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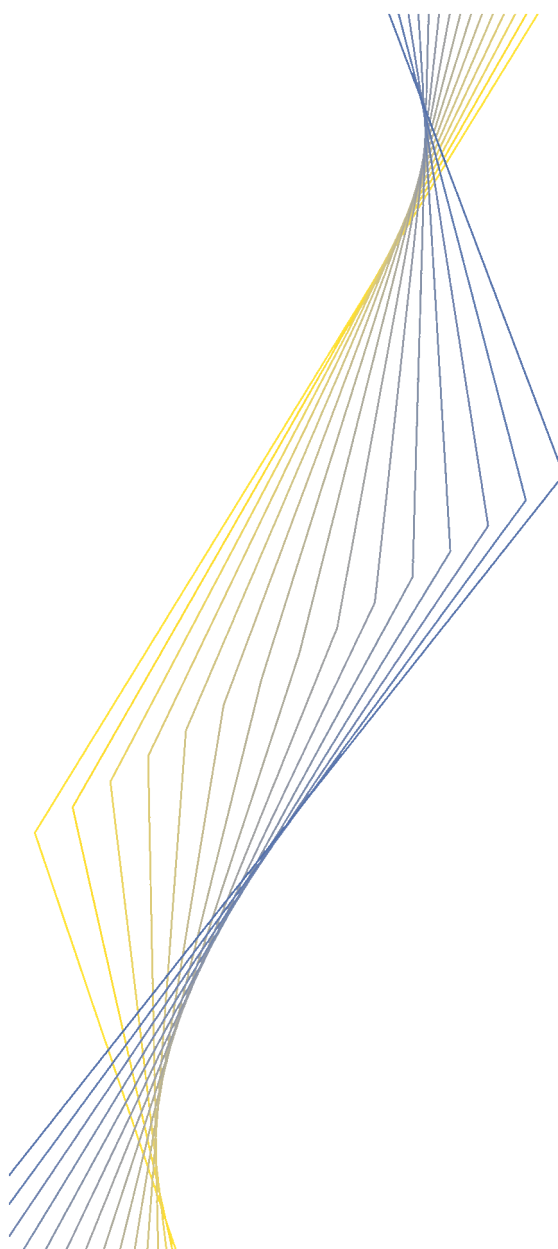
**WORKING PAPER NO. 230**

**THE EURO AREA FINANCIAL  
SYSTEM: STRUCTURE,  
INTEGRATION AND POLICY  
INITIATIVES**

**BY PHILIPP HARTMANN,  
ANGELA MADDALONI AND  
SIMONE MANGANELLI**

**May 2003**

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<sup>1</sup> We appreciated Marco Pagano's comments on an outline of this paper and also early comments by Vitor Gaspar. Research assistance by Anna Maria Agresti, Sandrine Corvoisier and Fabio Moneta is gratefully acknowledged. We thank participants to the Oxford Review of Economic Policy editorial meeting at the European University Institute in Florence, in particular Christopher Allsopp, Mike Artis (the editors) and our discussant Eric Fisher. The points made by an anonymous referee helped us to improve the paper. The opinions expressed herein are those of the author(s) and do not necessarily represent those of the European Central Bank or the Eurosystem. This paper can be downloaded without charge from <http://www.ecb.int> or from the Social Science Research Network electronic library at: [http://ssrn.com/abstract\\_id=xxxxxx](http://ssrn.com/abstract_id=xxxxxx)

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ISSN 1561-0810 (print)

ISSN 1725-2806 (online)

# Contents

Abstract	4
Non-technical summary	5
Introduction	7
2. Financial structures of “G-3” economies	8
2.1 International comparison	9
2.2 Recent changes in the financial structure of the euro area	13
3. Financial integration in the euro area	17
3.1 Money markets	17
3.2 Bond markets	20
3.3 Equity markets	24
3.4 Banking	28
4. Main policy initiatives to improve financial integration in Europe	33
4.1 The financial services action plan of the European Commission	34
4.2 The Lamfalussy report on the regulation of European securities markets	35
4.3 The application of the Lamfalussy framework to the banking sector and the reform of the financial services policy group	37
4.4 The work of the Giovannini Group	39
5. Conclusion	41
References	43
European Central Bank working paper series	48

**Abstract:** Four years after the introduction of the euro, this paper provides an overview of the current structure and integration of the euro area financial systems and related policy initiatives. We first compare the euro area financial structure with that of the United States and Japan. Using new and comprehensive financial account data, we also describe how the euro area financial structure evolved since 1995. We document the progress towards integration of the major euro area financial segments, namely money markets, bond markets, equity markets and banking. Finally, we discuss recent policy initiatives aimed at further improving European financial integration.

Key words: financial system design, financial structure, financial integration, euro area, financial policy

JEL Codes: G00, F36

## NON-TECHNICAL SUMMARY

This paper describes the main developments in the euro area financial markets before and after the introduction of the single currency. It first compares the financial structure of the euro area with that of the United States and Japan. It documents how the euro area financial structure is placed somewhat in between those of these two countries, with financial institutions playing an important role, but with market based instruments developing further. It then looks at the evolution of the euro area financial structure in the last few years. It shows how the importance of government financing has gradually diminished in the period under review, while one of the most dynamic financial market developments was the expansion of the market for corporate bonds. The increased bond issuance, however, has not yet led to a regime shift in which market-based instruments have to a significant extent substituted loans and private equities as the primary means of corporate financing in continental Europe. Interestingly, in various dimensions the financial structure of euro-area countries seems to become more diverse over time.

We assess the progress towards financial integration in the most important euro-area financial segments, namely money, bond, and equity markets, as well as banking. The available data suggest that the unsecured money market strongly integrated with the introduction of the euro, as the single currency and related euro-area-wide large-value payment systems link the different countries well. The same cannot be said, however, about the repo market. Government bond markets also integrated considerably with the EMU convergence process, but they still exhibit some small (but non-negligible) cross-country yield differentials since January 1999, that cannot be explained with credit risk. Moreover, as different sovereigns focus their issuance on different maturities, there is no single homogeneous benchmark yield curve, which hinders arbitrage and derivatives pricing. As the euro made primary corporate bond markets more contestable, in particular regarding foreign competition, one important factor in the development of this market was a considerable reduction of underwriting fees. Also, some progress occurred in the integration of euro-area equity markets, as stock exchanges in a few countries merged to form Euronext and professional asset managers replaced country allocation by sector allocation strategies. Powerful obstacles to the further integration of repo, bond and equity markets remain the still fragmented securities settlement industry in Europe, which charges much higher fees for cross-border transactions than for domestic transactions, and differences in legal systems. Overall, while asset holdings have become more international in the euro area since the introduction of the single currency, securities markets are still much less integrated than in the US. In the area of retail banking the increased homogeneity of interest rates seems to be driven more by macroeconomic convergence than by market integration. For example, cross-border loans to non-banks have somewhat increased, but remain a very small fraction of total lending. This is quite different in wholesale activities, as inter-bank lending jumped up with the introduction of the euro and banks' cross-border securities holdings also expanded considerably. While the strongly domestic bias in the consolidation strategies of European banks has

only changed very mildly recently and while the single European passport to create foreign bank branches seems not to be used very much, it is interesting to report that also in the US cross-state penetration by banks still remains quite limited.

Finally, the paper discusses in detail the most important high-level policy initiatives to foster financial integration in Europe: the Commission's Financial Services Action Plan, the Lamfalussy Committee of Wise Men and the application of its work to all financial sectors, as well as the work of the Giovannini Group. We review the main microeconomic and legal reforms identified in and tackled after these initiatives, and we document the institutional changes to which they led. For example, recent institutional changes for cross-border supervisory co-operation seem to have laid out the path through which a more centralised European supervisory structure may emerge in the future.

## INTRODUCTION

In the last two decades the financial systems of industrialised countries have gone through profound changes. The importance of traditional banking intermediation from deposits to loans has diminished. Capital markets have considerably developed. Many financial innovations have emerged and at the same time we have witnessed a substantial shift toward institutionalised management of savings. National and international boundaries that limited the geographic scope of trade in financial services have been eroded. The activities performed by banks have changed to keep pace with this transformation.

The main driving forces behind these developments were the significant demographic changes, the wave of financial liberalisation, the information technology revolution that characterised the past two decades, as well as the launch of the European Economic and Monetary Union (EMU).

It is essential to document and monitor this transformation, because it might have important economic and political implications. For instance, it is now widely accepted that the *size* of the financial system is strongly correlated with the level of economic development (King and Levine 1993, Levine, 1997). Different financial system *structures* (sometimes also called architectures) have different welfare implications. Bank-based systems provide better inter-temporal and worse cross-sectional risk sharing than market-based systems (Allen and Gale 1995 and 2000). They also influence borrowers' choices of financing source, ultimately affecting the rate of financial innovation and the likelihood of investing in new/riskier technologies (Thakor 1996, Boot and Thakor 1997, Rajan and Zingales 2003). Moreover, increased financial *integration* can reduce the cost of capital and thereby spur economic growth. Two recent reports estimate the effect of substantial further integration in Europe at about 1 percent increase in GDP growth (Giannetti et al. 2002 and London Economics 2002). Similarly, developed and integrated capital markets can improve the welfare of countries joining a monetary union, by achieving better income insurance and consumption smoothing through cross-ownership of productive assets and access to outside credit markets (Sorenson and Yosha 1998, Yosha, Kalemli-Ozcan and Sorenson 2001).

Monitoring and understanding financial system transformation is of major importance for the core functions of central banks as well. Changes in the banking sector and in financial markets may affect the monetary transmission mechanism (see e.g. Ehrmann et al. 2003 and Chatelain et al. 2003). Financial development may change the choice and quality of financial market indicators of underlying economic variables that central banks employ in their conjunctural analysis to take monetary policy decisions (Issing 2002). Central banks use modern financial contracts to provide the liquidity the banking system needs to fulfil its function. As the financial system evolves and as this evolution affects the money market, these operational procedures may have to be adjusted as well, including the selection of assets accepted by central banks as collateral against the provision of liquidity. Financial transformation can also have implications for the design, efficiency and safety of large-value payment systems. Although less well known to the general public, this is another major task of central banks. The Eurosystem, for



example, is responsible for TARGET, a real-time gross settlement system that allows for intra-day overdrafts against adequate collateral.<sup>1</sup> Again, changes in the relative importance of different assets accompanying the development of the financial system may require, inter alia, adjustment of central banks' collateral policies. Finally, structural change in financial systems can be associated with the emergence of instability. As central banks play an important role in maintaining financial system stability, they need to follow such structural change carefully (Padoa-Schioppa 2003).

In the light of these arguments, it should not be surprising that European political and monetary authorities put great emphasis on financial reforms and the integration process in euro area financial markets. Four years after the introduction of the euro this paper provides a broad but concise overview of the current structure and integration of the euro area financial system and related policy initiatives. The paper contains three main sections. In the next section, we describe how the euro area financial structure changed since 1995, and compare it with the United States and Japan, using new and comprehensive financial account data. Moreover, it is examined whether financial structures across European countries have become more similar after the introduction of the single currency. Section 3 assesses the progress toward financial integration in the major euro-area financial segments, namely money markets, bond markets, equity markets and banking. This section also describes some of the most interesting financial developments that occurred alongside with the integration process, partly spurred by the euro. Finally, in section 4 we briefly present some main policy initiatives aimed at further advancing the process of European financial integration. We will describe in some detail the Financial Services Action Plan of the European Commission, the Lamfalussy approach to reform the process of securities market regulations and its application to other financial sectors, as well as the work of the Financial Services Policy Group and of the Giovannini Group. Section 5 concludes.

## **2. FINANCIAL STRUCTURES OF “G-3” ECONOMIES**

A financial system is defined by the set of institutions (markets and intermediaries) through which households, corporations and governments obtain funding for their activities and invest their savings. In a given financial system, the mixture of financial markets and intermediaries operating in the economy defines the financial structure of that system. As discussed in the introduction, different financial structures might have different economic and welfare implications for a given financial system. Therefore, it is important to understand the current structure of the European financial system and how it is transforming. In sub-section 2.1, we first compare the financial structures of the three main economic areas of the world: the euro area, the United States and Japan. In sub-section 2.2, we then focus our attention on the euro area, describing how its financial structure has evolved over the past six years. We

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<sup>1</sup> TARGET stands for Trans-European Automated Real-time Gross settlement Express Transfer system.

will not enter the debate on whether one structure is better than another one. We will limit ourselves to describe the current developments, pointing out the most important changes.<sup>2</sup>

## 2.1 International comparison

Table 1 offers a broad overview of the financial structures of the three main economic areas of the world. In terms of overall size, expressed in percentage of GDP, the euro area financial system is similar to the one of the United States, and smaller than Japan. The greater size of the Japanese financial system is related to the much greater weight of Japanese banks.<sup>3</sup>

**Table 1** – Overall picture of the financial structure in the euro area, United States and Japan at the end of 2001, with breakdown by sector. All the values are expressed in percentage of GDP.

		Assets	Liabilities	Net Position
Euro area	Households	202	57	145
	Non-financial corporations	147	240	-93
	Financial corporations	371	369	2
	Government	28	80	-52
	Total	748	746	2
United States	Households	322	80	242
	Non-financial corporations	112	132	-20
	Financial corporations	334	332	3
	Government	20	62	-42
	Total	788	606	182
Japan	Households	281	78	203
	Non-financial corporations	140	250	-110
	Financial corporations	596	598	-2
	Government	86	146	-60
	Total	1,104	1,072	32

Source: ECB, Federal Reserve System and Bank of Japan

Two common features emerge from table 1. First, households have a large positive net position in financial asset holdings. Second, financial corporations, given their role as financial intermediaries, have a net position close to zero. Therefore, households can be regarded as the ultimate providers of funds for non-financial corporations and governments.

<sup>2</sup> This exercise is largely based on euro area financial account data – compiled according to the European System of Accounts (ESA 95) – which provide a detailed and complete overview of the financial relationships between economic sectors in a country (see European Central Bank 2002a). However, the best available data are in general not consolidated, which means that double counting occurs and it may not be homogeneous across sectors.

<sup>3</sup> The financial accounts data for the euro area, the United States and Japan are not fully comparable. In particular, we should note that in the US financial accounts statistics, sole proprietorships and partnerships without independent legal status that are market producers belong to the “non-financial corporations” sector, while in the euro area and Japanese financial accounts these belong to the “households” sector. Marketable assets and liabilities are generally valued according to their market value. However, in the US financial accounts, except when the market value of equities is reported as a separate item, almost all the series are shown at book, or historical values. The importance of the Japanese financial sector, as shown in table 1, reflects in part the non consolidation of the interbank business.

