domestic credit only.

The only two countries which stand out in this regard are Germany and Luxembourg. Cross-border asset holdings of German commercial bank reach shares of 10 percent or even more of domestic credit in a number of EU countries (Austria, Denmark, Finland, Greece, Italy, Ireland, Netherlands, United Kingdom). Luxembourg, to the contrary, has liabilities vis-à-vis other EU countries which add up to more than the amount of domestic credit outstanding, Germany alone accounting for about half of these liabilities. Other major sources of intra-EU liabilities have been Belgium, France, and Italy.

Taking a longer-term perspective, Graph 1 plots the evolution of banks' foreign assets and liabilities relative to GDP. From these graphs, a number of interesting features emerge:

First, foreign activities of commercial banks have expanded rapidly after the end of the Bretton-Woods period and the subsequent abolition of capital controls in the early 1970s. Prior to this time, they hardly accounted for more than 5-10 percent of GDP. This is consistent with studies on long-term changes in the degree of capital mobility which find that the degree of integration of international capital markets has started to accelerate in the 1970s (Bordo et al. 1998, Taylor 1996).

Second, banking systems in Europe show divergent degrees of international openness. Broadly speaking, the countries fall into three groups: banks in highly financially open economies, such as Ireland or the United Kingdom, have foreign assets and liabilities which exceed GDP. The ratio of external assets for most countries is in the range of about 50 percent of GDP, this group comprising Austria, Denmark, France, Germany, the Netherlands, Portugal, and Sweden. Notwithstanding quite pronounced differences in developments over time, the group of countries which is less integrated into international capital flows and has gross foreign assets or liabilities of only 30 percent or less of GDP comprises Finland, Italy, and Spain.

Third, outward openness of banking systems seems to have accelerated after 1992 in a few countries such as Germany (which is partly also due to the reunification effect and the resulting increased imports of capital), Ireland, Portugal, or Spain. In others (France, Italy, Netherlands, Sweden), there has been an upward trend of this measure throughout while others (Austria, Finland, the United Kingdom) have even shown declining shares of banks' foreign assets and liabilities over GDP.

Fourth, net foreign asset positions are relatively small compared to gross positions. This is in line with earlier work looking at countries' international investment positions[5] and is likely to reflect borrowing constraints that become effective if net positions are becoming large.

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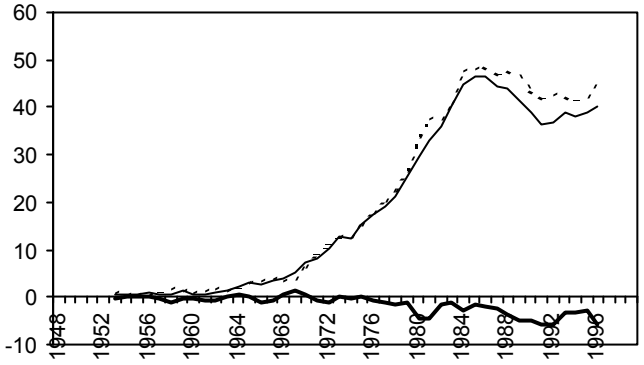
5 See Kraay et al. (2000) or Lane and Milesi-Ferretti (2001).

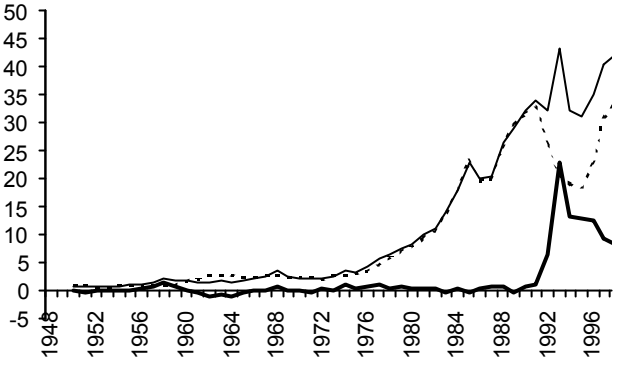
Graph 1 — Foreign Assets and Liabilities of Commercial Banks (% of GDP), 1948–1999

