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Avadanei, Andreea

Doctoral School of Economics, Faculty of Economics and Business Administration, University "Alexandru Ioan Cuza" Iasi, Romania

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EUROPEAN CORPORATE BOND MARKET INTEGRATION: LESSONS FROM EMU

Andreea Avadanei
Doctoral School of Economics
"Alexandru Ioan Cuza" University of Iasi
andreea_avadanei@yahoo.com

Abstract: *The scope of this article is to point out the features of European corporate bond market, in particular its development since the euro introduction. We structured our paper on chapters that present its economic importance, the implications of the common currency in respect to its growth and the level of integration in the present context. This market, including the debt securities issued by non-financial corporations, non-monetary financial corporations and monetary financial institutions, is economically important, as it contributes to the allocation of funds to their most profitable uses. Its rapid growth since the introduction of the euro can be explained by developments in economic activity, the costs of issuance and mergers &acquisitions-related activity. The adoption of the common currency had a direct and permanent effect on debt securities issued by non-monetary financial corporations. However, the use of corporate bonds at the euro area level is not uniform across countries. Country-specific factors continue to matter, despite the fact that financial markets are gradually becoming more integrated.*

Keywords: corporate bond market, euro, financial integration, economic importance, market segmentation.

JEL Classification: G15, E50, G29, F15, G14.

1. INTRODUCTION

The European Monetary Union (EMU) has probably been the single most important policy-induced innovation in the international financial system since the collapse of the Bretton-Woods system. It has opened the possibility for the creation of a new, fully integrated continental financial market, of the same scale as that of the United States. By eliminating exchange risk, EMU has eliminated a key obstacle to financial integration. Before EMU, otherwise identical financial claims issued in different euro area currency were imperfect substitutes and traded at different prices. EMU has eliminated this source of market segmentation.

The advent of the European Economic and Monetary Union is regarded as a crucial driving force of European financial integration. One of the most dynamic developments in the euro area

during the stage three of EMU was the expansion of the market for corporate bonds. The abolition of currency risk, as a result of euro introduction, together with increased bond standardization is widely seen as the main factors behind European bond market integration. Although the growth of the euro-denominated private sector bond market is impressive, the impact of the common currency on the primary market for corporate bonds remains controversial. The debate focuses on whether the increase in corporate debt securities issuance since 1999 is caused by short-term corporate restructuring and liberalization in the telecommunications industry (i.e. mergers &acquisitions activity-M&A) or whether is the result of the introduction of the single currency. The main economic argument for the latter is that euro has made corporate debt securities financing more attractive by creating a much larger home-currency investor base than existed for any of the euro area countries before the introduction of euro.

The article is structured to answer three research questions:

- ✓ What is the economic importance of the corporate bond market?
- ✓ What are the euro implications regarding the growth of this market?
- ✓ What is the degree of the bond market integration?

2. THE ECONOMIC IMPORTANCE OF THE CORPORATE BOND MARKET

The bond market plays a very important role in the financial systems of our economies. Bond markets bring lenders and borrowers together. They allow lenders to invest in relatively low risk assets and borrowers to obtain funds in relatively liquid markets. Bond markets are important in determining the prices of other assets and bank interest rates usually follow market-determinate interest rates on bonds. The prices determined in the bond markets affect household decisions to save and the corporate sector's investment decisions.

In the United States, the bond market is about the same size as the stock market. In Europe, bonds amount to approximately two-thirds of the total amount of securities outstanding. But the distribution of the total debt differs significantly between Europe and the US. In Europe, the bond market is dominated by government bonds and bonds issued by financial intermediaries. In the US, the proportion of bonds issued by the non-financial corporate sector is much larger. In addition, municipal bonds and agency bonds are major components of this market. Moreover, at least in Europe, it is difficult and costly to short sell corporate bonds (Biais *et al.*, 2006, p.7). This further reduces the liquidity of the corporate bond market. The European bond market shows broad similarities with the US market (Annaert and De Ceuster, 2000); in particular, the average spreads increase both by credit risk and by maturity and there is evidence of a strong correlation between

credit spread and the determinants of interest rate term structure. However, their results are based on a rather limited period when the euro corporate bond market was not ye well developed.