The overall picture displaying households as financing the other two domestic, non-financial sectors and the position of the euro area vis-à-vis the rest of the world (see the total net position in Table 1) has been broadly stable since the mid 1990's. All gross financial positions have been increasing relative to GDP, except the government sector. For this sector, the ratio of financial assets relative to GDP has been stable, while liabilities have fallen, leading to a slight improvement of the financial position of governments over the period. In the euro area, this development has been accompanied by an increased indebtedness of corporations, which changed from about 59% of GDP in 1995 to around 74% in 2000.<sup>4</sup> This ratio is comparable to the one in the U.S. (66%), but lower than the Japanese one (127%) (See European Central Bank 2002a). However, there were marked differences across euro area countries. Firms in countries like France, Germany, Italy and Spain were generally less indebted than companies in the Netherlands, Portugal and Finland.

Tables 2 and 3 present the breakdown by asset of the investment and source of funding for the different sectors. In terms of debt financing, non-financial corporations in the euro area and in Japan resort to a much larger extent than US corporations to loans (see table 2). Bonds represent a significant source of funding for U.S. and Japanese non-financial corporations, while they are still relatively unimportant in the euro area. However, as we will see in sub-section 2.2, a boom in corporate bond issuance for non-financial corporations in the euro area has been one of the most striking developments happening contemporaneously with the introduction of the single currency.

**Table 2** – Source of financing in the euro area, United States and Japan at the end of 2001, with breakdown by sector. All the values are expressed in percentage of GDP. Shares of non financial corporations for the United States are estimated with the market value of shares of “Non Farm Nonfinancial Corporate Business” as reported in Table L.102 of the flow of funds accounts.

		Loans	Debt Securities	Shares	Currency & Deposits
<b>Euro area</b>	Households	52	0	0	0
	Non-financial corporations	68	8	132	0
	Financial corporations	12	50	75	170
	Government	15	57	0	4
	Total	95	115	207	174
<b>United States</b>	Households	75	2	0	0
	Non-financial corporations	40	29	108	0
	Financial corporations	32	87	73	59
	Government	0	47	0	0
	Total	72	163	181	59
<b>Japan</b>	Households	67	0	0	0
	Non-financial corporations	99	25	75	0
	Financial corporations	107	57	19	241
	Government	36	103	2	0
	Total	242	186	96	241

Source: ECB, Federal Reserve System and Bank of Japan

<sup>4</sup> The degree of indebtedness of the non financial corporations is calculated as the sum of all liabilities excluding shares, technical reserves and other accounts payable.

The importance of private equity (unquoted shares) seems to be a peculiar characteristic of the euro area financial system, due to the fact that euro area economies have a relatively large proportion of small and medium-sized enterprises (SMEs).<sup>5</sup> Indeed, 66% of all employees in Europe are employed in SMEs, compared with 46% in the United States and 33% in Japan (European Commission 2002b). Partly as a consequence of this, many euro area companies either resort to banks to finance their activities, or use extensively unquoted shares.

On the investment side, households in the U.S. have a much stronger preference for equities (representing 147% of GDP) than in the other two economies (67% for the euro area and 21% for Japan), where they hold higher amounts of currency and deposits (see table 3). There are several hypotheses that can explain such differences in households' behaviour. For example, social security benefits differ significantly across countries and are likely to affect the investment choices of households. Indeed, the large diffusion of company retirement accounts in the United States (the 401K) might imply that US households hold indirectly more shares than their euro area counterparts. Moreover, in the euro area, where social security benefits are more generous, people have a lower incentive to invest in securities to support their retirement (see, for example, Poterba 2001 and Ang and Maddaloni 2003). Differences in taxation of capital gains and in the treatment of bequests might play a role as well (Poterba 2003).

**Table 3** – Investments in the euro area, United States and Japan at the end of 2001, with breakdown by sector. All the values are expressed in percentage of GDP. The investment in shares of non-financial corporations in US represent only “investment in finance companies subsidiaries” and it does not include investments in foreign companies as reported in tables L.102 and L.103 of the flow of funds accounts.

		Debt Securities	Shares	Currency & Deposits
<b>Euro area</b>	Households	19	67	61
	Non-financial corporations	9	77	15
	Financial corporations	80	69	77
	Government	2	9	6
	Total	110	222	159
<b>United States</b>	Households	23	147	48
	Non-financial corporations	2	2	14
	Financial corporations	111	85	16
	Government	7	2	3
	Total	142	235	80
<b>Japan</b>	Households	17	21	153
	Non-financial corporations	9	21	36
	Financial corporations	140	29	39

<sup>5</sup> Good and comprehensive data on private equity are not readily available. However, one can deduce its importance from juxtaposing the figures in the column “equities” of tables 2 and 3 (which include both private and public equity financing or holding) with data on stock market capitalisation, which is available from the Federation Internationale des Bourses de Valeur (<http://www.fibv.org>). However, data shortcomings also require a word of caution. Full coverage of private shares is not available in all euro area countries, and significant differences in the valuation methods applied to these instruments across countries persist.

Government	10	14	9
Total	175	85	237

Source: ECB, Federal Reserve System and Bank of Japan

Equity investment tends to be more popular among euro area non-financial corporations (they hold 77% of GDP in shares) than in Japan and the United States, where shareholdings by the corporate sector are limited to 21% and 2% of GDP, respectively. The fact that euro area non financial corporations have a significantly higher propensity to hold shares than to hold other securities compared to their US and Japanese counterparts might reflect that corporate cross-shareholdings are an important (albeit not much studied) phenomenon in the euro area.<sup>6</sup>

The data reported so far confirm also that financial institutions play a bigger role in the euro area and Japan than in the US. These findings are consistent with the traditional distinction that characterise continental European and Japanese financial systems as “bank-based”, and the U.S. system as more “market-based” (see, for example, Allen and Gale 2000). However, the continental European system is no longer “bank-based” in the same way as it was in the past. While credit institutions are still the preferred source of intermediation for financial investments in the euro area, their “traditional” business is on a relative decline compared to other intermediaries, such as investment funds, pension funds and insurance companies. This trend can be observed throughout the euro area, although with particular strength in Belgium, France and Italy. More permissive regulations of investment and pension funds, as well as tax advantages for investors in life insurance products, played some role in these developments. The introduction of the euro might have further strengthened the movement away from traditional bank deposits, given that the disappearance of currency risk has facilitated cross-border diversification of portfolios, thus increasing the demand for securities (see also section 3). The increase in demand for longer term high-yielding securities also reflects the ageing population in the euro area, which enhances long term savings and hence the channelling of funds into mutual funds, pension funds and insurance companies. At first sight, it might seem that the importance of banks has been diminishing relative to other types of intermediaries. However, the fact that mutual funds to a wide extent are managed and marketed by banks, as well as the fact that banks are increasingly involved in insurance and pension fund businesses (“bancassurance”), indicate that the role of banks in the intermediation process is changing rather than diminishing.

In summary, we notice that financial institutions have a great weight in the Japanese financial system, where loans remain by far the most relevant source of funding for corporations. Market based instruments are much more developed in the United States, as shown by the importance of equities and

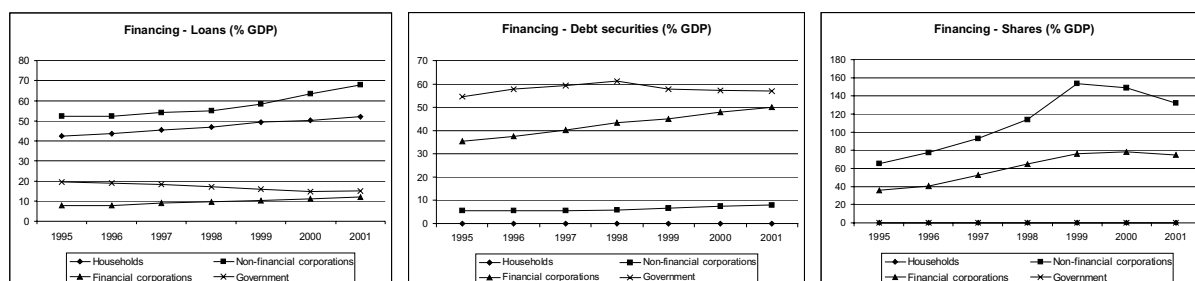
<sup>6</sup> Data refers to both domestic and foreign shares. For a discussion of the use of cross shareholdings in euro area countries, both in the financial and in the non-financial sectors, see also Morin (2000), Gorton and Schmid (2000) and Focarelli and Pozzolo (2001).

bonds as sources of financing for non-financial corporations and as investment devices for households. The euro area financial system is placed somewhat in between, with financial institutions playing an important role, but with market based instruments developing further.

## 2.2 Recent changes in the financial structure of the euro area

We now look at the evolution of the euro area financial structure in the last few years. Figure 1 shows how assets and liabilities were allocated among the four main sectors from 1995 to 2001. Two main features emerge. First, non-financial corporations have increased their share of total assets at the expense of the household and government shares, especially after 1999. Second, on the liability side, fiscal consolidation and the constraints imposed by the Stability and Growth Pact have led governments to reduce their budget deficits and debt exposures. Arguably, this reduction of government financing created room for more financing of non-financial corporations, as shown by the substantial increase in their share of liabilities. This may have been prompted, on the one hand, by a general decrease of interest rates, which fostered investments by the corporate sectors. On the other hand, investors looking for long-term, fixed income instruments had to turn more to non-government assets.

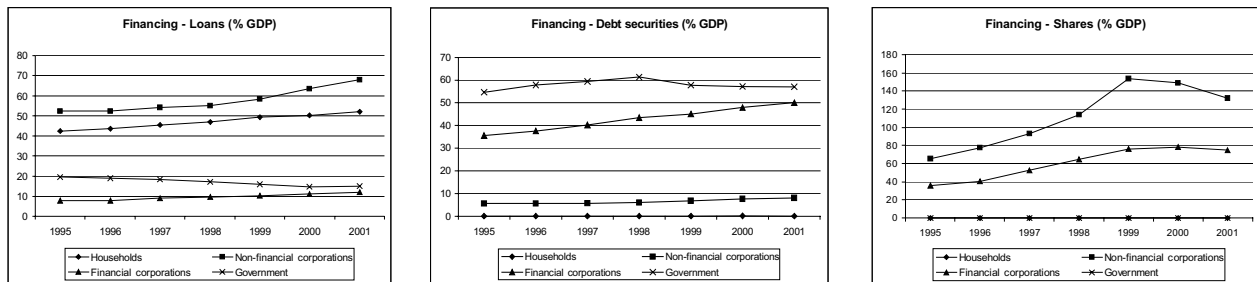
**Figure 1** – Composition of assets and liabilities as percentage of total, with breakdown by sector. (Source: ECB)



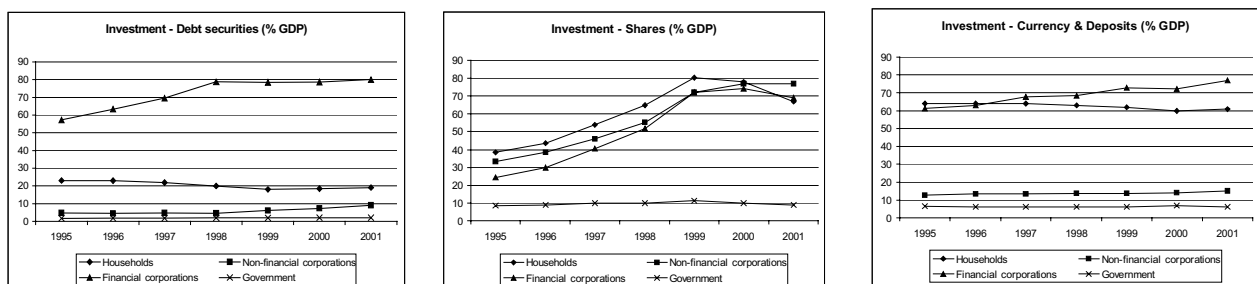
Figures 2 and 3 report the breakdown by sector of the different sources of financing and investment. Equity financing shows a clear upward trend, with a peak in 1999, partly reflecting the high stock market valuation of the last years of the 1990s. In 1999 non-financial corporations show a significantly higher increase in the importance of equities, than financial corporations. Financial corporations have increasingly financed themselves through bonds, while loans have become more important for households, partly reflecting developments in the housing markets of several euro area countries (see European Central Bank 2003a), and for non-financial corporations. (At the same time financial corporations have also constantly increased their investment in bonds, which stabilised after 1998.) While, overall, non-financial corporations have made more use of market financing, in absolute terms the available data do not allow to draw the conclusion that, in relative terms, their growth happened in excess of the contemporaneous growth observed for loan financing. In other words, in terms

of non-financial corporate financing, we are not able to identify any significant structural change from the traditional bank-loan-based financial system in continental Europe to a more securities-market-based system similar to the United States. This finding is consistent with earlier empirical findings by Schmidt et al. (1999) and European Central Bank (2001c), but contrasts with the view of Rajan and Zingales (2003).