_____ gross foreign assets --------- gross foreign liabilities ▬▬ net assets

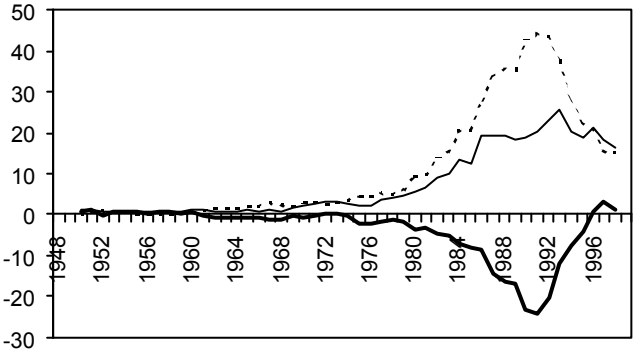
Austria



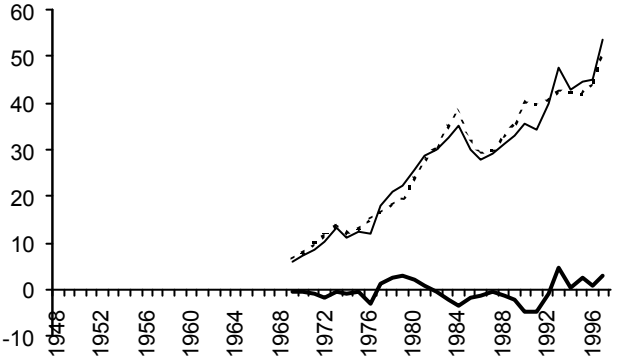
Denmark



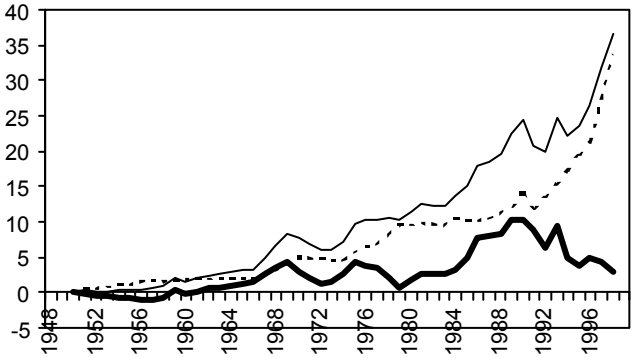
Finland



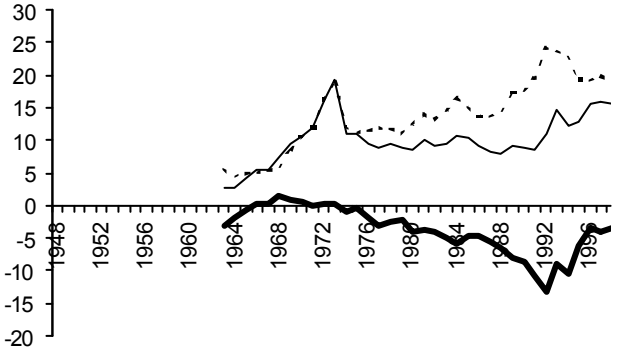
France



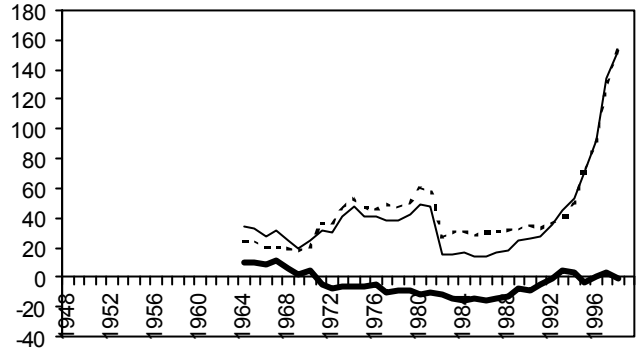
Germany



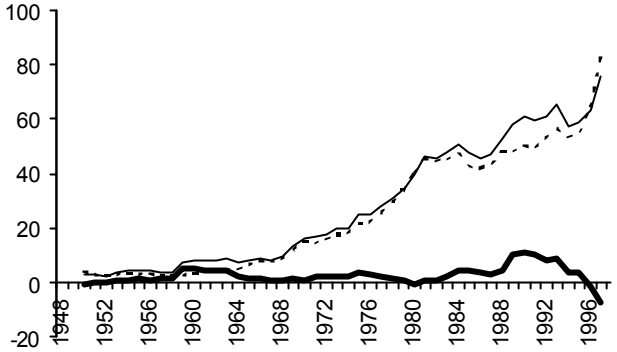
Italy



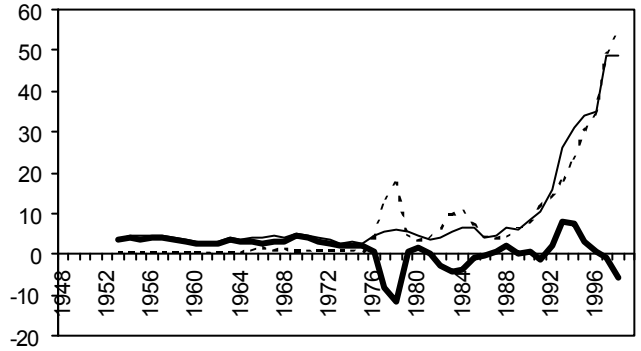
Ireland



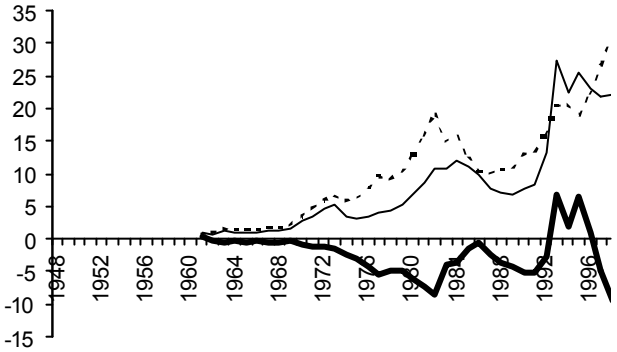
Netherlands



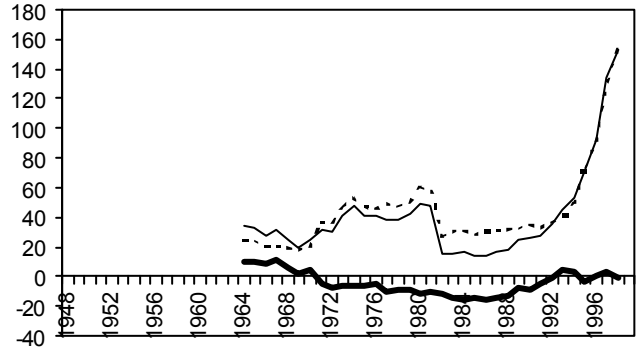
Portugal



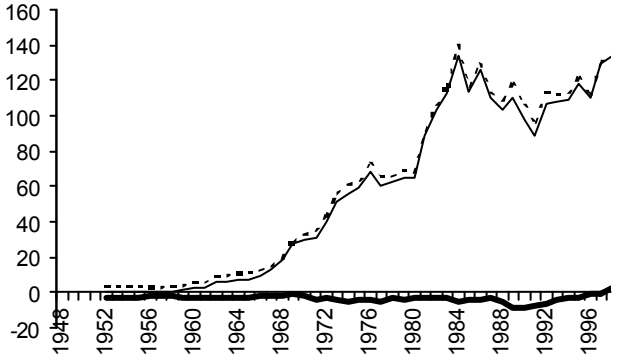
Spain



Sweden



United Kingdom



Source: IMF (2001), own calculations

Generally, changes in the ratio of banks' foreign assets and liabilities over GDP are driven by two factors: changes in the degree of openness of financial systems and changes in the importance of the banking system relative to GDP. In order to isolate these two effects, Buch (2001) presents data on the importance of claims and liabilities towards non-residents relative to the balance sheet total of EU financial institutions in the 1990s. Two results are striking: First, the importance of foreign assets and liabilities relative to their balance sheet total again varies quite substantially between the EU member countries. At the bottom end of the scale, banks in Italy or Spain have assets and liabilities vis-à-vis non-residents of only 10 to 15 percent of their balance sheet total. For the majority of the countries, this share is around 20–25 percent. Second, changes in these ratios have been relatively modest for most countries during the 1990s, and there has been no consistent time trend across countries. To some extent, the increase in the ratio between foreign assets of the banking systems relative to GDP thus reflects the increase in the ratio of total banking system assets over GDP.