Corporate bond markets were almost nonexistent for European non-financial institution in 1998. So were markets for "junk" bonds. These markets emerged as the pool of potential investors increased following the adoption of the euro. But corporate bond markets as a whole underwent a substantial development. Today, the European market is almost twice the size of the US corporate bond market, which has been driven by a number of factors including:

✓ Lower bond market transactions cost caused, in particular, by the introduction of the common currency at the beginning of the 1999. The euro also acted as a catalyst for further corporate debt development and was a driving force towards more transparency and uniform pricing as it led to an enlarged single currency market. Together with prospects of a gradual removal of various financial barriers for many companies it enabled large issues to be syndicated over many more investors in the euro zone;

✓ The EU Stability and Growth Pact prescribing that the governments of EMU countries reduce government debt;

✓ A move away from equities by market participants, which was spurred by the decline in most European economies and bad experiences with Internet/IT hype;

✓ A change in bank behavior. In the aftermath of the end of the Internet bubble, banks also tightened their lending policies to defend against corporate defaults. The banks became quite reluctant to provide corporate loans and instead preferred bonds;

✓ Very large growth in credit derivatives;

✓ The advent of the electronic trading;

✓ Increased savings together with future prospects of increased liabilities of institutional investors. These investors, mainly pension funds and insurance companies, lave long-term obligations and have to match their assets and liabilities. That is why they are, to a large extent, committed to investing in bonds, government as well as corporate bonds. Moreover, they care more about avoiding loss than picking winners, so investments in equities and real estate are relatively less attractive. As investment performance is of relevance one looks to yield to maturity and the spread over government bonds or interest rate swaps and for portfolio development to indices and/or the performance of peers.

For several reasons, the existence of a robust corporate bond market (direct finance) alongside a sound banking system (indirect finance) is an important feature of a well-developed financial system. First, under usual credit conditions, corporate bonds provide a greater degree of flexibility than bank loans, which are subject to stricter covenants and narrower investment conditions. In general, a well-developed corporate bond market is beneficial in smoothing the financing of firms

as it can provide funds that are complementary to bank-based debt or equity (Philip and Stone, 2004, p.37).

Second, a well-developed financial sector, in which there is a deep and liquid market for bonds that are either rated below investment grade or unrated, facilitates the establishment of innovative new business and the transformation of medium-sized firms into large enterprises.

Third, the market pricing of corporate bonds takes place on a continuous basis through the interplay of market participants. As a result, the quality of credit is monitored by a large number of market participants on a continuous basis, which means that a financial system with a well-developed corporate bond market provides immediate discipline for the activities of corporations through the price of their marketable liabilities.

Fourth, from a macroeconomic perspective, the corporate bond market is a useful source of information on future economic activity and current credit conditions in the economy. Finally, developments in the corporate bond market may affect the costs and scope of financial intermediation and therefore the monetary policy transmission process. In addition, firms face an external finance premium on bond financing, which, in turn, may be affected by the stance of monetary policy.

A market so important should operate well. For the corporate bond market, this means both efficiency and liquidity. Efficient bond prices, incorporating all available information, will be better signals to investors and savers than if the markets did not incorporate relevant information fully into prices. Liquid bond markets bring transactions costs down for investors, who therefore achieve greater gains from trade, and they minimize the cost of funds to firms.

Despite the key role of the corporate bond markets, there has been much less academic attention devoted to bond markets than to equity markets. The big gap is in the empirical work, and the main reason for this is the data availability. Since the 1990s, several stock exchanges (including the London Stock Exchange, the New York Stock Exchange and the Paris Bourse) have disseminated rich, high-frequency data. Many academic studies have relied on these datasets to illuminate the operation of the stock markets. We now have well-defined measures of transaction costs (i.e., the effective spread) and numerous empirical studies documenting the consequences of several features of the design of these markets. In contrast, there are only a few studies on the corporate bond market, most of these on US Treasuries. But this market is extremely liquid and active, and liquidity is likely to be very different in this setting than for corporate and municipal bonds.