**Figure 2** – Breakdown by sector of the sources of financing in the euro area (%GDP). (Source: ECB)



**Figure 3** – Breakdown by sector of the investment of funds in the euro area (%GDP). (Source: ECB)

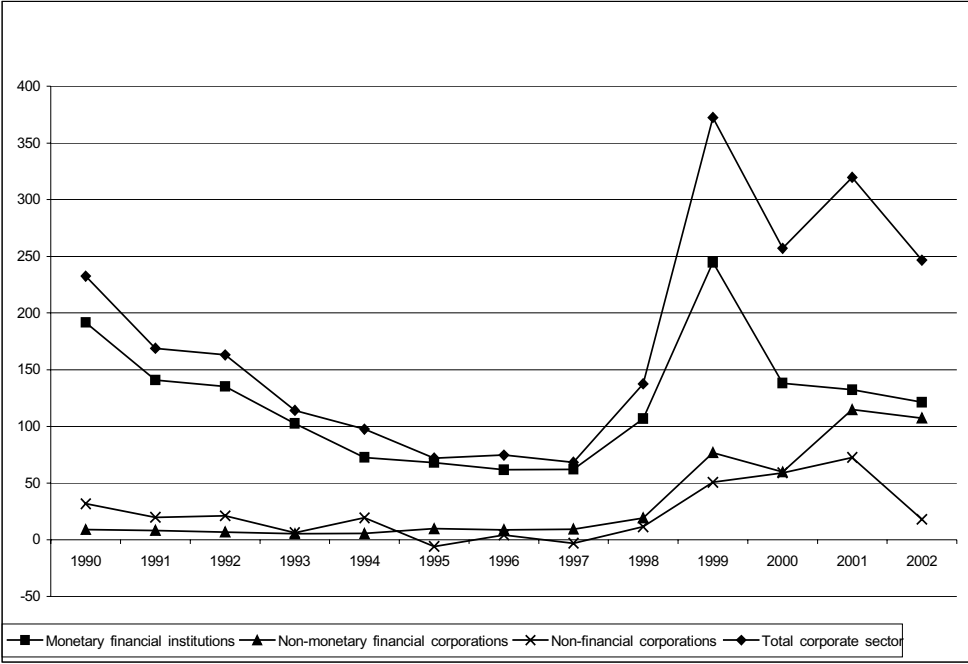


It is worthwhile to explore in more detail the evolution of the corporate bond market, as some researchers regard this as the most striking development after the introduction of the single currency (see, for instance, Galati and Tsatsaronis 2001 or Peree and Steinherr 2001). In figure 4 we report the net issues of corporate bonds by banks and other corporations. We note two things. First, the introduction of the euro in 1999 coincides with a significant jump in the issuance of corporate bonds. Second, in the year 2001, corporate bond net issues by non-bank institutions (the sum of non-monetary financial corporations and non-financial corporations) surpasses issuance by banks. This second development is even more striking in view of the fact that before 1998 such a market was practically not existent. Since the period 1999-2001 coincided also with significant corporate restructuring, with large IPOs<sup>7</sup> and with the UMTS license auctions in the telecommunication sector, it is not obvious that this development can

<sup>7</sup> The biggest IPOs in terms of volume during this period were the privatisation of ENEL (the Italian energy provider) and Deutsche Post and the public offers of Infineon Technologies (German chip producer), Orange (French mobile phone) and Alstom (French manufacturing).

be attributed to the euro. For example, Carnegie-Brown and King (2003) point out that the euro corporate bond issuance was proportional to M&A activity in the euro area and that bond financing was similarly pronounced in non-euro area European countries, like the United Kingdom.

**Figure 4** – Net issues of corporate bonds in the euro area (in € billion). (Source: ECB)



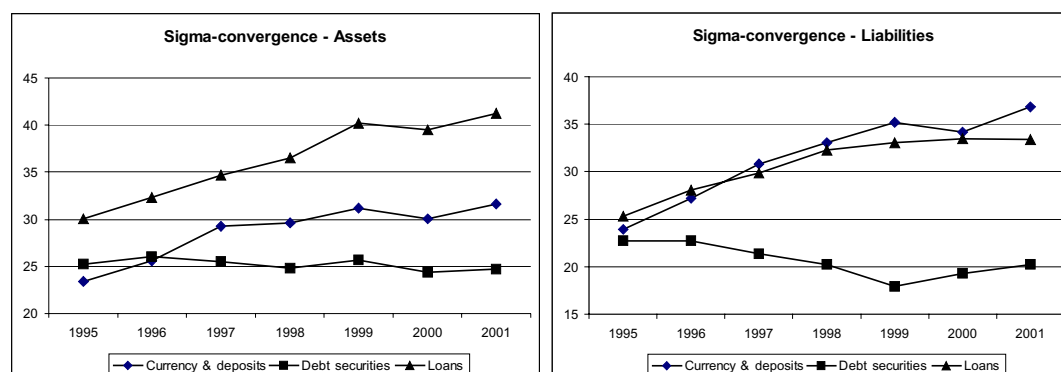
If M&As, UMTS licenses and IPOs were the only driving forces, we should observe a significant drop in the amount of issues in 2002, a year during which the importance of these factors subsided considerably. Despite a significant decline for non financial corporations, Figure 4 shows that the net issuance for non-monetary financial corporations has remained at sustained levels. This suggests that the introduction of the common currency, by enlarging the pool of potential investors and reducing underwriting costs, did have a significant effect on this market (see also the discussion in sub-section 3.2). Further evidence about the impact of the euro on the importance of corporate bond financing is provided by Rajan and Zingales (2003). Using panel data on domestic corporate debt outstanding in several countries since 1989, they regress the amounts of national debt issues on country and year dummies as well as on an indicator variable for countries that adopted the euro. They find that the euro had an independent positive and statistically significant effect on the amount of net debt issues. However, despite the significant growth of corporate bond issuance in the euro area, we should recall from Table 2 that total bond financing by non-financial corporations did not exceed 8% of GDP by 2001, compared to 29% and 25% for the US and Japan, respectively.

To evaluate how the financial structures of the individual euro area countries evolved over time, we plot in figure 5 weighted cross-country standard deviations between 1995 and 2001. All the figures



are expressed in percent of GDP and weighted according to the relative GDP contribution of each country to the euro area total.<sup>8</sup> This measure, called  $\sigma$ -convergence, is borrowed from the growth literature. For example, Adam et al. (2002) applied it to asset prices, describing their evolution across locations over time. We apply it to asset and liability components, to see if euro area financial structures are becoming more uniform over time. Figure 5 shows that the importance of currency and deposits and of loans in euro area countries has become more heterogeneous over time. Bond investment and financing, on the other hand, seem to become more uniform. To our knowledge, there is no theory that explains how the different financial structures of the euro area countries should evolve over time. Moreover, it is important to stress that convergence in individual countries' financial structures is neither necessary nor sufficient for European financial integration. Nevertheless, from the perspective of central banks developments in financial structures should be carefully monitored, as they might have important implications for the transmission mechanism of the single monetary policy.

**Figure 5** – Weighted standard deviations of euro area assets and liabilities with breakdown by asset (%GDP). (Source: ECB)



In sum, we found that an unprecedented boom of corporate bond issuance in Europe constituted one, maybe the major financial market development on the continent in recent years. The origins of this boom range from the forces unleashed by the euro – including also the constraints imposed by the Stability and Growth Pact on government finances –, to corporate restructuring and the liberalisation of telecommunication business. This bond market boom, however, and also some growth of equity financing in the euro area, has not yet led to a significant shift of corporate financing from the traditional bank-based structure to a more market-based structure, as known for the US financial system, because loan financing grew as well. At the same time, non-bank financial intermediaries have grown in importance in Europe, although part of them tend to be managed, or part of their services marketed, by

<sup>8</sup> The weighted standard deviations were computed as follows. Let  $w_i$  be the GDP weight of country  $i$  and  $x_i$  country  $i$ 's asset or liability, expressed in percent of its GDP. Then  $\sigma = \sqrt{\sum_{i=1}^{12} w_i (x_i - \sum_{i=1}^{12} w_i x_i)^2}$ .

banks. Interestingly, we further document that financial structures across euro area countries have been diverging during the second half of the 1990s, with the notable exception of the bond sector.

### **3. FINANCIAL INTEGRATION IN THE EURO AREA**

Financial integration is different from financial structure in that it refers to the ease with which financial instruments can be traded across regions, across national borders or even globally. Formally, one can say that an economic area is financially integrated if there are no barriers that discriminate economic agents in their access to and investment of funds within that area, on the basis of their location. As a consequence of this definition, i) financial instruments with identical cash flows should command the same price, ii) there should be no systematic differences in the portfolio allocation and sources of funding of economic agents within the area, after controlling for their individual characteristics. This provides the rationale to look at both price-based and quantity-based indicators. In this section we discuss the degree of integration of different financial markets (money, bond, stock and banking markets), looking both at price and quantity measures of integration. We also describe a number of recent developments relevant for the further integration of European financial markets, such as the emergence of common bond market trading platforms or the status of stock market consolidation.

#### **3.1 Money markets**

A single currency can be expected to have the strongest effect on the integration of the money market. A single monetary policy is characterised by a unique short-term policy interest rate (such as the ECB main refinancing rate or the Fed federal funds target rate) and an area-wide wholesale payment system (such as TARGET in the euro area and Fedwire in the US). In such conditions interbank deposits (of healthy banks) in different locations of the area are extremely close substitutes and there are little obstacles to arbitrage away any short-term interest rate differentials.

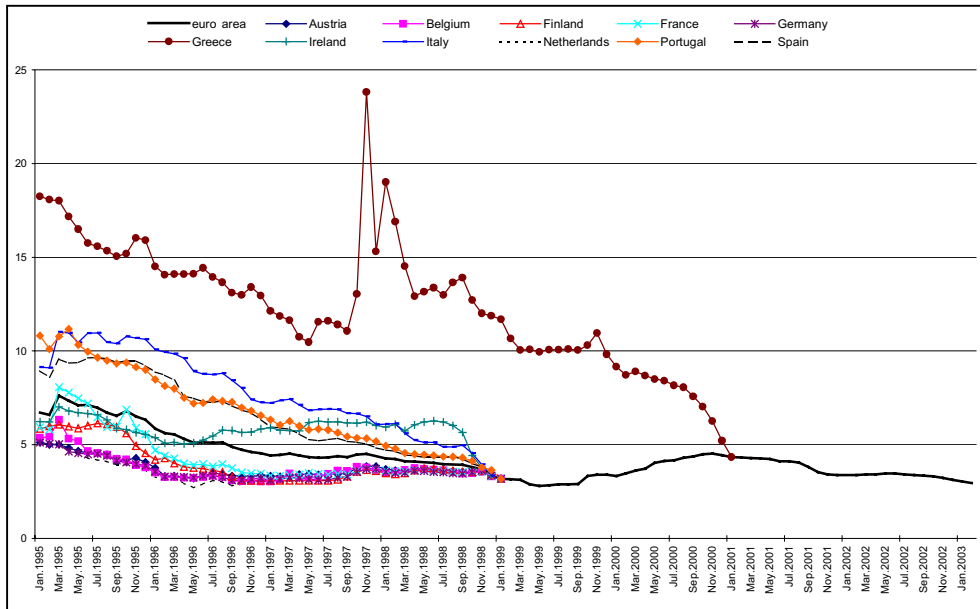
Some descriptive evidence confirms that the euro area interbank deposit market became extremely integrated very shortly after the introduction of the euro in January 1999. Hartmann, Manna and Manzanares (2001, figure 4) plot 5 months of intra-day overnight deposit rates from brokers located in different euro area countries and the UK, arguing that apart from the special year 2000 changeover week, cross-border rate differentials were very small. In figure 6 we plot 3-month deposit rates from January 1995 to January 2003. Of course, the massive convergence of these rates is undisputable.<sup>9</sup> The law of one

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<sup>9</sup> Adam et al. (2002, table 5.1) calculate average cross-sectional 3-month interest rate spreads vis-à-vis Germany and find them to be 0 for euro area countries (after January 1999) and very different from 0 for Denmark and the UK.

price has established itself even without the emergence of a common cross-border trading platform for interbank deposits.

**Figure 6** – Convergence of 3-month money market rates. (Source: ECB)



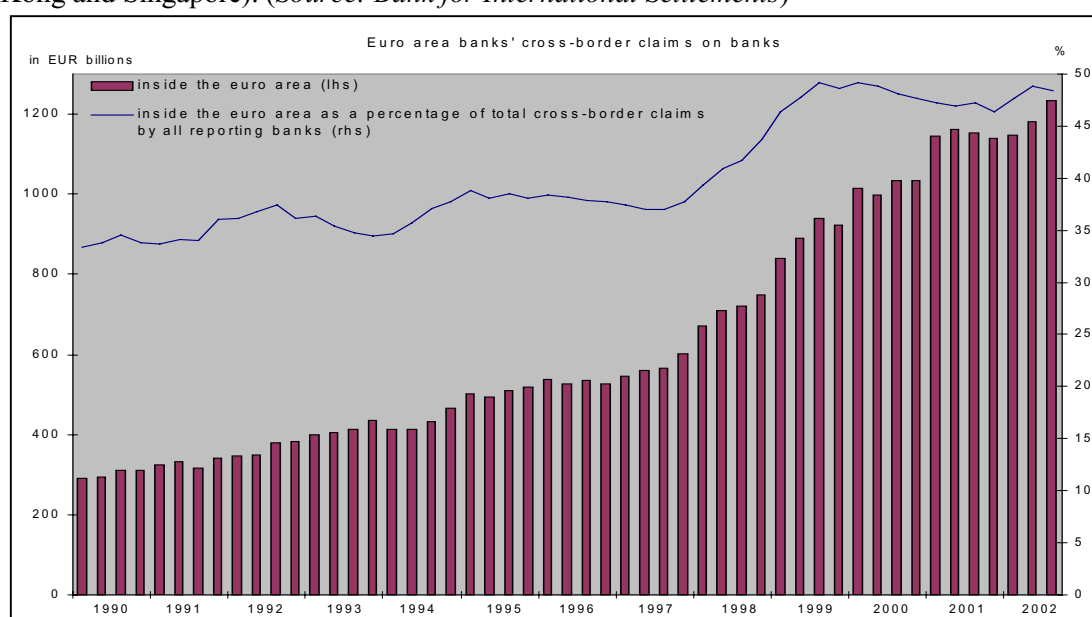
Adam et al. (2002) calculate  $\beta$ -convergence measures of 3-month interest rate differentials between euro area countries and Germany by regressing the change in these differentials on their level in the previous period. A negative regression parameter  $\beta$  indicates that convergence towards a common steady-state level is taking place and the absolute size of the parameter measures the speed with which that is taking place. The results show negative  $\beta$  coefficients throughout, which however more than double in size with the introduction of the euro. In other words, convergence of 3-month money market rates or the integration of this market has increased markedly after EMU.

The same authors also calculate the cross-sectional dispersion of 3-month deposit rates at any point in time and regress it on a time trend, the  $\sigma$ -convergence measure. A negative regression parameter  $\sigma$  indicates a trend towards greater market integration, since it implies that the law of one price tends to hold with greater accuracy over time. The results suggest that money market integration already increased somewhat before January 1999. However, with the introduction of the euro the standard deviation of cross-country rates basically collapses to zero, consistent with full money market integration (see Adam et al., 2002, figure 5.9).

Additional evidence on increasing money market integration in the euro area after the start of stage 3 can be provided with quantity based indicators. Following Galati and Tsatsaronis (2001), Gaspar, Hartmann and Sleijpen (2003) plot the share of euro area banks' cross-border claims on other euro area banks as a percentage of total cross-border interbank claims between 1990 and 2002. It is very visible from their figure, reproduced here as figure 7, that cross-border lending in the euro area interbank market increased significantly during 1998 and 1999 and clearly in excess of cross-border interbank lending

outside the euro area. It seems that the impact of the euro amounted to a 10 percentage point level effect in the size of the euro area interbank market relative to non-euro area interbank markets. Adam et al. (2002, figure 5.17) present data from the Fédération Européenne des Fonds et Sociétés d'Investissement (FEFSI) between December 1997 and June 2001. They show that the share of assets invested in money market funds with an area-wide investment strategy (as opposed to a national investment strategy) increased dramatically during 1999 for most countries.