2.3 Market Shares of Foreign Banks

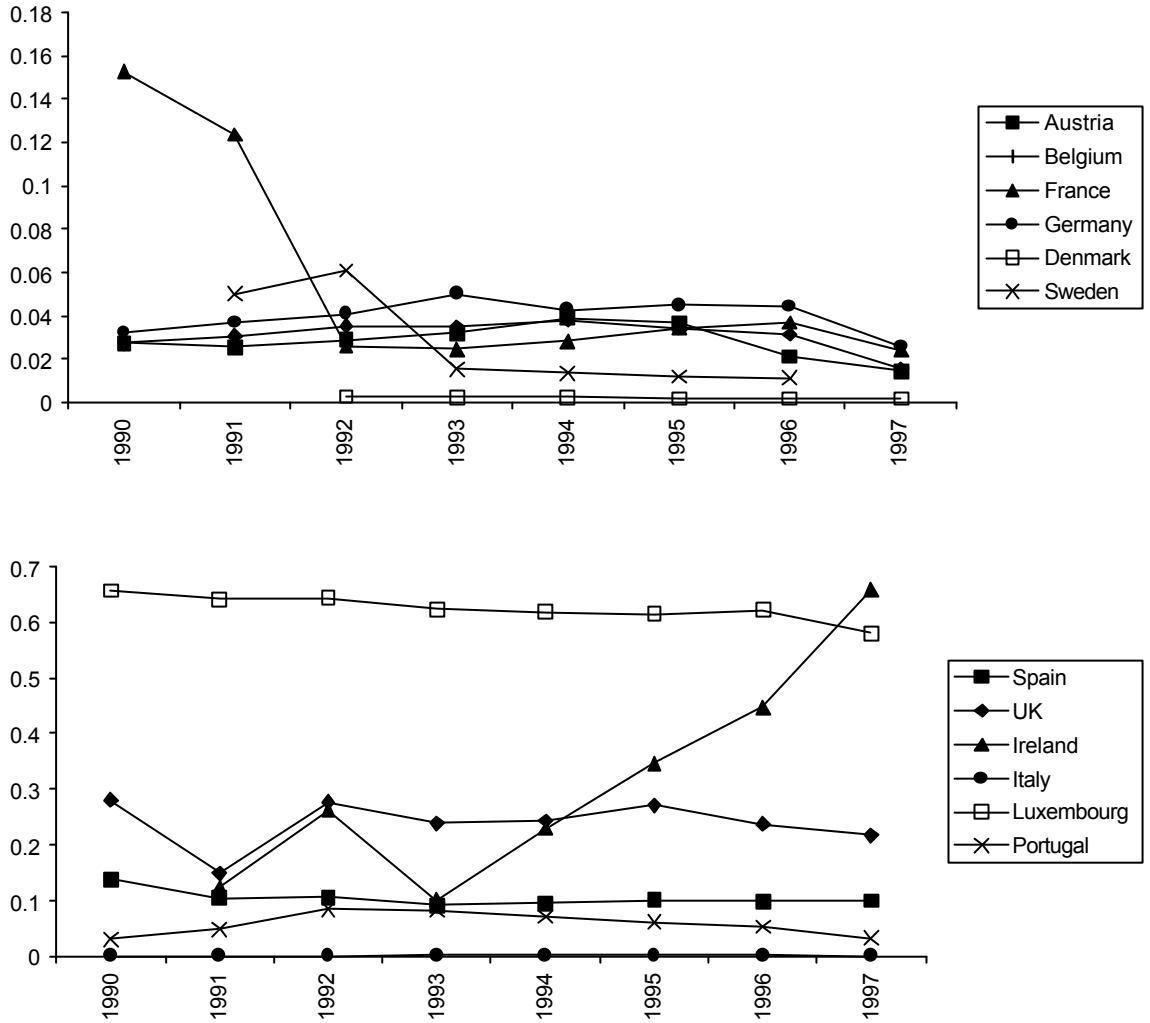
In contrast to the rapid increase of foreign assets and liabilities of commercial banks, market shares of foreign banks in EU countries are relatively small (Graph 2). The UK, Ireland, and Luxembourg are exceptions. These are countries which host international financial centers and have a very liberal regime towards foreign banks.

The experience of Western Europe with relatively low market shares of foreign banks is in contrast to evidence from several emerging markets where, after entry had been liberalized in general, foreign banks found it much easier to acquire market shares. Several factors are responsible for this:

First, mergers and acquisitions (M&As) are one important channel through which entry in the banking sector occurs. So far, however, M&As in Europe have taken place mainly on a national level. Between 1985 and 2000, 84 percent of all merger cases involved domestic financial institutions only, as compared to 5 percent involving two European institutions, and 11 percent of mergers between European and non-European institutions (ECB 2000). Hence, domestic banking systems seem to have consolidated and strengthened first, thus reducing the profitability of entry.

Second, the low frequency of bank mergers between (developed) EU countries and the limited entry of foreign banks is also a response to the limited success of entry. Empirical studies tend to show that international bank mergers have a relatively small probability of being successful and that foreign banks in developed countries tend to perform worse than their domestic counterparts (Berger et al. 2000).

Graph 2 — Market Shares of Foreign Banks (Share of Total Assets), 1990–1997



Source: The World Bank (2001)

2.4 Bank Profitability and Efficiency

Mainly, an increase in the openness of banking systems in Europe has thus occurred through increased capital flows rather than the market entry of foreign banks. The question is to what extent these changes have affected the profitability of the European banking industry. Correlations between the return on equity across European countries suggest that there remains a considerable degree of segmentation of banking markets. On average, the profitability of banks across EU countries (as measured by their return on equity) has been

Table 3 — Performance Indicators of Banks in Europe and in the US in the 1990s

Data are for all banks with the exception of Greece, Portugal, the United Kingdom and the United States (commercial banks only) and Denmark (commercial and savings banks). Volatility of profits and provisions has been measured through the coefficient of variation = standard deviation / sample mean.

a) Profits before tax in percent of average assets

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average	CV
Austria	0.44	0.40	0.41	0.34	0.49	0.42	0.39	0.43	0.43	0.46	0.42	0.09
Belgium	0.29	0.25	0.23	0.37	0.34	0.33	0.39	0.38	0.44	0.45	0.35	0.20
Denmark	–0.27	–0.01	–1.20	0.65	…	1.41	1.23	1.05	0.97	0.86	0.52	1.54
Finland	0.29	0.40	–0.78	–2.63	–1.42	–1.19	–0.37	0.41	0.86	0.54	–0.39	–2.70
France	0.36	0.39	0.28	0.12	0.02	0.15	0.18	0.28	0.35	0.47	0.26	0.51
Germany	0.48	0.58	0.57	0.58	0.52	0.57	0.53	0.47	0.71	0.38	0.54	0.15
Greece	0.46	0.87	1.60	1.15	1.06	0.31	0.26	0.79	0.99	1.20	0.87	0.46
Italy	1.00	0.94	0.70	0.81	0.28	0.36	0.5	0.33	0.90	1.02	0.68	0.41
Netherlands	0.55	0.53	0.58	0.68	0.70	0.75	0.78	0.74	0.61	0.78	0.67	0.14
Spain	1.31	1.38	1.08	0.36	0.77	0.82	0.86	0.94	0.95	0.96	0.94	0.29
Portugal	…	…	…	0.98	0.71	0.65	0.77	0.88	0.83	0.8	0.80	0.13
UK	0.72	0.4	0.31	0.76	1.15	1.17	1.14	1.15	1.23	1.35	0.94	0.37
Average EU	0.51	0.56	0.34	0.35	0.42	0.48	0.56	0.65	0.77	0.77	0.54	0.27
US	0.77	1.33	1.76	1.73	1.81	1.85	1.93	1.81	2.03	1.38	1.64	0.22