3. THE IMPLICATIONS OF THE COMMON CURRENCY ON THE CORPORATE BOND MARKET GROWTH

In recent years the European corporate bond market *has grown rapidly* and the market's structure has undergone *some important chan*ges. Before 1998, the market was dominated by debt issued by highly rated financial corporations, whereas since that date industrial corporations have increasingly found their way to corporate bond market.

The segment experienced a major change in 1999, when issuing volumes more than doubled from $273 billion to $657 billion. While the 1998 issuing volume in the euro area was less than 26% of that in the US, the 1999 volume was more than 74% of the US level (Buti and Van der Noord, 2009, p.10). Part of this surge probably reflects exceptional and transient factors. First, the financial crisis of late 1998 resulted in catch-up issuing activity in early 1999(which, however, was equally relevant for the US as for the Europe). Second, the desire to set benchmarks with euro issues pushed issuers to go to the market earlier and in more concentrated volumes than they might have been chosen otherwise.

The relatively small corporate bond market in Europe until the late 1990s is mirrored by the correspondingly greater importance of bank lending. While in the US bank loans play a negligible role in the financing of large companies and face strong competition from the bond market even for medium-sized companies, they have been traditionally the dominant source of debt financing for almost all European companies, even the largest ones.

This feature of the European corporate finance began to erode in the second half of the 1990s. It is difficult to tell whether the change towards a stronger reliance on bonds have been driven mainly by firms or by the banks themselves. Part of the explanation is certainly the increasing reluctance of European banks to provide traditional loans, which inflate the asset side of balance sheets and thus depress key earnings ratios and require higher regulatory capital. But the introduction of the euro has clearly been a crucial event also for the other side of the market: companies have seen the opportunity of accessing a larger pool of investors and diversifying their liabilities, so as to provide some competition to their banks financiers and decrease their vulnerability to credit crunches.

As in the public sector, bond issuance policy in the private sector *changed fundamentally* in Europe in the late 1990s. For example, the size of the largest issues increased substantially. While in 1998 there were just three bond issues in euro legacy currencies above the equivalent of 1 billion euro, the three issues by Tecnost, the financing vehicle for Olivetti's takeover of Telecom Italia, in June and July 1999 alone raised 15.65 billion euro (Schultz and Wolff, 2008, p.17). Although these

issues were widely perceived as exceptional, issues sizes in general in Europe increased significantly since 1999, with issues above 1 billion euro becoming more and more frequent.

Furthermore, the *quality range of bond issues expanded significantly*. In particular, the average credit rating issuing companies fell significantly since EMU. While European bond markets used to be dominated by AAA and AA issues, almost 50% of all corporate bonds issued in 1999 had a single A credit rating. During recessions, lower-rated corporate bonds may suffer and might be traded less actively, thus reducing their liquidity, leading to higher liquidity premia.

A liquid market allows market participants to trade at low trading costs. Kyle (1985) identifies three dimensions of liquidity:

- ✓ *tightness*: the cost of turning around a position during a short period; in essence, this concept refers to *a low bid-ask spread*;
- ✓ *depth:* a market is deep if only large buy or sell orders can have an impact on prices;
- ✓ *resiliency:* a market is resilient if market prices reflect fundamental values and, in particular, quickly return to fundamental values after shocks.

Despite being relatively small, the euro area corporate bond market *has largely outpaced the growth in this sector in the United States and Japan* since the introduction of the euro. As regards issues by non-financial corporations, the average annual growth rate in the euro area between January 1999 and December 2005 was higher than in the US and Japan by around 10 percentage points. This contrasts with the situation prevailing before the introduction of the euro when the growth rate of non-financial corporate debt securities was considerably lower in the euro area compared to both US and Japan.