**Figure 7** – Euro area cross-border interbank lending, 1990-2002 (amounts outstanding at end-of-quarter, in billion euros and % of total). Data cover information for 19 industrial countries (EU countries excluding Portugal, Canada, Japan, Norway, Switzerland and the United States) and 6 other countries, hosting major offshore banking centres (Bahamas, Bahrain, the Cayman Islands, the Dutch Antilles, Hong Kong and Singapore). (Source: Bank for International Settlements)



Whereas all indicators for uncollateralised money market instruments point in the same direction, a significant increase in integration at the start of stage 3 and presently a very high degree of integration, it is important to caution that this does not apply to all money market instruments. Notably the market for repurchase agreements (repos) is considerably less integrated than the market for deposits (see in particular the second Giovannini Report discussed in sub-section 4.4, European Commission 1999b and CEPS 2000). Solid evidence on the European repo market is relatively scarce however, in particular regarding measures of price differentials. Ciampolini and Rohde (2000) report some market survey evidence on interest rate spreads between German and Italian (general collateral) repurchase agreements. It turns out that monthly or 3-month Italian repos usually trade 4-5 basis points higher than German repos. Similarly, Canoy et al. (2001, table 7.2) show general collateral repo rates of a large Dutch bank, differentiated according to whether the collateral was German, Dutch, Italian or Belgian government bonds. Depending on the maturity and the country pair chosen those rates could differ up to 7 basis points on the same day, with the largest differential occurring between German and Belgian collateral for the longest maturity of 6 months.

As regards quantity measures, euro repo market turnover is smaller than euro cash market turnover and displays a smaller share of cross-border trading. However, the year 2000 ECB money market report (see European Central Bank 2001a) also showed an increase of intra-euro area cross-border trading between 1999 and 2000 (see the chart “Activity in the euro area deposit, repo and foreign currency swap market” in the annex). The year 2001 ECB money market report (see European Central Bank 2002c) confirmed that the share of trading with national counterparts is still higher in the repo market (slightly above 40%) than in the unsecured market (around 30%). And more than half of euro repo trading is still in instruments secured by home country collateral.

In sum, the euro area money market is characterised by a very large, very liquid and highly integrated unsecured deposit market and by a smaller and less integrated repo market. The main reasons for the former are certainly the single currency and related area-wide wholesale payment systems. The main reasons for the lagging repo market are (i) a fragmented securities settlement infrastructure that hampers the flow of collateral across borders (see also sub-section 4.4), (ii) contractual heterogeneity related to a multiplicity of Master Agreements and some legal uncertainty, and (iii) the imperfect substitutability of government debt used as collateral and related price differentials (see also sub-section 3.2, notably figure 8/right panel).

### **3.2 Bond markets**

The integration of government and corporate bond markets has also been significantly affected by the introduction of the euro. The euro has created a more homogeneous market, considerably expanding the base of investors. This contributed to making both government and corporate bond markets more competitive, ultimately leading to profound changes. In the following, we first describe developments regarding the integration of corporate bonds and then we turn to government bonds.

We have already talked about the corporate bond market in sub-section 2.2. There we saw that Europe witnessed an unprecedented boom of corporate bond issuance. Related to this, another interesting development happened in corporate euro bond underwriting. Before the introduction of the euro, firms wishing to issue bonds in a foreign market would usually have to select an investment bank with marketing and sales expertise in the currency of that country. Afterwards, however, underwriting became a much more contestable business. This is confirmed in a study by Santos and Tsatsaronis (2002), where it is shown that the arrival of the euro had an important negative impact on the underwriting fees of international corporate bonds issued in the new currency. Fees went even down to the levels observed in the US corporate bond market. This finding is particularly striking, as in 1994 the average fee for bonds denominated in European currencies was twice the corresponding figure in the US. An important feature in this development is that most of the underwriting business was taken over by the largest international investment banks, suggesting also that vis-à-vis the large euro-oriented investor base borrowers privilege

capacity over business relationships in the choice of an underwriter. Clearly, the greater contestability of the international euro market acted as a powerful substitute for foreign entry into national underwriting.

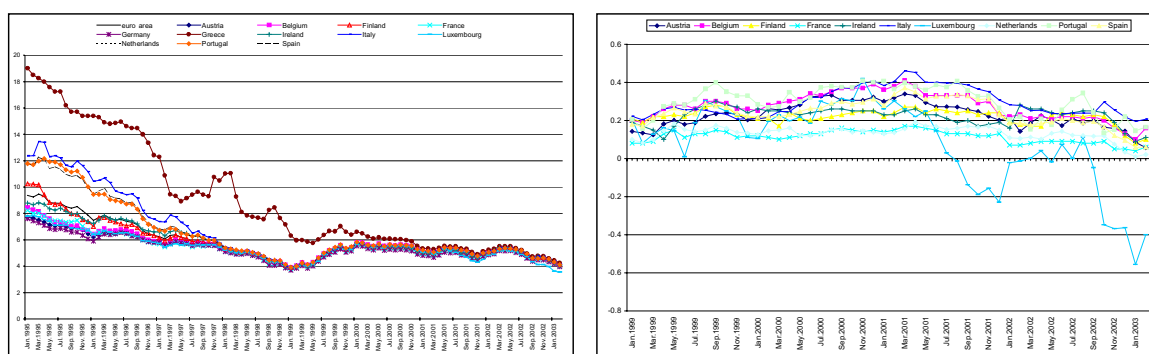
The government bond market was also very much affected by the introduction of the euro. From a structural perspective, the significant reduction in the importance of government debt related to the budget constraints imposed by the Stability and Growth Pact was already discussed in sub-section 2.2. By eliminating exchange rate risk, increasing the homogeneity of different sovereign issues, and therefore increasing their degree of substitutability, the euro has also intensified the competition in the Treasury bond market. As a consequence, government debt underwent a significant restructuring process. Most Treasuries decided to specialise on certain points of the yield curve, in order to increase the liquidity of the outstanding issues and to minimise borrowing costs. A general strategy has been to buy back or exchange the less liquid bonds with a smaller number of more liquid maturities, specialising on particular segments.<sup>10</sup> These developments lead to the absence of a single homogenous sovereign-based yield curve in Europe, which constitutes an obstacle to full financial integration, as it hinders arbitrage activity and the pricing of derivatives. (See Dunne et al. 2000 for an in-depth discussion of this benchmark question.)

In fact, price-based indicators show that the integration of the government bond market has advanced less than is the case for money market. Figure 8 displays the plots of 10-year government bond benchmark yields and spreads over the German bond, for the countries that joined the euro. On the one hand, the left panel shows that convergence has clearly taken place in this market. The indicators proposed by Adam et al. (2002) confirm this, as the speed of convergence increased after the adoption of the single currency, while the standard deviation (which measures the  $\sigma$ -convergence) in 1999 decreased substantially with respect to the levels of 1995. On the other hand, the right panel of figure 8, which plots the euro area government bond spreads over the German bond for the more recent period, shows that the 10-years bond yield spreads are still significantly different from zero, mostly ranging between 10 and 30 basis points. This is evidence that the government bond markets of the euro-area are still somewhat segmented, in the sense that the pricing of government bonds (with identical credit risk rating) has not fully converged. One possible explanation may be the existence of multiple equilibria (see Danthine et al. 2001): the difference in yields between similar government bonds generates a liquidity risk in the smaller markets, which in turn justifies the difference in yield. Adjaouté and Danthine (2003) argue that the costs associated with the persistence of such market segmentation are non-negligible. They estimate that if the market could be co-ordinated to the optimal equilibrium, e.g. through public policy, at the current debt levels euro area Treasuries could save at least €5 billion.

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<sup>10</sup> For instance, German bonds represent the benchmark for the 10 year maturity, while French bonds have a dominant position in the 5 to 7 year maturity. The French government has started to issue inflation-linked and constant maturity bonds (known as “TEC 10”, Taux de l’Échéance Constante à 10 ans). The Italian government has a dominant position in the segment of floating rate issues (see European Central Bank 2001b).

**Figure 8** – Convergence of 10-year government bond yields and spreads over the German rate. (Source: ECB)



Quantity-based indicators paint a similar picture, with government bond markets increasingly integrating, but significant home biases remaining. Table 4 displays the amount of euro area government debt by geographical residence of holders as a percentage of GDP. While, as already mentioned, the total amount of government debt decreased over the period 1995-2001, the percentage of debt held by non-resident increased. Although this trend towards international diversification started well before the introduction of the euro, it increased more substantially only after 1999. As the holdings of euro area government bonds outside the euro area did not change very much (see Detken and Hartmann 2000, figure 8, and 2002, figure 4 and table 5), it is likely that most of the cross-border diversification reflects intra-euro area investments. Therefore, one can argue that the introduction of the common currency has contributed to reducing the “home bias” in the sovereign euro-denominated bond market.

**Table 4** – Euro area government debt by holder.

% GDP	1995	1996	1997	1998	1999	2000	2001
<b>Domestic</b>	58.3	58.9	56.9	53.3	49.7	46.0	45.0
<b>Non resident</b>	15.9	16.5	17.9	19.8	22.3	23.6	24.1
<b>Total</b>	74.2	75.5	74.9	73.1	72.0	69.5	69.1

Source: ECB

Blanco (2001, table 4) reports data on trading activity in the 10 year government bond futures markets. It emerges that the futures based on German bonds and traded in Eurex have absorbed most of the liquidity of the Italian, Spanish and French markets in 1998 and 1999. Only in 2000 Euronext (see the box on “Consolidation of Stock Exchanges” in the next sub-section) managed to restore the liquidity of the French bond futures traded on MATIF to pre-EMU levels, although this remains low when compared to the German market.

Competition has also fostered changes in the market structures and practices of the euro area. Market transparency has been increased with the pre-announcement of auction calendars, and with the concentration of the issuance activity on a smaller number of benchmark securities.



Some electronic trading platforms have expanded to cover trading in most euro area government bonds. The most successful of these platforms was MTS.<sup>11</sup> MTS is an electronic quote-driven market, where primary dealers quote continuously bid-ask prices for agreed securities. The MTS market model is based on a two-tiered structure: a central “super-wholesale” market for European government bond benchmarks (EuroMTS) and a combination of domestic markets for national issuers. Liquidity is guaranteed by the presence of market-makers and by the use of a common electronic trading platform (known as Telematico), that allows to exploit the economies of scale of a European network of operators. Corporate governance decisions (e.g. conditions of access, obligations of market-makers, list of traded securities) and market supervision remain at the national level. The popularity of these platforms has been generally higher in countries with a relatively smaller outstanding amount of public debt securities. This might reflect substantial differences in the entry costs among national markets. Many investors may find smaller government debt markets not attractive enough to incur the fixed and operational costs of entering them. The access to all these markets through a common, cross-border platform has apparently been an attractive alternative for them. It seems that these trading platforms have had a quite significant, positive impact on the integration of government debt markets in the euro area, and on the liquidity of some of the smaller markets.

An area where progress in the integration of market infrastructure has proven to be more difficult is the settlement of securities, including bonds. Whereas the number of large-value payment systems in the euro area has declined from 18 in 1997 to 5 in 2001, inter alia through the creation of TARGET by the Eurosystem, the number of securities settlement systems has only come down from 23 to 14. (For comparison, in the US the relevant number of systems for payments is two, and there are also two systems for securities settlement.) It has been estimated that, partly as a consequence of this fragmentation, the costs of settling cross-border debt securities transactions are 10-20 times higher than for national transactions (see Adjaoute’ et al. 2000, and European Commission 2001). Clearly, this is a significant obstacle to further European bond market integration.

In summary, the government bond market has converged rapidly in the period before the introduction of the euro, although to a lesser extent than the money market. Yield differentials remaining by the time of the introduction of the euro in January 1999 still persist. Although they are relatively small, significant benefits might be gained from a further integration of these markets. As discussed in

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<sup>11</sup> MTS stands for Mercato Telematico dei titoli di Stato. It was founded in 1988 in Italy to improve the management of the Italian government debt. Since then it expanded to cover a broader range of securities and other countries of the euro area. As of today, the MTS Group includes EuroMTS (based in London), EuroCreditMTS, MTS Amsterdam, MTS Belgium, MTS Espana, MTS Finland, MTS France, MTS German Market, MTS Ireland, MTS S.p.A. (MTS Italy), MTS Japan and MTS Portugal. Although it is not easy to characterise the developments in the trading activity of the spot market, due to the lack of detailed and comprehensive data, MTS seems to emerge as the dominant platform for bond trading in Europe. Galati and Tsatsaronis (2001) report that in 2000 an estimate of about 40% of all bond transactions took place through the EuroMTS electronic platform. The shift from OTC towards trading on these electronic, cross-border platforms has been different across countries.



sub-section 2.2, the corporate bond market has witnessed an unprecedented boom, partly related to the euro. The greater contestability of the primary markets in the common currency area resulted in a significant reduction in the underwriting fees of corporate bond issues in euro. Cross-border trading of government bond has been facilitated through international electronic platforms, but cross-border trading of all bond is still very much hampered by the fragmentation of the European securities settlement industry.

### **3.3 Equity markets**

In a financially integrated equity market, there are no effective barriers that prevent agents to invest in their preferred assets, independently of their location. This implies on the one hand that expected returns are decreasing in their covariance with global returns (as opposite to a segmented world, where only the behaviour of local returns matter, see, for instance, Bekaert and Harvey 1995 and Stulz 1999). On the other hand, optimally diversified global portfolios should display no particular preference for domestic equities. Therefore as equity markets become increasingly integrated, one should expect the share of domestic stocks in household portfolios to decline relative to the share of foreign stocks (as described, for example, in Ayuso and Blanco 2001).

Adjaouté and Danthine (2003) provide a comprehensive review of the recent developments in European equity returns. First, they verify a necessary condition under which financial integration would result in a lower risk premium, compared to segmented markets. This condition simply states that the variances of the national equity indices must be higher than the variance of the global portfolio. The empirical evidence is unambiguous for the euro area: the standard deviation of the local markets (measured by Morgan Stanley Capital International (MSCI) indices) is always greater than the corresponding EMU index. In other words, integration of equity markets should lead to a lower cost of capital and therefore stimulate economic growth. Second, they use a multi-factor model that allows for equity returns to be affected not only by the global market portfolio, but also by country and industry factors. Their finding supports anecdotal evidence<sup>12</sup> of a shift in the portfolio allocation paradigm: the first step of the top-down approach to portfolio selection has shifted towards deciding on a sector (rather than country) allocation. Third, they confirm these results using standard mean-variance models. Since 1995, Sharpe ratios of optimal portfolios constructed from sector indices have been constantly higher than those constructed from country indices.