Table 3 continues …

Table 3 continued

b) Net Provisions in percent of average assets

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average	CV
Austria	0.39	0.5	0.52	0.66	0.58	0.51	0.44	0.44	0.39	0.37	0.48	0.18
Belgium	0.22	0.31	0.38	0.24	0.14	0.24	0.22	0.23	0.22	0.14	0.23	0.29
Denmark	1.21	1.49	1.79	1.76	0.92	0.76	0.49	0.34	0.34	0.28	0.94	0.60
Finland	0.26	0.27	–0.01	–0.06	–0.01	–0.03	–0.01	–0.02	0.01	–0.02	0.04	3.02
France	0.26	0.28	0.50	0.68	0.57	0.59	0.39	0.28	0.23	0.12	0.39	0.45
Germany	0.46	0.35	0.40	0.46	0.54	0.36	0.34	0.34	0.32	0.29	0.39	0.19
Greece	0.33	0.45	0.69	0.32	0.34	0.39	0.26	0.55	0.65	0.57	0.46	0.31
Italy	0.65	0.55	0.64	0.78	0.80	0.78	0.69	0.72	0.49	0.39	0.65	0.20
Netherlands	0.24	0.29	0.27	0.24	0.18	0.16	0.18	0.19	0.24	0.17	0.22	0.20
Spain	0.57	0.64	0.72	1.43	0.77	0.50	0.49	0.43	0.44	0.24	0.62	0.49
Portugal	…	…	…	0.86	0.58	0.40	0.43	0.42	0.61	0.43	0.53	0.29
UK	0.95	1.27	1.24	0.87	0.33	0.30	0.20	0.18	0.24	0.23	0.58	0.73
Average EU	0.50	0.58	0.65	0.69	0.48	0.41	0.34	0.34	0.35	0.27	0.46	0.29
US	1.03	0.78	0.47	0.28	0.30	0.37	0.41	0.41	0.39	0.33	0.48	0.48

Source: OECD (2001)

virtually uncorrelated in the past. Using data on the correlation of the return on equity for European banks for the years 1979 through 1996 as provided by Berger et al. (2000a), we find an average correlation coefficient of 0.05. In integrated markets, we would expect a much closer link. Average return correlations for profits of banks across US regions, for instance, are substantially higher (0.44) (Berger and DeYoung 2001).

Table 3 provides comparative evidence on the performance of commercial banks in Europe and in the United States, using profits before taxes in percent of assets as a measure of profitability (Panel a) and net provisions in percent of assets as a measure of asset quality (Panel b). Generally, panel a shows that net profits have been much lower in the EU countries (average of 0.54 percent of assets) throughout the 1990s than in the United States (average of 1.64 percent). With regard to the volatility of profits, measured through the coefficient of variation, however, the regions are similar (0.27 versus 0.22). For net provisions, the picture looks somewhat different: whereas the averages are fairly close (0.46 percent of assets for Europe versus 0.48 for the United States), the volatility of provisions was higher throughout the 1990s in the United States than in Europe (coefficient of variation of 0.48 versus 0.29).

Before trying to explain differences in the profitability of banks and the possible impact of deregulation, we review briefly the empirical evidence on bank profitability in Europe. Studying the situation prior to the implementation of the Second Banking Directive, Molyneux et al. (1994) find a lack of integration of European banking markets. They are using the so-called Panzar-Rosse-statistic (*H*) which calculates the responsiveness of banks' total revenues to changes in input prices. If banks operate in a highly concentrated banking sector under conditions of monopoly or perfect oligopolistic collusion, they respond to changes in input prices, and *H* would be zero or negative. In perfectly competitive markets, banks act as price takers, and *H* would be unity.

Using essentially the same methodological approach, Bikker and Groeneveld (2000) argue that the results of Molyneux et al. (1994) are relatively unstable because they do not take into account the gradual changes in competition that have occurred in European banking. Adjusting for this and using data for the years 1989 through 1996, Bikker and Groeneveld (2000) generally obtain more stable results and conclude that the Second Banking Directive has not increased the degree of competition in European banking. Rather, the degree of competition appears to have been rather fierce already prior to the creation of the Single Market.

Casu and Molyneux (2000) use a different empirical methodology by analyzing to what extent the performance of banks in Europe deviates from an estimated efficient frontier. Their results are generally consistent with the other studies in that they find, if anything, only minor improvements in the efficiency of banks in Europe following the Second Banking Directive. However, their finding that efficiency levels are relatively low overall and are, moreover,

strongly influenced by country-specific factors is in contradiction to the conclusions of Bikker and Groeneveld (2000) that competition is and has been relatively intense throughout.

The importance of country-specific conditions is stressed also in Pastor et al. (2000). These authors are estimating a common frontier for banks from 10 European countries for the year 1993, taking into account factors such as regulatory or demographic factors unique to the individual country which might affect banking performance. One result is that differences in domestic conditions do indeed have a significant impact on relative banking performance. They distinguish three groups of banks: Facing relatively adverse economic conditions in their home markets, banks in Denmark, Portugal, and Spain yet achieve relatively high efficiency scores. Facing relatively favorable conditions on their home market, banks in France and Italy do not seem to be able to perform efficiently at home while banks in Belgium, Germany, Luxembourg, and the Netherlands do. In the case of these latter countries, the ability of domestic banks to exploit favorable conditions on their home market might thus explain difficulties of foreign banks to enter.

3 Cross-Border Integration of Banking: New Empirical Evidence

This section presents new empirical evidence on the determinants of cross-border banking. The aim of this section is two-fold. We intend to assess empirically (i) what the effects of deregulation on cross-border banking have been and (ii) how this has affected the efficiency of banks.

3.1 Deregulation and Cross-Border Banking

Earlier empirical evidence on the factors driving the international expansion of banks provides relatively strong support for the notion that policy-induced as well as market-inherent barriers prevent a greater integration of financial markets. Buch (2000) uses a panel dataset for bilateral assets and liabilities that banks in advanced market economies hold in a large cross-section of countries. Evidence is available for the years 1983 through 1999, hence the dataset allows the impact of changes in regulations to be analyzed.