The rapid growth of debt securities issues by financial corporations has enabled the euro area market to grow at the same rate as in the US. In both cases, the average annual growth rate since the introduction of the euro stood at around 10%. This contrasts with the situation prevailing before the introduction of the common currency when the growth rate for the euro area market (4.9%) was on average nearly a third of the growth for the US market, with a value of 12.6% (Berg, Grande and Mongelli, 2005, p.11). By comparison, the growth of this sector in Japan is much lower than in the euro area and the US for the entire period ranging from January 1999 to December 2008. Much of the euro area growth for financial debt securities since the introduction of the euro has been driven by non-monetary financial corporations. Bonds issued by these entities primarily involve the securitization of assets by means of dedicated financing vehicles, such as special purpose vehicles. From the perspective of the originator, i.e., the borrower, which is usually a financial institution, the main motivations for securitization are regulatory, risk management, or funding needs.

The boom of the corporate bond market after 1999 *was stronger in the euro area than outside* and the introduction of the euro was a major causal in this development (Rajan and Zingales, 1998).

That the development of an active euro-denominated corporate bond market is the true success story of EMU is confirmed by the great liquidity of the market. The outstanding amounts of corporate bonds in the Euro area has increased from 2.700 billion euro in 1998 to about 6.000 billion in 2006 (European Central Bank, 2009, pp.23-36).The euro is, with a share of 90%, the predominant denomination of bond issued by Euro area residents.

What have the impacts of the euro been on the current state of the corporate bond markets? It has played an important catalyzing role for deepening and broadening on the euro area bond markets. Several implications of the single currency on the process have become evident over the last ten years although the time span since the introduction of the common currency is still short for definitive conclusions. Parallel to the euro's catalyzing role, a host of other factors might have contributed to corporate bond market developments. These include the various steps taken towards gradual economic and financial integration, structural and technological changes, globalization and liberalization.

The growth of the corporate bond market since the introduction of the euro is due to the confluence of a host of supply and demand related factors, not all of them directly related to the catalyzing influence of the single currency.

From a supply or issuer perspective, corporate bond issuers started to have a euro area wide perspective and benefited from easier access to the larger home-currency institutional) investor base, in particular the ability to issue in size. In the early years of the euro, the ongoing process of corporate restructurings, privatizations of state companies, and liberalization in many product markets resulted in a strong demand for M&A related funds. These funds, in turn, were in part funded by bonds. Most notable was a strong demand for funds by telecommunication companies to finance the growth of mobile telephony and the costs of wireless services. Industrial energy, power companies were, before and after 1999, generally among the most important non-financial corporate issuers. Much of the supply-side development is undoubtedly due to the boom of some industries such as telecommunication, which were liberalized and deregulated in the late 1990s in many western European countries. The resulting restructuring and consolidation fuelled a wave of mergers and acquisitions that were largely financed by bonds. After the collapse of the equity market in 2000 and the worsening of the commercial paper market in the early 2000s, the bond market gained particular importance as a source of long term funding.

At the same time as the supply of the euro-area bonds increased and issuance policies converged, geographical diversification increased strongly in the euro area bond portfolios on the demand side. This change was felt most dramatically with private issues. While until 1998 bond distribution in the euro zone for all but the very few largest firms was almost exclusively domestic, the larger bond issues already in 1999 were sold on a truly European scale that even surprised most

market participants. A typical example was the 1 billion euro issue of Alcatel, the French telecom firm, in February 1999, 28% of which was placed with Italian and more than 20% with German investors. A similar example was the 1999 issue by Principal Life, a US insurer; 30% of this deal was sold in France-in the past they might have sold 3% there.

With regard to demand, the possibilities for diversifying risk across euro area government bond markets have declined further since the introduction of the single currency, because the possibility of exploiting currency diversification to achieve higher rates of return at a given level or portfolio risk has ceased to exist. As a result, investors started to invest in euro-denominated corporate debt securities, which offer an extra yield compared to government bonds. This extra yield is particularly appealing to the investors, including pension funds that are used to investing in fixed income government bonds that offer a high nominal rate of return in many euro area countries.