Fratzcher (2001), instead, proposes a multivariate GARCH model to study changes in the integration of European stock markets since the mid-1980's. The processes entering the GARCH model

are individual countries' returns, euro area returns and US returns. This allows him to evaluate the relative importance of regional shocks originating in the euro area with respect to global shocks coming from the rest of the world (proxied by the US). He finds that European equity markets have become more highly integrated with each other and have gained importance in world financial markets since 1996. He also finds that reduced exchange rate variability and convergence of interest rates were the driving forces behind this integration process.

These results should in general be taken with some caution, as they are usually sensitive to model specification, data sources and time periods. Moreover, the estimated relationships are highly time-varying, so that it is very difficult to tell whether they are driven by the integration process or by some other common shocks (such as supply/demand or monetary policy shocks).

Microeconomic data concerning agents' portfolio composition are becoming increasingly available and can be usefully employed to complement the evidence provided by price-based indicators. Guiso, Haliassos and Jappelli (2003) study the current state of stockownership among households in major European countries. Their main finding, in the light of the present discussion, is that, although euro area households' participation in stock markets has increased significantly in the last decade, country dummies still explain participation, after controlling for age, education, income and wealth. This can be interpreted as evidence that euro area countries' equity investors are characterised by different participation costs and therefore that significant barriers to complete integration remain.

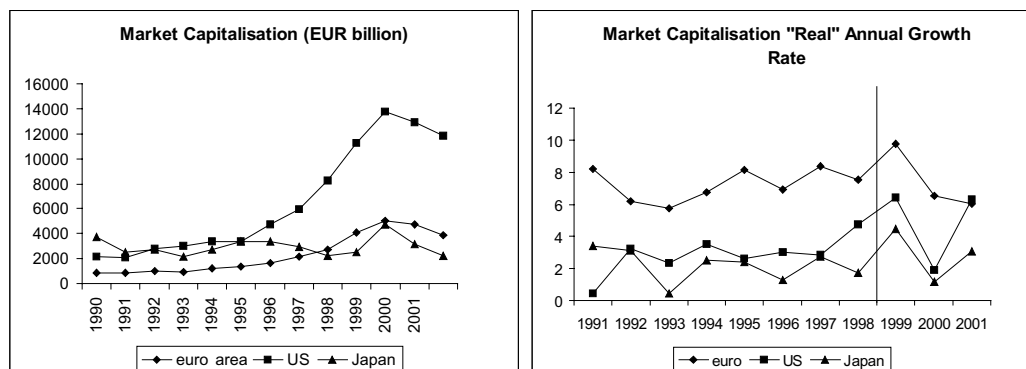
Adam et al. (2002) report data on international portfolio diversification for investments funds, pension funds and insurance companies. The share of equities invested in funds with European-wide scope has increased for most countries between December 1997 and June 2001. Similar results hold for portfolio compositions of pension funds and insurance companies. By contrast, Sweden and United Kingdom did not show analogous signs of international diversification. This points towards an increased financial integration of the euro area equity markets, although considerable differences within euro area countries persist.

Regarding market capitalisation of euro area stock exchanges, it increased remarkably in the last few years, but still remains significantly lower than in the United States. However, correcting for price increases and using the total market indices provided by Datastream, the annual growth rate of market capitalisation in the euro area from 1998 to 2001 was higher than in the U.S. and in Japan. Specifically, from 1998 to 2001, "corrected" market capitalisation in the euro area increased by 24%, compared to 15% in the U.S. and 9% in Japan (see figure 9, right panel).

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<sup>12</sup> Brookes (1999), for example, reports the result of a survey by Goldman Sachs, in which asset managers said they would change the allocation of their portfolio after the introduction of the euro and base their decisions on sectors

**Figure 9** – Stock market capitalisation in EUR billions (*Source: FIBV*) and annual growth of market capitalisation calculated as the growth in the units of a total market index in the euro area, U.S. and Japan (*Source: Datastream*).



This result can be in part explained by the privatisation policy implemented by several euro area governments, which was one of the main drivers of equity issuance activity during this period. The largest telecommunications companies as well as companies providing services such as water, power, transportation and mail were privatised, generating a high number of initial public offers (IPOs). The total number of IPOs and their volume surpassed those in the U.S. for the first time in 1999 and remained substantially higher than in the U.S. and in Japan in 2000. Although the trend partly reversed in 2001 and 2002 in the midst of a global decrease both in volume and number of IPOs, the number of IPOs in the euro area remained higher than in the US. The high number of IPOs caused a net increase in the number of publicly listed companies in euro area exchanges, despite a large number of de-listings, due to consolidation in various industries. As a side effect of this consolidation process, the resulting larger size of the companies contributed to a slight increase in the average concentration index on the different euro area stock exchanges. The telecommunication sector, for instance, constitutes an important share of the market capitalisation of all euro area stock exchanges together.

Regarding the market infrastructure, stock trading in the euro area has historically taken place on the national stock exchanges. Consolidation among these national markets has remained quite moderate, despite the relatively successful merger of the exchanges in Amsterdam, Brussels and Paris, creating Euronext (see Box 1). However, from 1998 to 2000, the share of foreign companies listed on euro area exchanges increased from 14% to 26%, as reported in European Central Bank (2002a). This seems to indicate that some integration is achieved through at least cross-border participation in euro area stock markets. At the same time, though, as for bonds, the costs of settling cross-border equity transactions remain – by the time of writing – still considerably higher than for domestic transactions. This significant obstacle to further equity market integration in Europe is the subject of work by the Giovannini Group (see section 4.4).

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rather than on countries. Other investment banks and asset funds explicitly professed this change in attitude as well.

Summing up, analyses of equity returns and risk premia in the euro area provides weak evidence that some integration in equity markets took place over the past few years. At the same time, there has been a shift in the asset allocation paradigm, which is now based on sector (rather than country) diversification. Quantity-based indicators show increasing stockownership among households and greater international portfolio diversification among investment funds, pension funds and insurance companies. Market capitalisation in the euro area increased significantly, compared to the United States and Japan, reflecting the relatively higher number of IPOs in the last few years. Overall, however, European equity markets still remain significantly less integrated than US or Japanese equity markets. The large number of separate markets and the fragmented structure of systems to settle cross-border trade remain important factors in this situation.

#### Consolidation of stock exchanges

While at first the introduction of the euro seemed to have given an impulse to consolidation of trading structures, more recent developments support the idea that “true” consolidation may give way to specialisation of markets. On the one hand, if the so-called “parallel markets” are taken into account, the total number of exchanges in the euro area has actually increased. These new exchanges are separately incorporated segments organised by existing exchanges, targeting specific economic sectors, like for example technology firms.<sup>13</sup> These markets offer alternative trading systems, with cheap and easy access to trading in the shares of a limited number of companies. On the other hand, some consolidation is taking place for traditional stock exchanges. The most noticeable example has been the creation of Euronext in September 2000, by the merger of the stock exchanges of Amsterdam, Brussels and Paris. Euronext is subject to Dutch legislation and it has a subsidiary in each of the participating countries. Each subsidiary holds a local stock market licence that gives access to trading in all the participating countries. Euronext achieved consistency in some, but not all the institutional characteristics of its predecessor markets. Single quotation and a common order book are guaranteed as well as price dissemination systems, a unified trading platform and one clearing and settlement system, Euroclear.<sup>14</sup> Nevertheless, the local markets are not legally merged, which implies e.g. that the regulatory body in each of the participating countries retains its prerogatives. From the beginning, Euronext was not intended to be a closed structure and was eager to finalise agreements with other stock exchanges. In

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<sup>13</sup> We refer in particular to the Euro.NM, a pan-European network of regulated stock exchanges created between 1996 and 2000: the Euro.NM Amsterdam (Netherlands), the Euro.NM Brussels (Belgium), the Euro.NM Helsinki (Finland), the Neuer Markt (Germany), the Nouveau Marche’ (France), the Nuovo Mercato (Italy) and the Nuevo Mercado (Spain).

<sup>14</sup> Notably, at the end of September 2002, the merger between Euroclear and CRESTCo was officially completed. CRESTCo owns and operates the real-time settlement system used to settle UK, Irish and international securities as well as money market instruments. The Euroclear Group now covers five major European markets: UK, Ireland and the Euronext markets of France, the Netherlands and Belgium.

2001, this resulted in the acquisition of Liffe, the London derivatives trading platform, and the agreement to integrate also the Portuguese exchanges of Lisbon and Porto.<sup>15</sup>

Before Euronext, another even larger merger between stock exchanges was tried. Already in 1998, the Deutsche Börse (DB) and the London Stock Exchange (LSE) were planning to merge in an attempt to gain the leadership position in Europe. The creation of iX (“international Exchange”) was officially announced on May 2000. The DB and the LSE planned to participate in equal measure as shareholders of the new exchange, which would be subject to British legislation. It was envisaged to quote the ‘blue chips’ of both exchanges in London and the technology stocks in Frankfurt. The trading system would have been the German one (Xetra), considered more modern and more reliable. While the negotiations between the two stock exchanges were still in process, the OM Gruppen, owner of the Stockholm stock exchange, made an unexpected public offer and tried to take over the LSE. This event critically affected the projected merger between DB and LSE, which was subsequently rejected by the LSE Board.

Several reasons led to the failure of the merger.<sup>16</sup> In general, there were some doubts that the merger would create value added and would consistently exploit economies of scale. First, contrary to Euronext, where companies belonging to the same sector retained the freedom to choose the location of their listing, iX required the ‘blue chips’ to be traded in London and the technology stocks in Frankfurt. This solution would have implied costs for both exchanges. Second, some of the companies would have had to move from one exchange to the other and deal with the change in regulations and supervisory authorities. Finally, the new entity did not include the creation of a common clearing and settlement system, hence it would have failed to provide lower settlement costs.

### **3.4 Banking**

As banking is a multi-product business, it is quite complex to describe its process of integration. In principle, the absence of barriers to entry would ensure a perfectly integrated banking market, as the threat of new entries deters incumbents from charging prices in excess of their marginal costs. In practice, such an ideal condition is very rarely met. Several studies show that even in the United States the distance between borrower and lender does affect the lending conditions (see, for example, Petersen and Rajan 2002, and Berger et al. 2001). Degryse and Ongena (2002), using a data set containing more than 17,000 loans made by an important Belgian bank to individual firms, find that loan rates decrease in the distance between the firm and the lending bank. Similarly, loan rates increase in the distance between the firm and competing banks.

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<sup>15</sup> It should be noted, however, that the settlement of transactions on the Portuguese exchange, as a member of Euronext, is not conducted by Euroclear.

<sup>16</sup> For additional insights, see Moneta (2000).

Berger et al. (2003) take an even more extreme position and claim that the banking industry may never become fully globalised – or integrated for that matter. They argue that some banking services – such as relationship lending to small businesses – will be always provided by small local institutions operating in the nation in which the services are demanded. Their econometric analysis uncovers that foreign affiliates of multinational corporations prefer to use host nation banks for cash management purposes. This is consistent with the view that a host nation bank may best know the local market, culture, language and regulatory conditions in the host nation. In addition, it may have superior information about local non-financial suppliers and customers.

Although complete integration may never be achieved, one way to describe the progress of integration in the banking market is to show how existing barriers to entry have been progressively reduced. A different, but complementary strategy is to look at how price and quantity indicators – related to both wholesale and retail banking activities – have evolved. In the rest of this section we will tackle both points.

Deregulation, technological innovation, growth in cross-border activities of non-financial companies, as well as the introduction of the euro, were all factors that contributed to the reduction of global and European barriers to competition in the financial services industry. Financial institutions mainly responded to these pressures by cutting costs and by consolidating their activities, either through mergers and acquisitions or through cross-shareholdings.

Since the launch of the euro, the number of (euro area) monetary and financial institutions (MFIs) has steadily declined at a monthly average rate of 0.3%. Between January 1999 and June 2002, the number of MFIs decreased by 11.1%.<sup>17</sup> Merger and acquisition activities involving credit institutions in at least one of the euro area countries peaked in 1999 after the introduction of the common currency, but at the end of 2001 this number was comparable to the 1998 level. While the majority of deals was still domestic, i.e. they involved credit institutions located in the same country, the percentage of domestic M&As over the total has been diminishing constantly from 1995 on. Conversely, the number of deals involving foreign credit institutions, located in the euro area and outside, increased over the same period (see figure 10).

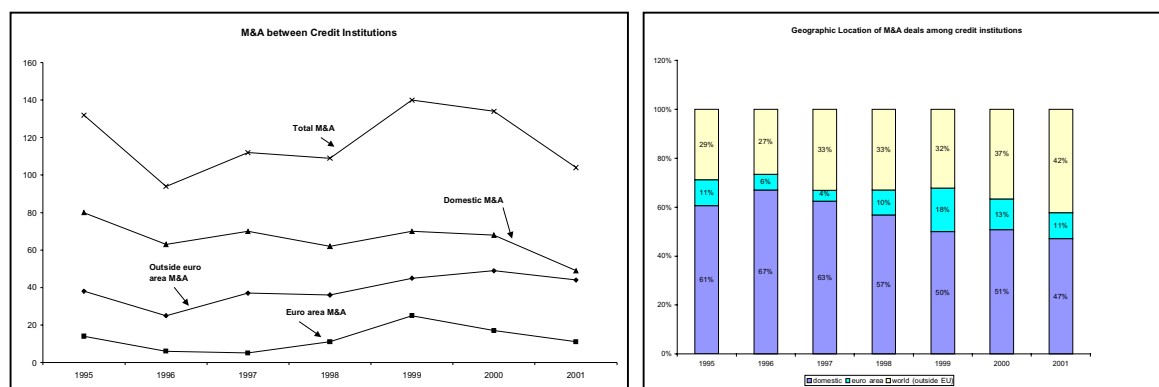
The empirical literature has found evidence that “efficiency barriers”, such as geographical distance or differences in language, culture and regulations, do inhibit cross-border bank mergers.<sup>18</sup> Recent empirical results support the view that the incentive for cross-border mergers relies more on economies of scale than on economies of scope (see, for instance, Buch and DeLong 2002).

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<sup>17</sup> Similar patterns were observed in other non-EMU European countries.

<sup>18</sup> There exists a large body of literature, both theoretical and empirical, addressing issues of banking consolidation. The main theoretical arguments include scale, scope and X-efficiency effects (see, for instance, Berger et al. 1999 and Berger et al. 2000).