The paper finds that the EU's Single Market program and the Basel Capital Accord tended to have a positive impact on intra-EU asset holdings and lending to OECD countries, respectively. In addition to regulations, information costs as proxied through distance, a common language, or a common legal system seem to have a significant impact on international investment decisions of banks. This supports evidence on the determinants of

international asset portfolios that finds a strong explanatory power for distance (as a measure of information costs) (Portes and Rey 2001, Ghosh and Wolf 2001).

Generally, information costs appear to be the main factor segmenting international financial markets. Yet, when weighing the relative importance of information costs and regulations, results differ between countries. While banks from some countries prefer to expand into markets to which they have close cultural ties, others prefer to access markets with relatively low regulatory entry barriers. In particular banks from Spain seem to exploit comparative advantages stemming from the presence of a common language and a common legal system.

In this paper, we provide complementary evidence on the determinants of international activities of banks. The focus is on the link between deregulation and international banking. Table 4 provides an overview of the data that we use.

Table 4 — Data Definitions and Sources

Variable	Definition	Source
foreign assets and liabilities	Gross foreign assets and liabilities of commercial banks, relative to total assets of banks	OECD (2001)
market shares of foreign banks	Assets of foreign banks in percent of total banking system assets.	World Bank (2001)
market size	GDP in billion US-Dollar and the size of the population (in millions) are used to control for country size. The expected effect is negative: large countries would be less open to foreign competition and/or capital flows than smaller countries.	IMF (2001)
state of development	The state of development is measured through GDP per capita. The expected effect is positive for gross foreign assets: more developed countries are likely to be more open for foreign capital and foreign competition. However, the fact that more developed countries typically have lower spreads may reduce their attractiveness for foreign competitors.	IMF (2001)
trade openness	Trade openness is measured as the sum of exports and imports relative to GDP.	IMF (2001)
deregulation	Four dummy variables are used to control for deregulation trends: (1) The Basel capital accord of 1988 has tended to raise the equity requirements for international banks. The isolated effect on gross assets would be negative. (2) EU membership. (3) The EU's Single Market program was addressed by including a dummy variable which was set equal to 1 after the implementation of the Second Banking Directive. (4) Alternatively, we used a combined EU dummy taking a zero value for non-members, a 1 for members prior to the implementation of the Banking Directive, and a 2 for members thereafter.	

Table 5 — Results of Panel Unit Root Tests

This Table presents the results of unit root tests for the time series under study. We are using three different tests. First, Levin and Lin (LL) (1993) have adjusted the standard ADF-tests for unit roots to panel data, allowing for time trends and short-run dynamics. As in the ADF-test, the Null that the variable contains a unit root is tested against the alternative that the variable is stationary. Second, Breitung (2000) has suggested a modified version of this test. His test corrects for a bias in the *t*-statistic, which occurs if more than one lagged endogenous variable is included, by estimating the model in deviations from the mean. The third test we use is the one proposed by Im, Pesaran, and Shin (IPS) (1997) which gives more flexibility with regard to the autocorrelation coefficient under the alternative hypothesis by performing ADF-tests for all cross sections and averaging over the estimated coefficients. We report results for a specification with a constant term and two lagged endogenous variable (one for the first differences of the profitability measures) but without a linear time trend. Results very invariant in qualitative terms to varying the lag length or including a trend. * denotes significance at the 5-percent level.

	Levels			First differences		
	LL	Modified LL	IPS	LL	Modified LL	IPS
Foreign assets / total assets	2.29	3.76	0.98	3.56	–7.62*	–2.51*
Foreign liabilities / total liabilities	4.76	1.96	3.07	1.60	–6.33*	–2.56*
Profit before taxes	–3.14*	1.13	–3.78*	–6.65*	–21.46*	–7.82*
Net interest income	12.95	120.75	5.32	–9.49*	–12.03*	–8.89*
Net non–interest income	1.29	8.04	1.19	0.10	–11.35*	–8.35*
Gross income	2.93	3.11	1.47	–3.11*	–15.13*	–8.08*
Operating expenses	4.53	0.90	3.71	–3.34*	–7.45*	–5.99*
Provisions	–13.06*	–14.03*	–5.60*	–7.69*	–15.82*	–6.95*

Based on two panel unit root tests that we employed, the hypothesis that our dependent variable is non-stationary could not be rejected (Table 5). Therefore, we estimated the model in first differences. More specifically, we estimate the following equation:

$$\Delta \log y_{it} = \Delta \log X_{it}\beta + \Delta R_{it}\gamma + \delta d_i + \varepsilon_{it},$$

where y_{it} are foreign assets and liabilities of the banking systems, X_{it} is the vector of controls for market size, state of development, and trade openness, R_{it} is the vector of regulation dummies, d_i is a country fixed effect, and ε_{it} is the disturbance term.

Regressions were run on a panel of OECD countries, using annual data for the period 1979–1999. Most of our banking data were taken from the publication *Bank Profitability — Financial Statements of Banks*, published by the OECD (OECD 2001). This dataset was complemented by macroeconomic data from the *International Financial Statistics* of the IMF (IMF 2001). Due to data limitations, the final sample had to be restricted to include the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Luxemburg, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and Turkey.

Table 6 reports estimation results on the determinants of the openness of the domestic financial sector, measured as the sum of the foreign assets and foreign liabilities of the banking system, normalized by total assets of banks.[6] The first three columns show our results for the full sample. The control variables population, GDP, and trade openness (measured as the sum of exports and imports over GDP) exhibit broadly stable coefficients across all specifications and are highly significant with the expected sign. In particular, the positive and highly significant coefficient on the trade variable supports the notion that openness for trade

Table 6 — Determinants of Banking Sector Openness

Equations are specified in first differences. The dependent variable is the log of the sum of the banking systems' foreign assets and liabilities, normalized by total assets. Robust t-values reported in brackets. *** (**, *) = significant at the 1 (5, 10)-percent level. BIS = dummy for Basle capital adequacy standards, 0 until 1987, 1 thereafter; EU = dummy for EU membership and Second Banking Directive; 0 for non-members, 1 for members before implementation of the directive, 2 for members thereafter; *bank* = dummy for Second Banking Directive; 0 before, 1 after implementation. The regressions include country fixed effects.