At a general level, investors no longer needed to diversify exchange rate risk across euro area countries. Investment strategies based on cross-currency yield arbitrage and directional bets on national interest rates become obsolete in January 1999. The single currency encouraged bond investors to focus more closely on the assessment and pricing of credit risk and they started to educate themselves in the evaluation and management of credit risk and developed an increased appetite for it. On the same demand side, the introduction of the euro opened up new investment opportunities especially for internationally operating institutional investors such as investment funds and insurance companies as the launch of the euro meant the abolition of earlier contractual or statutory restrictions on their involvement in foreign debt markets. In addition, to such structurally higher demand, temporary factors have recently also helped to make corporate bonds more attractive. One factor was that life insurance companies and pension funds switched from equities to bonds, leading to great demand for such paper. Moreover, the decline in yields in the market for government bonds encouraged investment in higher-interest-bearing and more risky corporate bonds.

The expansion of the market for corporate bonds over the past few years was due, in particular, to the financing behavior of fairly large companies which have made increasing use of the bond market as an alternative to bank loans and internal financing. The main agents in these developments have been the complete liberalization of capital transactions in all countries in the EU as well as the fact that there is now no exchange rate risk following the introduction of the common currency with the earlier segmented markets of the various countries participating in EMU having become integrated. For the enterprises, the expanded, and therefore, more liquid market opens up the opportunity to place even large volume issues on favorable terms and conditions. Furthermore, there are indications that the direct issuance costs have fallen owing to keener competition among the investment banks in the wake of the monetary union. The increasing risk orientation in banks'

lending business, too, is likely to have had an impact on the market for corporate bonds. The development of the prudential regulations and especially the new Basel Accord (Basel II) has led to the banks improving their procedures for measuring and controlling credit risks. In turn, this has resulted in a more risk-appropriate pricing of loans. As a result, particularly for larger companies, there is greater substitutability-and therefore, competition-between bank loans and debt issuance. Finally, the liberalization of important markets outside the financial sector has also left its mark on the market for corporate bonds. Deregulation in the case of many European enterprises, first and foremost in the telecommunications sector, let to the emergence of a large borrowing requirement that was partially covered by the issuance of bonds.

Temporary factors have also played a part in the past few years. For example, German enterprises' inflows of funds have been subject to sharp fluctuations. Prior to 1998, German companies financed themselves predominantly through retained profits and write-downs, i.e. internally, whereas, in the wake of the technology boom, numerous mergers and acquisitions as well as the buying of the UMTS licenses (Universal Mobile Telecommunications Systems-licenses), the demand for external funds increased perceptibly. This stimulated their issuing activity in the euro area bond market. Empirical studies on companies' issuing behavior show that the corporate mergers and acquisitions in the late 1990s in particular brought with them an increased need for financial resources.

The buying of enterprises was not always financed directly by the issuance of bonds. Instead, it was often the case that banks first granted bridging loans. An additionally empirically relevant factor in the decision to issues bonds concerns the cost of bond financing when compared with the cost of other forms of financing such as share issuance or bank loans. A higher stock market evaluation tends to lower he issuance volume ob bonds. Conversely, the week equity market of the past few years appears to have encouraged the corporate sector in issuing activity. Alongside other forms of financing, borrowing via the bond market offers enterprises an additional option for raising capital. Following the end of the technology and takeover boom as well as the slump in stock market prices, these temporary factors became less important from 2000. Between 1999 and 2001, the external financing of non-financial corporations exceeded their internal financing, but declined noticeably thereafter. As a result of the slump in investment after the bursting of the technology bubble, the subsequent more subdued issuing activity of German companies and very week bank lending, internal financing became the predominant form of financing again in 2002.