**Figure 10** – Number of M&A deals involving credit institutions in the euro area countries and Geographical distribution of the M&A deals involving credit institutions in the euro area. The domestic deals involve institutions in the same country, while the euro area ones concerns to banks situated in two different countries of the euro area. The “world M&A” involve one institution located in the euro area and another located outside. (Source: SDC Thomson Financial)



As far as regulatory barriers are concerned, the most important developments in the euro area have been the Second Banking Directive and the Financial Services Action Plan.<sup>19</sup> The main principles incorporated in the Second Banking Directive were the single banking license and supervisory home country control. Under the single license, all credit institutions authorised in an EU country would be able to establish branches or supply cross-border financial services in all other countries of the EU without further authorisation. Dermine (2003), however, finds that cross-border mergers involving European banks of significant size have all resulted in holding company structures with subsidiaries, rather than branches. Similarly, the overall number of foreign bank subsidiaries in Europe is high relative to the number of foreign branches. So, he concludes that the single banking license is more an illusion than a reality. The reasons he sees for the surprisingly high importance of corporate subsidiary structures range from management considerations (such as the greater acceptability of consolidation for local managers and shareholders) to different corporate taxation and deposit insurance systems. (See also the detailed discussion of Huizinga 2003 of possible explanations for this phenomenon.) Moreover, the supervisory home country principle implies a discrepancy with more area-wide arrangements for competition policy. Carletti and Hartmann (2003) discuss the division of labour between supervisory and competition reviews of bank mergers in EU countries. It turns out that in various countries home country supervisory authorities have a stronger (or even exclusive) role in these reviews than competition authorities. This feature may also play a role in the still subdued cross-border consolidation in the euro area. Finally, some observers feel that a euro area wide supervisory authority could lower further any remaining obstacles to banking integration. However, others argue that given existing banking structures

<sup>19</sup> We postpone the discussion of the Financial Services Action Plan until section 4.1.



this step would be premature at the present time (see e.g. Belaisch et al. 2001 and Economic and Financial Committee 2000).

Rosengren (2003) provides a comparison between the European and the US banking system. He finds that there are still significant limits to the geographic expansion of banking activities within the United States, which surprisingly resemble very much the ones observed by Dermine within Europe. For example, none of the five largest US banks has major operations in the New England area (the Federal Reserve Bank of Boston district), despite its proximity to New York, the state with the strongest concentration of large and complex banks. Similar observations can be made for other regions of the United States. More generally, only 6 % of all US banks operate in more than one state and no bank has major retail operations in all regions of the US. However, despite these similarities to Europe, Rosengren still regards US banking markets as more integrated, because first – in contrast to European banks – US banks have significantly reduced the number of their subsidiaries over the last decade, and second subsidiaries are organised on a functional basis rather than a geographical basis.

Let us now look at how price-based and quantity-based indicators have evolved. In wholesale banking,<sup>20</sup> we have already seen in section 3.1 that the relevant short term deposit rates quickly converged after the introduction of the single currency. For retail banking, Cabral et al. (2002) report average monthly retail interest rates data on household lending, corporate lending and deposit accounts between 1998-1999 and 2001-2002. They also report banks' margins over market interest rates, on the ground that these margins, unlike market interest rate levels, are not affected by macroeconomic factors. They find that between 1998-1999 and 2001-2002 differences across countries in household and corporate lending rates and deposit rates declined in the euro area (cfr. tables 17 and 18). However, the reduction in the standard deviation of banks' margins was much lower, signalling that the developments were mainly driven by convergence in the macroeconomic monetary conditions.

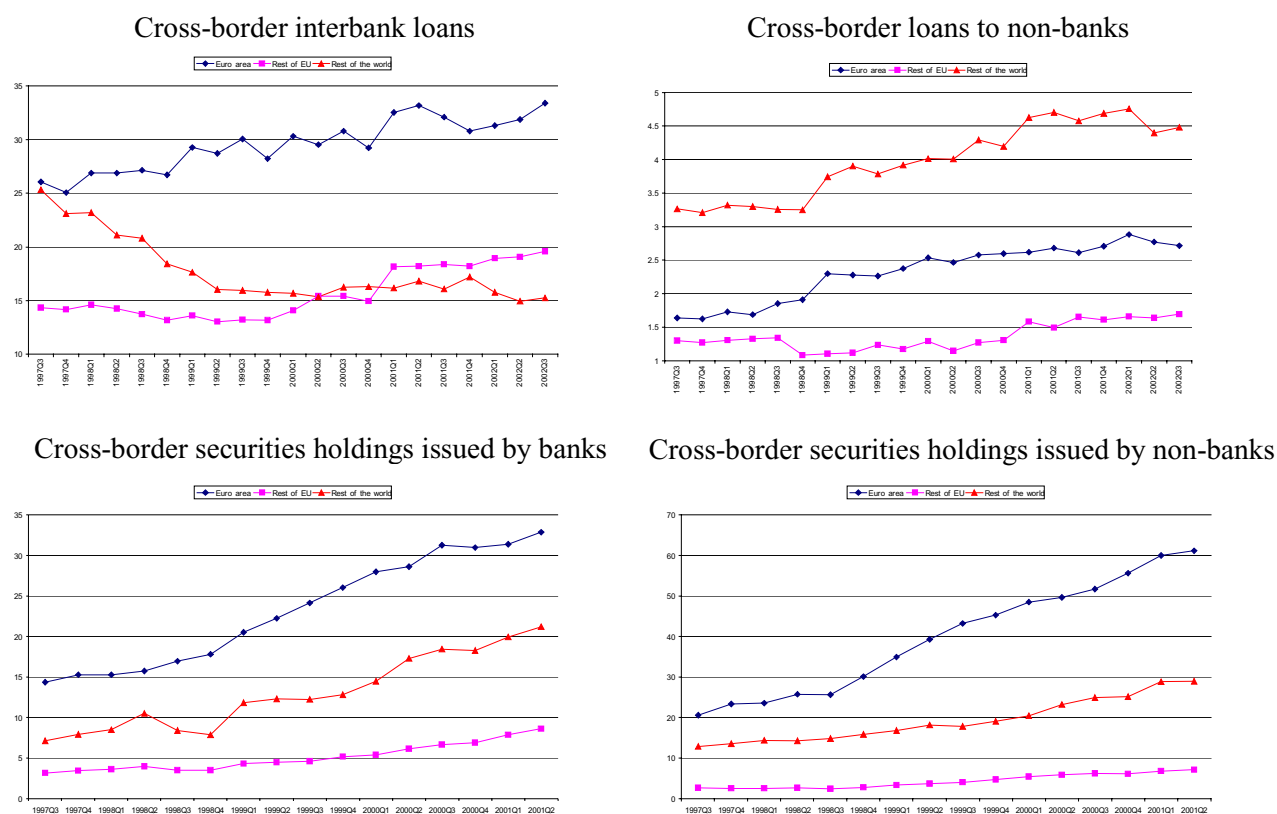
Indicators based on the costs associated with retail cross-border payments show weak evidence of convergence in bank charges across Europe (see Adam et al. 2002). Although there is some evidence of a reduction of the average duration for such transfers, the average cost of cross-country transfers has not converged at all. Transferring €100 across border cost €17.10 on average in 1999 and €17.37 in 2001. Given the evidence that market-led convergence had failed to materialise, a regulation, submitted by the European Commission and recently approved by the European Parliament, will impose that bank charges for cross border payments in euro must be the same as for similar transactions within a single Member State as of 1 July 2003.

Regarding quantity-based indicators, increases in cross-border banking business were observed between 1997 and 2002 at the euro area level. The upper panels of figure 11 shows data on cross-border



loans to banks and non-banks respectively, broken down by the residence of the borrower (euro area, EU and non-EU countries).<sup>21</sup> The amounts of loans are expressed as a percent of total domestic loans. We notice an upward trend in euro area cross border loans, but the absolute amount of loans to non-banks remains very small compared to interbank loans. Therefore, strong home biases both in lending and in borrowing seem to persist, as confirmed also by Buch et al. (2003). The increase in euro area interbank loans, instead, has been particularly significant, especially in consideration of the fact that the opposite trend is observed for non-EU countries. This is consistent with the data shown in figure 7 of section 3.1.

**Figure 11** – Euro area cross-border loans and bank holding securities, as a percentage of the respective domestic amounts. (Source: ECB. Note: the ECB will start the regular publication of these data in summer 2003)



In the lower panels of figure 11, we report bank holdings of securities issued by banks and non-banks, again as a percentage of the respective domestic holdings. Cross-border securities holdings issued by banks increased from 15% to about 35%, while cross-border securities holdings issued by non-banks boomed from little more than 20% in 1997 to about 60% in the second quarter of 2001. This signals that banks have increasingly diversified their portfolio investments in securities, especially across the euro

<sup>20</sup> Wholesale banking refers here to activities in which the two sides of the transaction are banks or other financial institutions.

<sup>21</sup> See Angeloni and Ehrmann (2003) for individual country data on Germany, France and Italy.

area. Again, this is consistent with the home bias reduction documented for government bonds in subsection 3.2.

Finally, anecdotal evidence indicates that when banks operate across borders, they generally tend to focus on specific product segments. Few institutions have activities throughout the euro area, but they serve mainly corporate customers, while cross-border activities in the field of retail banking remain limited. The most effective way to gain access to the retail sector of a foreign country seems to remain the merger with or acquisition of an existing local bank.

In summary, there has been a significant and progressive erosion of barriers to foreign entry in the banking industry, although significant barriers such as different corporate taxation and some regulatory factors remain. Convergence in short term deposit rates for wholesale banking has taken place, while the increased homogeneity of retail interest rates across the euro area seems to be driven more by macroeconomic convergence than by the actual integration of the retail banking industry. Similar conclusions can be drawn from quantity indicators of banking integration. They show a significant increase in euro area interbank loans, but still subdued (while nevertheless increasing) cross-border consolidation, as well as persistence of home biases in lending and borrowing to non-financial corporations.

#### **4. MAIN POLICY INITIATIVES TO IMPROVE FINANCIAL INTEGRATION IN EUROPE**

It is long recognised that the creation of the European single market for goods and services also requires the removal of any barriers to an integrated market for financial services. For example, only under the right balance between competitive forces and financial regulation financial structures will emerge that lead to an efficient fulfilment of the functions of the financial system in Europe. Moreover, the euro can only fully develop its catalytic role for the further development and integration of the European financial system, if it is supported by policies conducive to the free flow of financial services in the euro area and by an adequate legal, regulatory and supervisory framework.

However, the EMU was a process mainly driven by macroeconomic considerations: a single monetary policy and price stability across the continent. Already shortly after the introduction of the euro, policy makers realised that a single currency was not a sufficient condition for full financial integration. (The most important evidence to reach this conclusion was discussed in the previous section.) Therefore, several high-level policy initiatives were launched to implement the necessary microeconomic and legal reforms. This section of our paper discusses in greater detail two of the most important initiatives, the European Commission's Financial Services Action Plan in general and the Lamfalussy Committee's proposals for the reform of securities market regulations specifically. Another

sub-section describes the recent application of a variant of the Lamfalussy approach to the banking sector. At the end we touch on the work of the Giovannini group.

#### **4.1 The Financial Services Action Plan of the European Commission**

The European Council held in Cardiff on 15-16 June 1998 concluded that in order “to enable the single market to make its full contribution to competitiveness, growth and employment, still more needs to be done”. It singled out financial services as one of the areas where additional efforts were needed, inviting “the Commission to table a framework for action ... to improve the single market in financial services, in particular examining the effectiveness of implementation of current legislation and identifying weaknesses which may require amending legislation” (European Council, 1998, point 17.). In response to this mandate, the Commission established on 28 January 1999 a high-level Financial Services Policy Group (chaired by the competition commissioner Mario Monti and composed of personal representatives of EU Finance Ministers as well as the ECB) and published on 11 May 1999 an action plan to improve the single market for financial services (European Commission, 1999a).

This Financial Services Action Plan formulates three “strategic objectives”: Ensuring 1) a single EU market for wholesale financial services, 2) open and secure retail markets and 3) state-of-the-art prudential rules and supervision. Overall 43 legislative measures were proposed. 19 under the first objective concern the “raising of capital on an EU-wide basis”, the establishment of a “common legal framework for integrated securities and derivatives markets”, steps “towards a single set of financial statements for listed companies” (accounting), measures to contain “systemic risk in securities settlement”, steps “towards a secure and transparent environment for cross-border restructuring” (corporate governance) and efforts to ensure a “single market which works for investors” (investment fund regulations). 9 measures under the second objective address the elimination of price differentials across the EU and consumer protection issues. 10 measures under the third objective deal with the elimination of gaps in the EU supervisory framework, notably the adoption of new capital adequacy regimes, money laundering and e-money regulations, winding-up provisions for financial institutions and the regulation of financial conglomerates. The plan also includes a fourth, “general objective” regarding the “wider conditions for an optimal single financial market”. The 5 remaining measures fall under this objective and mainly deal with tax issues, notably tax harmonisation.

Each of the measures received a priority ranking between 1 (calling for immediate action) and 3 (requiring new work), and an “optimal timeframe” was attached. All measures are envisaged to be adopted at the EU level by mid 2004, so that they can be transposed into national laws by 2005. The latest progress report published by the Commission stated that 31 had been achieved by December 2002 (European Commission, 2002a, 2003), including e.g. directives on financial collateral arrangements, UCITS (which stands for Undertakings for Collective Investment of Transferable Securities, covering

various forms of investment funds), insurance intermediaries, financial conglomerates, distance marketing of financial services, winding-up of banks and insurance companies, money laundering and e-money as well as the creation of the two securities committees foreseen by the Lamfalussy report (see next sub-section). Measures included in the action plan where progress has proven to be more difficult include e.g. the European takeover directive.

#### **4.2 The Lamfalussy report on the regulation of European securities markets**

On 17 July 2000 the Economics and Finance Ministers of the European Union appointed an independent Committee of Wise Men (2001) under the chairman Alexandre Lamfalussy to discuss “the practical arrangements for implementation of the Community rules concerning the areas identified by the [Financial Services] Action Plan and ... propose various approaches to adjusting the practice of regulation and cooperation between regulators...”.<sup>22</sup> For example, it requested the committee “to consider how to achieve a more effective approach towards transposition and implementation, in particular in the following areas of regulation: the listing of enterprises, the public offer of securities and requirements relating to reporting by issuers, the conduct of cross-border financial operations, the day-to-day operation of the regulated markets, the protection of consumers and investors in the provision of investment services, and the integrity of the market”. However, ministers explicitly excluded the prudential supervision of banks from the mandate of the committee (see the next sub-section).

Based on the responses it received on a questionnaire made available on the Internet and sent to a wide range of institutions and experts in the field of securities market regulation, the committee affirmed that “there are significant gains from building an integrated financial market in the European Union”. If the EU would not capture those benefits, then economic growth, employment and prosperity will be lower and the weaker European performance will lead savings to be diverted to foreign market places. It identified the existing EU legislative process, which is described as “too slow, too rigid, complex and ill-adapted to the pace of global financial market change”, as a major source of regulatory obstacles to achieving the full integration of European financial markets.<sup>23</sup> The committee also noted that due to ambiguity “existing rules and regulations are implemented differently” (in different countries), threatening the “competitive neutrality” of supervision (p. 7).