	Full sample			EU sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	–0.003	–0.004	–0.002	0.018	0.020	0.012
	(–0.172)	(–0.209)	(0.113)	(0.778)	(0.952)	(0.498)
log population	–0.375***	–0.289***	–0.357***	–0.307**	–0.313***	–0.333***
	(–5.469)	(–2.797)	(–4.701)	(–2.472)	(–2.601)	(–2.890)
log GDP	0.556***	0.406***	0.494***	0.289	0.267	0.309
	(4.788)	(4.521)	(5.011)	(1.415)	(1.413)	(1.560)
log trade openness	0.872***	0.694***	0.705***	0.787***	0.742***	0.774***
	(6.256)	(3.498)	(3.773)	(3.421)	(3.166)	(3.666)
BIS		0.195*	0.191*		0.047	
		(1.852)	(1.745)		(0.726)	
BIS_{t+1}			–0.082***			
			(–2.723)			
BIS_{t+2}			–0.074*			
			(–1.744)			
BIS_{t+3}			–0.067***			
			(–2.864)			
EU		0.117				
		(1.003)				
bank					–0.036	
					(–0.468)	
$bank_{t-4}$						0.092**
						(1.954)
adjusted R^2	0.361	0.399	0.393	0.362	0.365	0.374
Period	1979–99	1979–99	1979–99	1979–99	1979–99	1979–99
N*T	297	297	297	152	152	152

6 All equations were also run separately with the share of foreign assets and the share of foreign liabilities relative to total assets as a dependent variable, respectively. The results were broadly similar to those shown in the table for most equations. The exceptions are equations (2) and (3), where most notably the BIS dummy, although similar in magnitude, was not statistically significant. Moreover, we also experimented with the share of foreign banks in the total assets of the domestic banking system as a dependent variable. However, the explanatory power of these equations was very weak, and no clear relationship with any of our regulatory dummies could be established.

and financial openness are closely linked. The consistently negative sign on the population variable captures the fact that, in larger countries, economic and financial interaction with the rest of the world tends to be less important quantitatively than in smaller countries. Adding the coefficients on the logs of population and GDP, it turns out that per capita GDP has the expected positive impact on financial openness.

Column (1) of Table 6 shows our baseline regression, which does not include any proxies for the regulatory environment. Columns (2) and (3) show the impact of including dummies for the effect of the Basle capital adequacy standards of 1988 (BIS) and for the combined impact of EU membership and the implementation of the Second Banking Directive (EU). Our expectation is that the BIS Capital Accord, by requiring banks to hold more risk-adjusted capital would make them more hesitant to expand internationally. The impact of EU integration by contrast, should be positive, since the Single Market program has lowered barriers to cross-border banking.

The first thing to notice is that the overall explanatory power of the model does not increase by much when we include these additional variables. Moreover, only the effect of the Basle Accord is marginally significant, and its sign is positive. A possible explanation for this finding is that the introduction of these standards may have had two effects which tend to cancel each other out in a sample consisting only of OECD member countries. On the one hand, the standards established minimum requirements for the equity capital banks have to hold to support their international lending. To the extent that these minimum requirements were binding, this should have raised the costs to the banks of international lending, and should therefore have reduced their exposure. On the other hand, the new standards were lower for credits to debtors from OECD countries than for other international credits. Thus banks may have responded by shifting their international lending from non-OECD countries to now relatively cheaper OECD member countries.

We also investigated non-contemporaneous effects of changes in the regulatory environment, be it EU membership, the Second Banking Directive, or the Basle Capital Accord. Conceivably, banks might have responded pro-actively in anticipation of planned regulatory changes. Alternatively, banks might have adopted a wait-and-see attitude, delaying their response until after the implementation of regulatory changes. As it turns out, there is no indication in the data for any lagged responses, neither to the Basle standards, nor to EU integration. However, as shown in column (3), there are signs of advance effects of the Basle standards which run in the opposite direction of the contemporaneous effects. Again, one tentative explanation could be that the advance effects reflect the expected higher costs of foreign lending after the implementation of the standards, while the positive contemporaneous effect might reflect a substitution away from non-OECD countries after the actual implementation of the standards.

In the last three columns of Table 6, we investigate the effects of deregulation within the EU only. Restricting the sample does not materially affect the coefficients on our control variables, except that GDP is no longer significant. Adding the regulatory variables again does not raise much the model's explanatory power. Both the Basle-dummy and our dummy for the implementation of the Second Banking Directive (*bank*) do not have significant contemporaneous effects (column 5). However, there is some evidence for a lagged positive effect of the Second Banking Directive on financial integration (column 6).

Comparing these results with the earlier evidence found in Buch (2000), who uses bilateral data, the evidence suggests that, although deregulation has triggered a re-orientation of EU portfolios away from non-EU towards EU countries, it has not had a strong impact on the overall degree of openness of the EU banking systems.

3.2 Deregulation and Banking Efficiency

After having analyzed the link between deregulation and cross-border banking, we turn to the link between deregulation, foreign presence, and banking sector efficiency. We use a similar estimation strategy as in the previous section to identify the determinants of efficiency. An earlier study by Claessens et al. (2000) using firm-level data from 80 countries for the years 1988–1995 found that foreign bank entry significantly reduced domestic bank profitability, net non-interest income, and overhead expenses. No significant effects were found for net interest income and loan loss provisions. To the extent that high profits and high income reflect market power, and to the extent that high overheads reflect operational inefficiency, these results imply that foreign entry improves the efficiency of the domestic banking sector. Efficiency improvements may essentially come from two sources. Foreign banks may import best practices from abroad which domestic banks then copy. And foreign entry increases competitive pressure, thereby forcing domestic rivals to cut prices and costs.

We use the same dataset as before, i.e. aggregated, annual data on the profitability of banks to replicate the analysis of Claessens et al. (2000) for OECD countries. As dependent variables, we use the net interest margin, net non-interest income, profits before taxes, overhead costs, and loan loss provisions, all normalized by total banking sector assets. As explanatory variables, we include the number of foreign banks as a percentage of all banks as a proxy for financial sector openness[7] and deregulation (Basle and EU) dummies, as well as the ratio of equity over total assets, the ratio of non-interest income over assets, the ratio of

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[7] This proxy was taken from Worldbank (2001). Since this variable was available only for the period 1990-1997, we had to restrict the analysis to this period. We also ran similar regressions using the market share of foreign banks in terms of total assets or gross foreign assets and liabilities of commercial banks as alternative proxies for openness, but the results were inferior to those reported in the table.

overhead expenses of assets, GDP per capita, growth, inflation, and real interest rates as controls. Following Claessens et al. (2000), the equations are specified in first differences.[8] After eliminating missing observations, the following countries were included in the regressions: Austria, Australia, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

Our results are given in Table 7. The alternative specifications explain between 18.5 and 34 percent of the variance in the data. The ratio of equity to assets has a positive and frequently significant impact on the three profit measures in columns (1) through (3). However, the required real rate of return, as proxied by the real interest rate, remains mostly statistically

Table 7 — Determinants of Banking Sector Efficiency

Equations are specified in first differences. Robust t-values reported in brackets. *** (**, *) = significant at the 1 (5, 10)-percent level. Net interest margin is interest income less interest expenses; net non-interest income is non-interest income less expenses related to non-interest income; profits before taxes is net interest margin plus net non-interest income less overhead costs and loan loss provisions; equity is capital plus reserves. These variables are all normalized by total assets.

	Net interest margin (1)	Net non–interest income (2)	Profit before taxes (3)	Overhead costs (4)	Loan loss provisions (5)
Constant	–0.000	0.000	0.000	–5.59e–06	–0.000
	(–1.412)	(0.866)	(0.229)	(–0.015)	(–0.352)
Equity	0.110*	0.015	0.266***	0.147**	–0.142*
	(1.793)	(0.232)	(2.786)	(2.304)	(–1.866)
Overhead costs	0.130**	0.490***	–0.688***		0.308**
	(2.214)	(4.756)	(–3.917)		(2.155)
GDP per capita	–0.279**	–0.180	–0.322*	–0.262	–0.137
	(–2.222)	(–0.713)	(–1.787)	(–0.942)	(–1.360)
GDP	2.813*	0.668	3.984***	0.879	–0.544
	(1.897)	(0.344)	(2.727)	(0.286)	(–0.448)
Inflation	0.001*	–0.001**	–0.0003**	–5.54e–06	0.000
	(1.658)	(–2.326)	(–2.246)	(–0.060)	(0.235)
Real interest rate	0.001	–0.001**	–0.000	–0.000	0.000
	(1.371)	(–1.942)	(–1.412)	(–0.080)	(0.362)
Number of foreign	0.009	0.000	0.024**	–0.024	–0.015
banks/all banks	(0.834)	(0.021)	(1.919)	(–1.300)	(–1.501)
Dummy for 2nd Banking	–0.001	–0.001	–0.000	–0.000	–0.002**
Directive	(–0.747)	(–1.504)	(–0.358)	(–0.420)	(–2.086)
EU membership dummy	0.001	0.003**	0.005***	0.001	–0.002
	(0.365)	1.925	(3.331)	(0.233)	(–0.834)
adjusted R^2	0.312	0.340	0.346	0.186	0.227
Period	1990–97	1990–97	1990–97	1990–97	1990–97
N*T	145	145	145	145	145

[8] Because profitability measures can take on negative values, we do not take logs of our dependent variables. We experimented with semi-logarithmic specifications, but found them statistically inferior to the ones reported in Table 7.

insignificant. Also, the inflation rate often enters with a negative sign. These last two results are in contrast to the findings of Claessens et al. (2000). Country size as proxied by GDP has a positive effect on the net interest margin and on profits before taxes, while the level of economic development as measured by per capita GDP has a negative, although frequently insignificant effect.

Taken together, these results suggest the following. First, higher profits in larger countries might be due to economies of scale. Second, a stronger regulatory environment in more developed countries seems to lead to lower market power and hence lower profits. However, in specifications not shown in the table, we also attempted to capture scale and competition effects with a proxy for market concentration, and failed to find consistently significant effects. By the same token, including measures of the development of financial market which might exert competitive pressure on banks, such as stock market capitalization or turnover relative to GDP, the size of the private and public bond markets relative to GDP, or the volume of new equity and bond issues, did not systematically improve the model.

In contrast to the findings of Claessens et al. (2000), the presence of foreign banks does not appear to significantly reduce profits or costs in our aggregate data for OECD countries. One reason for the discrepancy could be that Claessens et al. are looking at the efficiency of domestic banks only, whereas our aggregate data include both domestic and foreign banks. In addition, the result of Claessens et al. may be driven primarily by the non-OECD, less developed countries in their sample. Given earlier findings that foreign banks tend to be less efficient than local banks in developed countries (De Young and Nolle 1996, Mahajan et al. 1996, Vander Vennet 1996, Hasan and Lozano-Vivas 1998, Miller and Parkhe 1999, Parkhe and Miller 1999), positive efficiency effects on domestic banks would have to come primarily via increased competitive pressure in our sample. Possibly, this effect has been stronger in non-OECD countries whose banking markets may have been less competitive prior to foreign entry. Moreover, a priori the causality between foreign entry and the efficiency of the domestic banking industry could also go the other way. It is conceivable that foreign banks enter preferably those markets where efficiency has been low and where competition has been weak. Thus, positive or insignificant coefficients on foreign bank presence may to some extent reflect self-selection of foreign entrants into inefficient markets.

As for the regulatory environment, the Second Banking Directive had a significantly negative effect on loan loss provisions in our sample, but had no significant impact on either overhead costs or profitability measures. These results thus broadly confirm earlier assessments of a limited impact of the Second Banking Directive (Bikker and Groeneveld 2000, Casu and Molyneux 2000). As to the issue whether this can be attributed to previously high competitive pressure in the EU banking industry as compared to the rest of the OECD, our results suggest otherwise. After controlling for the impact of the Second Banking

Directive, EU members have significantly higher pre-tax profitability and net non-interest income, but no cost advantage, suggesting the presence of anti-competitive rents.

It should be noted, though, that market power and the associated rents can also be the result of banks' investments into monitoring. That is, by spending resources to overcome information asymmetries between lenders and borrowers, banks may gain informational advantages over potential competitors and hence may gain market power. To the extent that monitoring facilitates the banks' lending decisions and thereby improves the allocation of capital, those improvements would have to be set against possible distortions caused by market power. Viewed from this perspective, care needs to be exercised before interpreting declines in profitability as evidence of gains in overall efficiency. However, if increased competitive pressure and the resultant erosion of market power really forced banks to scale back their monitoring activities, the associated inefficiency in the allocation of capital should presumably show up as a deterioration of asset quality and hence as an increase in loan loss provisions. We do not find any evidence of this in our data.

4 Summary of Results and Policy Implications

The degree to which financial markets in Europe are integrated with each other is of concern to policy-makers, researchers, and practitioners for several reasons. Countries which are closely linked financially might expose themselves to spillovers of financial crises. Monetary and fiscal policies are constrained by the interregional mobility of capital. And, not least, the efficiency of the financial system is affected by the degree to which it is integrated into international capital flows and by the degree to which it is exposed to competitive pressure from abroad. Therefore, the purpose of this paper has been to analyze financial linkages in Europe, in particular in Europe's banking systems, and to single out factors potentially segmenting financial markets.