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<sup>22</sup> Apart from Lamfalussy, the committee was composed of Cornelius Herkströter (Director of BHP Billiton and former President of Royal Dutch/Shell), Luis Angel Rojo (former Governor of the Bank of Spain), Bengt Ryden (President of the Stockholm Stock Exchange and former President of the International Federation of Stock Exchanges, FIBV), Luigi Spaventa (President of the Italian securities market regulator CONSOB), Norbert Walter (Chief Economist of Deutsche Bank) and Nigel Wicks (Chairman of the British securities settlement company CRESTCo).

<sup>23</sup> Under the legislative process in force at the time the European Commission proposed full directives to the Council of Ministers and the European Parliament. Both had to decide on the legislation, including the technical details. After this agreement on the EU level, it had to be implemented by all member states.

To heal these shortcomings the Lamfalussy Report proposes a new regulatory approach for the EU, which distinguishes four “levels” of work in the regulatory process. Level 1 concerns the development of broad regulatory “framework principles”, the core political principles essential for the respective legislation. These principles would be developed within the current institutional set-up, i.e. the adoption of directives and regulations through joint decisions of the Council and the Parliament upon a recommendation by the Commission. A key novelty of the proposals is that the development of the technical details of level 1 directives and regulations (level 2 implementation measures) would be delegated to a fast-track procedure involving two new committees, the European Securities Committee (ESC) and the Committee of European Securities Regulators (CESR).<sup>24</sup> Regulatory proposals would be put forward by the European Commission to the ESC, based on the advice of the CESR. The CESR would be composed of the heads of national securities market regulators and undertake market and consumer consultations. The ESC would be composed of very highly ranked ministry officials (usually state secretaries in finance ministries), chaired by a commissioner and decide by qualified majority. It would basically act like an area-wide regulatory body. The European Central Bank would participate in it as an observer.

An important feature of these arrangements is that while the Parliament preserves its role regarding the broad “framework principles” (level 1), it would be very little involved in the elaboration of the technical details (level 2). However, the level 2 committees would be obliged to keep the Parliament fully informed on the technical work and the Parliament would have the right to send a level 2 legislative proposal back to the Commission for re-examination in case it goes beyond the ambit of technical details of level 1 legislation. Overall, keeping the role of the Parliament and the Council of Ministers mainly at the top level of broad principles is expected to lead to a speedier procedure for passing new regulatory legislation or subsequent amendments.

The CESR would also have an independent role on the third level of the regulatory process, the homogenous implementation of level 1 and level 2 legislation at the national level. Representatives of national regulators would cooperate in the committee to reach consensual agreements on this. Finally, the European Commission would be in charge of strengthening the enforcement of regulatory legislation on the national level, cooperating with other relevant parties (level 4).

Apart from the legislative process in the area of securities market regulation, the report also makes three further recommendations: 1) Regulatory and supervisory structures should converge more among member countries; 2) an EU regulatory framework for clearing and securities settlement should be established and issues of competition policy and systemic stability in this sector addressed; and 3)

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<sup>24</sup> Of course, clarity about the distinction between level 1 and level 2 decisions is crucial. The Lamfalussy report therefore presents several examples (Committee of Wise Men, 2001, pp. 22-24).

cooperation between financial regulators and institutions in charge of micro and macro prudential supervision should be strengthened.

On the basis of the report, the European Council (2001) approved at its Stockholm meeting in March 2001 a resolution on more effective securities market regulation in the European Union. This resolution welcomed the Lamfalussy report and approved the implementation of its four-level approach (framework principles, implementing measures, cooperation and enforcement). However, it also formulated a number of additional points, some of which apparently aim at clarifying the institutional balance between Commission, Council and Parliament. In particular, the split between framework principles (level 1) and implementing measures (level 2) should be decided on a case-by-case basis by the European Parliament and the Council based on a proposal by the Commission. The resolution generally calls for clarity and transparency, which allows all parties to know in advance the precise scope and purpose of the provisions pertaining to each of those levels. For example, the Commission should indicate in advance what kind of implementing measures are foreseen.

The Council resolution further requests the frequent use of the level 2 implementation measures that are faster to adopt. However, in doing this the Commission should avoid measures that go against “predominant views” in the Council. Since the Council endorsed them as well the European Securities Committee and the Committee of European Securities Regulators were created in June 2001. Both committees began to operate in the planned composition in 2002, addressing as their first tasks the market abuse (insider dealing and market manipulations) and prospectus directives.

#### **4.3 The application of the Lamfalussy framework to the banking sector and the reform of the Financial Services Policy Group**

Another field of policy work that will have an important impact on financial structures and integration in Europe is the reform of institutional structures for bank regulation and supervision. The Brouwer Report (Economic and Financial Committee, 2000) had still concluded that the “existing *institutional* arrangements provide a coherent and flexible basis for safeguarding financial stability in Europe” (italics by the authors) and that “no institutional changes are deemed necessary.” It rather called for strengthening international co-operation and exchange of information between supervisory authorities and central banks within the current institutional set-up.

During the preparation of this paper, however, the situation changed in that both the German and the UK government supported in the informal ECOFIN meeting in Oviedo in April 2002 the view that new arrangements may be necessary to better deal with threats to financial stability at the EU level. A good deal of the subsequent discussion revolved around the issue whether and how the four-level Lamfalussy framework (including related committees) could be applied to other financial sectors,

notably banking and insurance. At its meeting in July 2002 the ECOFIN Council asked the Economic and Financial Committee to report on the implementation modalities of this approach for other financial sectors by September 2002.

The Economic and Financial Committee (EFC) responded to this request with a report on financial regulation, supervision and stability (Economic and Financial Committee, 2002). To take into account sector specificities, the report advances the establishment of three different level-2 committees for banking insurance and financial conglomerates. The level of their members, the origin of their chair persons and their function within each sector follow closely the example of the European Securities Committee. The previously existent Banking Advisory Committee and the Insurance Committee will be reformed to become the level-2 committees in their respective sectors. The ECB would be an observer in the banking and conglomerate committees.

Similarly, the level-3 committees for banking and insurance follow closely the example of the Committee of European Securities Regulators. There would be no extra level-3 committee for financial conglomerates. However, to benefit from synergies between banking supervision and central banking both national supervisory authorities and central banks without supervisory responsibility would be represented in the banking committee, with supervisors holding the vote. Moreover, the ECB, the Banking Supervision Committee (BSC) of the European System of Central Banks and the Groupe de Contact would participate as observers. The Groupe de Contact also becomes the main working group of the banking committee and would deal – inter alia – with the exchange of sensitive supervisory information, including in crisis management situations. In relation to this and as a follow-up to the recommendations of the Brouwer Report the Banking Supervision Committee of the European System of Central Banks worked on the development of co-operation principles and procedures between central banks and supervisors in the European Union. Very recently, they have been formalised in a “Memorandum of understanding on high-level principles of co-operation between the banking supervisors and central banks of the European Union in crisis management situations” (see European Central Bank 2003b).

At the same time when the ECOFIN Council adopted the Lamfalussy approach for all financial sectors, it also requested a reform of the Financial Services Policy Group (FSPG). As mentioned above, this group had been established under the chairmanship of the Internal Market Commissioner, comprising personal representatives of ECOFIN Ministers and the ECB. In the context of the establishment of the single market for financial services, it had been asked to examine the need for new legal initiatives, for changes in existing provisions, for simplifications and for making existing provisions more coherent. Subsequently, it was asked by the Council to continue addressing questions of strategy, discuss cross-sector developments and monitor progress with the FSAP.



The reform reconfigured the FSPG under member state chairmanship and gave it a partly new role to provide political advice and oversight on financial market issues to the ECOFIN Council. In doing this, it is intended to “fill the currently existing gap between the political and the technical regulatory level and provide for cross-sectoral strategic reflection, separate from the legislative process” (Economic and Financial Committee, 2002, p. 20). Apart from defining strategic areas and monitoring the implementation of the FSAP, it will also consider “hot” short-term issues. Pragmatic co-operation with the level-2 committees is expected. Particularly important may become in the future that the new FSPG should “in a special format contribute, via the EFC, to discussions in the ECOFIN (or particularly, informal meetings of Ministers of Economy and Finance and Central Bank Governors) on issues related to financial stability”. For this purpose it should consider stability issues across banking, insurance and capital markets, discuss vulnerabilities in the EU financial system and build networks with supervisors, level-3 committee chairs and the ECB.

Overall, it emerges that the introduction of the Lamfalussy Committees and the reform of the FSPG have the potential to foster the multilateral mode of financial services sector and financial stability policies in Europe. As a consequence these institutional reforms may have prepared the ground for further progress with European financial integration. So far, European policy makers have regarded the step to European supervisory authorities as premature. However, when the time comes it seems likely that the new Lamfalussy Committees will constitute the nucleus of such new authorities.

#### **4.4 The work of the Giovannini group**

In 1996 the European Commission established a group of financial market participants and experts, chaired by former MIT professor Alberto Giovannini. The initial task of this “Giovannini Group” was to advise the Commission on how to prepare the capital markets for stage 3 of EMU. In this capacity the group produced its first report on “The impact of the introduction of the euro on capital markets” (European Commission, 1997). The main objectives of this document were to identify technical solutions for bond, equity and derivative markets how to manage the changeover and to provide guidance for both public authorities and market participants. It drew together the market view at the time how harmonised the future euro markets should ideally be. The most important recommendations were derived on bond markets. For example, the report had an important impact on how public debt was re-denominated into euro. It also gave advice on which market conventions should be harmonised and how (e.g. regarding day counts, coupon frequency and business day definitions).

After the euro changeover the group continued to provide the Commission with economic analyses and market-based perspectives on capital market issues in the EU, in particular regarding market efficiency and improvements in market integration. So far, it delivered three more reports and a fourth has been expected since the fall of 2002. The second report on “The EU repo markets: opportunities for



change”, issued in October 1999 (European Commission, 1999b), stated that the markets for repurchase agreements (repos) in the European Union were fragmented through infrastructures, market practices, and fiscal and legal differences (see also the discussion in sub-section 3.1). It made one general and several specific recommendations how to improve this situation. Generally, the report recommended actions that would enable counterparties located in different EU countries to trade better securities originating from different countries, adopting a single, cost-efficient approach and infrastructure platform.

The specific recommendations were addressed to market operators, infrastructure providers and public authorities. Market operators are asked to review self-imposed rules and practices that limit repo activity of institutional investors, adopt sound risk management techniques (such as standardised documentation, daily marking-to-market, prudent hair-cuts etc.) and introduce timely margin payments that are identified separately from income payments. Infrastructure providers should reduce transaction costs, which originate in multiple trading, netting and settlement systems each using different communication systems and operation procedures, through the standardisation of systems. Finally, public authorities should encourage the adoption of sound risk management, remove remaining tax disincentives to repo activity and introduce legislative reforms. The latter concern particularly the recognition of netting, the reliability of collateralisation techniques and the extension of “finality” recognition to repo trading and related settlement procedures.

The third, somewhat shorter report by the Giovannini Group addressed the issue of “Co-ordinated public debt issuance in the euro area” (European Commission 2000). It argues that while considerable harmonisation of national market conventions had already been achieved, important remaining differences are a source of market fragmentation. In this regard the report refers to premia greater than what seem to be justified by credit risk (see Figure 8 in sub-section 3.2) and points out that the current decentralised approach to public debt issuance is an obstacle to full market integration. However, market participants in the group were divided about how severe such problems are. Some agreed with the inefficiency view, pointing to different liquidity premia across issuers and problems of deliverability into futures contracts. Others argued that spreads are not sufficiently large or volatile to cause any great concern and that, in any case, the market was still too young to allow for strong conclusions.

Four options (or “hypotheses”) for greater co-ordination are discussed: 1) Co-ordination on technical aspects of debt issuance; 2) creation of a joint debt instrument with several country-specific tranches; 3) creation of a single euro-area debt instrument backed by joint guarantees; and 4) borrowing by an EU institution for on-lending to member states. The Giovannini Group did not reach a consensus on proposing any of these options, but it stated that a joint debt instrument does not seem to be practical for the euro area as a whole. However, it was agreed that such an instrument could be beneficial for a sub-group of smaller member states, currently paying higher liquidity premia. It is also clear that the

options implying reciprocal guarantees on debts by different member states would require changes of the Maastricht Treaty and have other legal and institutional consequences that are outside the remit of this group.

The present work of the Giovannini Group focuses on clearing and settlement infrastructures in the EU. A first report “Cross-border clearing and settlement arrangements in the European Union” (European Commission 2001) describes “clearing and settlement as an essential feature of a smoothly functioning securities market, providing for the efficient and safe transfer of ownership from the seller to the buyer” (p. i). However, despite some recent consolidation the EU infrastructure for clearing and settlement remains highly fragmented (19 national central securities depositories (CSDs) and 2 international CSDs (ICSDs)). The group affirms that “the additional cost that is associated with this fragmented infrastructure represents a major limitation on the scope for cross-border securities trading in the Union”. For example, participants estimate that the per-transaction income of ICSDs (a proxy of their fees) is about 11 times higher than the case for national CSDs. (See also the discussions in sections 3.1, 3.2 and 3.3.)

The report identifies 15 barriers to efficient cross-border clearing and settlement, 10 regarding national differences in technical requirements/market practices, 2 concerning national differences in tax procedures and 3 originating in legal uncertainty. It calls for market-led convergence in technical requirements/market practices and public efforts in the area of taxes and legal harmonisation. However, it recognises that legal uncertainties due to the concepts of underlying national laws would be difficult to change. The second report in this field is expected since the fall of 2002 and will deal with future prospects of this industry and potential models for restructuring.

## **5. CONCLUSION**

This paper described the main developments in the euro area financial markets before and after the introduction of the single currency. We first compared the financial structure of the euro area with that of the United States and Japan. We documented how the euro area financial structure is placed somewhat in between those of these two countries, with financial institutions playing an important role, but with market based instruments developing further. We then looked at the evolution of the euro area financial structure in the last few years. We found that the importance of government financing has gradually diminished in the period under review, while one of the most dynamic financial market developments was the expansion of the market for corporate bonds. The increased bond issuance, however, has not yet led to a regime shift in which market-based instruments have to a significant extent substituted loans and private equities as the primary means of corporate financing in continental Europe. Interestingly, in various dimensions the financial structure of euro-area countries seem to become more diverse over time.