Showing the changing degree of integration of markets and the importance of bilateral financial linkages, however, is a difficult task. Recent data on the allocation of financial assets of EU countries show that the bulk of assets is held within Europe. Also, the degree of openness of financial systems of the EU countries has increased over the past decades. This might suggest that the potential for spillover effects within the region are large. Compared to total domestic credit, bilateral financial linkages among EU countries, however, still remain small. The notable exception are claims of Germany as the largest creditor in Euroland on a number of smaller member countries.

In contrast to the relatively rapid increase in foreign assets and liabilities of commercial banks, market shares of foreign banks have so far remained small in most EU countries. Analyses of the correlation of returns across European banking markets suggest that there

remains a considerable degree of segmentation. Evidence from the US also shows that particularly retail markets feature quite significant "natural" barriers to entry. While banks have expanded relatively quickly after geographical deregulation, the scale of their regional expansion seems to have been restricted nevertheless. Essentially, the evidence from the US confirms that retail banking is a local business.

We complement the available empirical evidence on the determinants of international integration of the banking industry and the impact of integration on efficiency by using panel data on OECD banking industries for the period 1979-1999. Apart from controlling for market size, level of economic development and trade links, we focus particularly on the impact of changes in the regulatory environment on financial openness. The introduction of the Basle capital adequacy standards generally raised the capital requirements for international lending, and also introduced different minimum standards for credits to borrowers from OECD and from non-OECD members. To the extent that the new standards were binding, they should have made foreign lending more expensive, and particularly so to borrowers from non-OECD countries. We find some evidence consistent with the notion that the introduction of the Basle standards has not just let to a reduction in foreign lending, but also to some substitution from non-OECD to OECD borrowers. By contrast, EU membership per se does not seem to have an impact on financial openness. However, we find some tentative evidence for a positive, if delayed impact of the implementation into national law of the Second Banking Directive.

In contrast to some prior research, a larger foreign presence in a domestic banking market does not appear to lead to improvements in industry-wide efficiency in our sample. This is consistent with earlier findings that foreign banks are often less efficient than their domestic counterparts in developed countries, but it also suggests that in OECD countries, the – fairly low – levels foreign entry observed so far have not significantly increased competitive pressure. With respect to the regulatory environment, EU membership, if anything, appears to be associated with higher profit levels, suggesting that competitive pressures have been below average in the EU. However, we do find some limited evidence that the implementation of the Second Banking Directive has led to efforts to raise the quality of loan portfolios.

Although there are several avenues along which the empirical analysis presented in this paper could be extended and modified, there are several results which are fairly robust and which can be used to derive implications for economic policy:

First, even though substantial progress towards liberalization of financial markets in Europe has been made and even though many direct policy-induced barriers to financial integration have been abolished, financial markets are likely to show a greater degree of segmentation than those of a national monetary union in the future. This is because there remains a substantial amount of indirect policy-induced barriers to integration such as government ownership in the financial sector and country-specific financial sector regulations which tend

to favor incumbent financial institutions. Moreover, "natural", market-inherent barriers to integration will remain important that stem from differences in preferences or from information costs. This also implies that, while there certainly is scope for economic policy to further contribute to greater integration, some degree of segmentation of financial markets will remain. The Financial Services Action Plan (FSA) spells out a number of initiatives intended to further reduce information costs within the EU.[9] However, in light of the evidence on the limits to financial market integration even within a single country like the United States, expectations for significant further increases in market integration emanating from these initiatives should not be exaggerated.

Second, the persistence of barriers to the integration of financial markets has implications for macroeconomic policy. In imperfectly integrated markets, macroeconomic policies retain degrees of freedom, and regional factors are important in shaping policy decisions. While, for instance, money markets and bond markets are integrated to a considerable degree internationally, banking markets are much more segmented. Moreover, the integration of financial markets can be considered a relatively gradual process. While some forms of capital are relatively mobile internationally, the bulk of capital tends to be invested locally. This has two implications for policy-makers: On the one hand, markets for securitized financial assets punish unsustainable economic policies relatively quickly. On the other hand, policy-makers do retain quite some leverage, in particular with regard to taxing those forms of capital that cannot easily move across borders.

Third, the results of this paper also have implications for banking supervision. There has been an intensive debate in the theoretical literature focusing on the possible links between deregulation, the geographical expansion of banks' activities, and the resulting increased competitive pressure on the incumbent financial institutions. Since increased competition tends to put downward pressure on interest rate spreads, it could be argued that banks are likely to cut down on their monitoring activities and to increase their risk-taking in response to deregulation. Banking supervision, in turn, would have to respond by tightening controls and by possibly re-designing regulations.

The need to reform banking supervision may appear particularly acute in Europe not only because increased competition may make banking more risky but also because, currently, banking supervision in Europe is organized in a relatively heterogeneous way. At the same time, structural changes in the composition of the banking sector affect the effectiveness of banking supervision. On the one hand, the increasing integration of financial markets and the

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9 These include most notably the initiative to give EU companies the option to use International Accounting Standards and to enhance the comparability of financial reports issued by EU companies, the European passport for fund management companies, the initiative to establish codes for best practice with regard to the provision of information to consumers, and the initiative for enhanced disclosure of the activities of banks and other financial institutions.

positive effects that deregulation has had on cross-border banking has affected the operations of many, notably larger banks. On the other hand, the activities of many, in particular smaller banks, remain confined to relatively small regional market niches. Hence, banking regulations must continue to take account of the fact that regional shocks will remain pervasive. Just as it is difficult to draw a clear distinction between national and international banks, the dividing line between different types of financial institutions becomes increasingly redundant. Generally, however, the expansion of banks into new fields, both geographically and by type of activity, necessitates a tighter coordination of banking supervision internationally. The steps in this direction spelled out in the EU Financial Services Action Plan are therefore welcome.

Fourth, banking supervisors not only have to decide how to supervise incumbent financial institutions, the degree to which foreign banks should be allowed to enter national financial markets has always been an important policy issue as well. Currently, this issue may seem of lesser importance in developed market economies, where entry has de facto been liberalized, than in emerging markets. Yet, also in developed countries, implicit barriers such as state-ownership in banking remain important deterrents to foreign entry. Notwithstanding the difficulties that all foreign banks are facing in entering a new market, superior skills and privatization programs have drawn many foreign banks to emerging market economies. Both of these factors are much less evident when deciding to enter a banking market of a relatively mature market economy. If competition in the host country is relatively fierce already and if profit margins are relatively low accordingly, it may simply not be profitable for a bank to incur the fixed cost of entering that market. Hence, low market shares of foreign banks need not necessarily reflect a lack of competition but, quite to the contrary, might be reflecting relatively fierce competition.

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