We assessed the progress towards financial integration in the most important euro-area financial segments, namely money, bond, and equity markets, as well as banking. The available data suggest that the unsecured money market strongly integrated with the introduction of the euro, as the single currency and related euro-area-wide large-value payment systems link the different countries well. The same cannot be said, however, about the repo market. Government bond markets also integrated considerably with the EMU convergence process, but they still exhibit some small but non-negligible cross-country yield differentials since January 1999, that cannot be explained with credit risk. Moreover, as different sovereigns focus their issuance on different maturities, there is no single homogeneous benchmark yield curve, which hinders arbitrage and derivatives pricing. As the euro made primary corporate bond markets more contestable, in particular regarding foreign competition, one important factor in the development of this market was a considerable reduction of underwriting fees. Also, some progress occurred in the integration of euro-area equity markets, as stock exchanges in a few countries merged to form Euronext and professional asset managers replaced country allocation by sector allocation strategies. Powerful obstacles to the further integration of repo, bond and equity markets remain the still fragmented securities settlement industry in Europe, which charges much higher fees for cross-border transactions than for domestic transactions, and differences in legal systems. While asset holdings have become more international in the euro area since the introduction of the euro, securities markets are still much less integrated than in the US, for example. In the area of retail banking the increased homogeneity of interest rates seems to be driven more by macroeconomic convergence than by market integration. For example, cross-border loans to non-banks have somewhat increased, but remain a very small fraction of total lending. This is quite different in wholesale activities, as inter-bank lending jumped up with the introduction of the euro and banks' cross-border securities holdings also expanded considerably. While the strongly domestic bias in the consolidation strategies of European banks has only changed very mildly recently and while the single European passport to create foreign bank branches seems not to be used very much, it is interesting to report the observation that also in the US cross-state penetration by banks still remains quite limited.

Finally, we discussed in detail the most important high-level policy initiatives to foster financial integration in Europe: the Commission's Financial Services Action Plan, the Lamfalussy Committee of Wise Men and the application of its work to all financial sectors, as well as the work of the Giovannini Group. We reviewed the main microeconomic and legal reforms identified in and tackled after these initiatives, and we documented the institutional changes to which they led. For example, recent institutional changes for cross-border supervisory co-operation seem to have laid out the path through which a more centralised European supervisory structure may emerge in the future.

## REFERENCES

- Adam, K., T. Japelli, A. Menichini, M. Padula and M. Pagano (2002), Study to analyse, compare, and apply alternative indicators and monitoring methodologies to measure the evolution of capital market integration in the European Union, prepared by the Centre for Studies in Economics and Finance for the European Commission, Brussels, 28 January.
- Adjaouté, K. and J. Danthine (2003), European financial integration and equity returns: a theory-based assessment, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.
- Adjaouté, K., L. Bottazzi, J. Danthine, A.M. Fischer, R. Hamoui, R. Portes and M.R. Wickens (2000), EMU and portfolio adjustment, CEPR Policy Paper No. 5, November.
- Allen, F. and D. Gale (1995), A welfare comparison of intermediaries and financial markets in Germany and the US, *European Economic Review*, **39(2)**: 179-209.
- Allen, F. and D. Gale (2000), *Comparing Financial Systems* (Cambridge, MA: MIT Press).
- Ang, A. and A. Maddaloni (2003) Do demographic changes affect risk premiums? Evidence from international data, *Journal of Business* (forthcoming).
- Angeloni, I. and M. Ehrmann (2003), Monetary policy transmission in the euro area: any changes after EMU?, ECB Working Paper, forthcoming.
- Ayuso, J. and R. Blanco (2001), Has financial market integration increased during the Nineties?, *Journal of International Financial Markets, Institutions & Money*, **11**: 265-287.
- Bekaert, G. and C.R. Harvey (1995), Time-varying world market integration, *Journal of Finance* **50**: 403-444.
- Belaisch, A., L. Kodres, J. Levy and A. Ubide (2001), Euro-Area banking at the crossroads, IMF Working Paper, no. 01/28, March.
- Berger, A., R. Demsetz and P. Strahan (1999), The consolidation of the financial services industry: causes, consequences, and implications for the future, *Journal of Banking and Finance*, **23**: 135-194.
- Berger, A., R. DeYoung and G. Udell (2000), Efficiency barriers to the consolidation of the European financial services industry, *European Financial Management*, **7**: 117-130.
- Berger, A., L. Klapper and G. Udell (2001), The ability of banks to lend to informationally opaque small business, *Journal of Banking and Finance*, **25**: 2127-2167.
- Berger, A., Q. Dai, S. Ongena and D. Smith (2003), To what extent will the banking industry be globalized? A study of bank nationality and reach in 20 European nations, *Journal of Banking and Finance*, **27**: 383-415.
- Blanco, R. (2001), The euro-area government securities markets. Recent developments and implications for market functioning, paper presented at the launching workshop of the ECB-CFS research network on "Capital Markets and Financial Integration in Europe", Frankfurt, 29-30 April (<http://www.eu-financial-system.org/April2002%20Papers/Blanco.pdf>).
- Boot, W.A. and A.V. Thakor (1997), Financial system architecture, *Review of Financial Studies*, **10(3)**: 693-733.

Buch, C. and G. DeLong (2002), Cross-border bank mergers: what lures the rare animal?, paper presented at the launching workshop of the ECB-CFS research network on “Capital Markets and Financial Integration in Europe”, Frankfurt, 29-30 April (<http://www.eu-financial-system.org/April2002%20Papers/Buch.PDF>).

Buch, C., J. Driscoll and C. Ostergaard (2003), International diversification in bank asset portfolios, paper presented at the second workshop of the ECB-CFS research network on “Capital Markets and Financial Integration in Europe”, Helsinki 11-12 March (<http://www.eu-financial-system.org/March2003%20Papers/C.Ostergaard.pdf>).

Brookes, M. (1999), The impact of EMU on portfolio management, European banking after EMU, EIB Papers, vol. 4,1.

Cabral, I., F. Dierick and J. Vesala (2002), Banking integration in the euro area, ECB Occasional Paper No. 6.

Canoy, M, M van Dijk, J Lemmen, R de Mooij and J Weigand (2001), Competition and stability in banking, CBP Document, no. 015, Netherlands Bureau for Economic Policy Analysis, December.

Carletti, E and P Hartmann (2003): “Competition and stability: what’s special about banking?”, forthcoming in P Mizen (ed), *Monetary History, Exchange Rates and Financial Markets: Essays in Honour of Charles Goodhart Vol 2*, Cheltenham, Edward Elgar. (ECB Working Paper, no 146, May 2002.)

Carnegie-Brown, B. and M. King (2003), Development of the European Bond Markets, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

CEPS (2000), The EU repo markets, study by the Centre for European Policy Studies for the European Commission, Tender No. II/99/006 April.

Chatelain, J.B., A. Generale, I. Hernando, U. von Kalckreuth and Philip Vermeulen (2003), New findings on Firm investment and monetary transmission in the euro area, *Oxford Review of Economic Policy*, this issue.

Ciampolini, M. and B. Rohde (2000), Money market integration: a market perspective, paper presented at the ECB conference “The Operational Framework of the Eurosystem and Financial Markets”, Frankfurt, 5-6 May.

Committee of Wise Men (2001), Final report of the Committee of Wise Men on the regulation of European securities markets (“Lamfalussy Report”), Brussels, 15 February.

Danthine, J.-P., F. Giavazzi and E.-L. von Thadden (2001), The effect of EMU on financial markets: a first assessment, in C. Wyplosz, ed., *The Impact of EMU on Europe and the Developing Countries*, Oxford University Press, pp. 225-268.

Degryse, H. and S. Ongena (2002), Distance, lending relationships, and competition, manuscript, Tilburg University.

Dermine, J. (2003), European banking: past, present and future, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

- Detken, C. and P. Hartmann (2000), The euro and international capital markets, *International Finance*, **3(1)**: 53-94.
- Detken, C. and P. Hartmann (2002), Features of the euro's role in international financial markets, *Economic Policy*, **24(October)**: 555-569, 595-597.
- Dunne, P., M. Moore and R. Portes (2002), Defining benchmark status: an application using euro-area bonds, CEPR Discussion Paper No. 3490, August.
- Economic and Financial Committee (2000), Report on financial stability, prepared by an ad hoc working group of the EFC ("Brouwer Report"), Economic Papers, no. 143, Brussels, May.
- Economic and Financial Committee (2002), EFC report on financial regulation, supervision and stability, revised to reflect the discussion at the 8 October meeting of the Ecofin Council, Brussels, 9 October.
- Ehrmann, M., L. Gambacorta, J. Martinez-Pages, P. Sevestre and A. Worms (2003), The effects of monetary policy in the euro area, *Oxford Review of Economic Policy*, this issue.
- European Central Bank (2001a), The euro money market, Frankfurt.
- European Central Bank (2001b), The euro bond market, Frankfurt.
- European Central Bank (2001c), Characteristics of corporate finance in the euro area, Monthly Bulletin, February, 37-50.
- European Central Bank (2002a), Report on financial structure, Frankfurt.
- European Central Bank (2002c), Euro money market study 2001 (MOC), Frankfurt, December.
- European Central Bank (2003a), Structural factors in the EU housing markets, Frankfurt.
- European Central Bank (2003b), Memorandum of Understanding on high-level principles of co-operation between the banking supervisors and central banks of the European Union in crisis management situations, press release, Frankfurt, 10 March.
- European Commission (1997), The impact of the introduction of the euro on capital markets, Brussels, July.
- European Commission (1999a), Financial services: implementing the framework for financial services: action plan, COM(1999)232, Brussels, 11 May.
- European Commission (1999b), The EU repo markets: opportunities for change, Euro Papers, no. 35, Brussels, October.
- European Commission (2000), Co-ordinated public debt issuance in the euro area, Brussels, 8 November.
- European Commission (2001), Cross-border clearing and settlement arrangements in the European Union, Brussels, November.
- European Commission (2002a), Financial services: meeting the Barcelona priorities and looking ahead: implementation, Seventh Progress Report on the Financial Services Action Plan, Brussels, 3 December.
- European Commission (2002b), SMEs in Europe, including a first glance at EU candidate countries, Observatory of European SMEs.



European Commission (2003), Annex – progress on the Financial Services Action Plan, Brussels, 25 February.

European Council (1998), Presidency conclusions, Cardiff European Council, 15-16 June.

European Council (2001), Presidency conclusions, Stockholm European Council, 23-24 March.

Focarelli, D. and A. F. Pozzolo (2001), The patterns of cross-border bank mergers and shareholdings in OECD countries, *Journal of Banking and Finance*, **25(12)**: 2305-2337.

Fratzscher, M. (2001), Financial market integration in Europe: on the effects of EMU on stock markets, ECB Working Paper No. 48

Galati, G. and K. Tsatsaronis (2001), The impact of the euro on Europe's financial markets, BIS Working Paper, no. 100, Basel, July.

V. Gaspar, P. Hartmann and O. Sleijpen (2003), *The Transformation of the European Financial System*, (edited by), Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

Giannetti, M., L. Guiso, T. Japelli, M. Padula and M. Pagano (2002), Financial integration, corporate financing and economic growth, final report by the Centre for Economic Policy Research to the European Commission, 22 November.

Gorton, G. and F. A. Schmid (2000), Universal banking and the performance of German firms, *Journal of Financial Economics*, **58**: 29-80.

Guiso, L., M. Haliassos and T. Jappelli (2003), Household stockholding in Europe: where do we stand and where do we go?, *Economic Policy*, **36**: 123-170.

Hartmann, P., M. Manna and A. Manzanares (2001), The microstructure of the euro money market, *Journal of International Money and Finance*, **20(6)**: 895-984.

Huizinga, H. (2003), Comment on “European banking: past, present and future”, in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The transformation of the European financial system*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt, forthcoming.

Issing, O. (2002), Monetary policy in an environment of global financial markets, Keynote speech delivered at the Launching Workshop of the ECB-CFS Research Network on “Capital Markets and Financial Integration in Europe”, European Central Bank, Frankfurt, 29 April.

King, R.G. and R. Levine (1993), Finance and growth: Schumpeter might be right, *Quarterly Journal of Economics*, **108(3)**: 717-737.

Levine, R. (1997), Financial development and economic growth: views and agenda, *Journal of Economic Literature*, **35(2)**: 688-726.

London Economics (2002), Quantification of the macro-economic impact of integration of EU financial markets, final report by London Economics in association with PricewaterhouseCoopers and Oxford Economic Forecasting to the European Commission, November.

Moneta, F. (2000), Recent developments in European stock exchanges, master thesis, University of Pisa.

Morin, F. (2000), A transformation in the French model of shareholding and management, *Economy and Society*, **29**: 36-53.

Padoa-Schioppa, T. (2003), Central banks and financial stability: exploring a land in between, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

Peree, E. and A. Steinherr (2001), The euro and capital markets: a new era, *The World Economy*, **24(10)**: 1295-1308.

Petersen, M. and R. Rajan (2002), Does distance still matter? The information revolution and small business lending, *Journal of Finance*, **57**: 2533-2570.

Poterba, J.M. (2001), Demographic structure and asset returns, *Review of Economic and Statistics*, **83(4)**: 565-584.

Poterba, J.M. (2003), Taxation, risk-taking and household portfolio behaviour, forthcoming in *Handbook of Public Economics*, Volume 3.

Rajan, R and L. Zingales (2003), Banks and markets: the changing character of European finance, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

Rosengren, E. (2003), Comment on European banking: past, present and future, forthcoming in V. Gaspar, P. Hartmann and O. Sleijpen eds., *The Transformation of the European Financial System*, Proceedings of the 2<sup>nd</sup> ECB Central Banking Conference, ECB, Frankfurt.

Santos, J. and K. Tsatsaronis (2002), The cost of barriers to entry: evidence from the market for corporate euro bond underwriting, paper presented at the launching workshop of the ECB-CFS research network on "Capital Markets and Financial Integration in Europe", Frankfurt, 29-30 April (<http://www.eu-financial-system.org/April2002%20Papers/Santos.pdf>).

Schmidt, R., A. Hackethal and M. Tyrell (1999), Disintermediation and the role of banks in Europe: an international comparison, *Journal of Financial Intermediation*, **8**: 36-97.

Sorenson, B. and O. Yosha (1998), International risk-sharing and European monetary unification, *Journal of International Economics*, **45**: 211-238.

Steil, B. (1996), Globalization of equity markets and the cost of capital, NBER Working Paper 7021.

Stulz, R. (1999), Globalization of equity markets and the cost of capital, NBER Working Paper 7021.

Thakor, A.V. (1996), The design of financial systems: an overview, *Journal of Banking and Finance*, **20**: 917-948.

Yosha, O., S. Kalemli-Ozcan and B. Sorenson (2001), Economic integration, industrial specialization and the asymmetry of economic fluctuations, *Journal of International Economics*, **55**: 107-137.



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