Tentative empirical evidence for the first ten years of the euro suggests that the single currency had indeed a statistically sizeable direct impact on bonds issued by non-bank financials (De Bond and Lichtenberger, 2004). This permanent effect had been estimated to have positively affected the non-financial bond market growth by 5.5% on an annual basis. Securitization

transactions benefited especially from easier access to much larger investor base. The idea of a truly integrated euro area financial market has also had an indirect effect by triggering a wave of mergers and acquisitions that in part has been funded by bonds. The size of this indirect impact of the euro on the bond market growth has been estimated to have been up to 2.5% on an annual basis.

The introduction of the single currency created an opportunity to erode the segmentation of national financial markets by transforming them into a deep and liquid euro area-wide market. Although the corporate bond market has grown very rapidly ant the euro area aggregated level since the adoption of the common currency, the trend towards increasing direct access to bond markets is all but uniform across the euro area countries.

The varying benefits of corporate bond issuance is a reflection of the fact that institutional and fiscal frameworks, as well as other historically determined characteristics that shape financial structures, differ widely from one country to the next. In addition, the financing needs that are meant to be funded by these bonds may differ across euro area countries. In general, for instance, the rapid growth of the corporate bond market since 1999 has been closely linked to a wave of mergers and acquisitions, although the impact of the latter on the economies of the euro area has varied.

4. THE DEGREE OF THE CORPORATE BOND MARKET INTEGRATION

In analyzing corporate bond market integration, yield differentials relative to a benchmark cannot be used, as corporate bonds are generally not sufficiently homogeneous to allow for easy comparison. The yield of a corporate bond typically depends on a number of factors, such as bond's credit rating, time to maturity, liquidity and cash-flow structure.

Baele at al. (2004) studied the degree of integration of the corporate bond market under EMU, taking into account than corporate bonds differ in several key respects other than the country of issue(time-profile of the cash flow, likelihood of default, liquidity). They find that yields are mostly driven by common factors, while the effect of the country of issuance is extremely small. This suggests that the corporate bond market too has achieved a remarkable degree of integration. Euro-area corporate bonds have narrower bid-ask spreads than comparable sterling- and dollar-denominated bonds, even after the introduction of the TRACE system, which increased post-trade transparency in the US. This is due to the integration of the European corporate bond market since the advent of the euro, which allowed investors from all European countries to trade in the same market, thus attracting a large pool of professional intermediaries to compete in providing liquidity.

The European Central Bank proposed a set of financial integration measures, based on *the law of one price* (LOOP) and applied them to euro area bond markets. These measures focus on

corporate bond yields and investigate whether they still depend on the country in which a bond was issued. The results show that the state where a bond was issued only has marginal explanatory power in relation to a cross-section of corporate bond yields spreads, which suggests that the corporate bond markets of the countries that have been analyzed (Austria, France, Germany, Ireland, the Netherlands and Spain), are reasonably well integrated with each other.

Another indicator of the increasing financial integration of the various euro area bond markets is provided by *developments in the area of euro-denominated corporate bond underwriting by large international investment banks*, which often focus on internationally-traded securities.

Before the introduction of the common currency, firms wishing to issue bonds in a foreign market would usually have to select an investment bank with marketing and sales experience in the currency of the country concerned.

After the introduction of the euro, however, underwriting became a more competitive business and underwriting fees went down. The most important euro area underwriters are banks from the largest euro area economies, i.e. Germany and France, and from Spain and Netherlands. On the whole, the nationalities of underwriters and issuers are not necessarily linked. Despite the impetus from the introduction of the single currency, the overall level of most issuance in the euro area is lower than in most benchmark countries.

The extent to which integration in this market has progr*essed can also be assessed by measuring the relative importance of* country components versus common factors in explaining risk-adjusted yields. Ad integration advances, the proportion of the total yield spread variance explained by country effects should decrease. The respective indicator shows that the euro area corporate bond market is quite well integrated. Country effects explain only a very small constant proportion of the cross-sectional variance of corporate bond yields.

Also, *quantity-based indicators* point to an increasing degree of integration in the corporate bond market. For instance, holdings of long-term debt securities issued by euro area country governments and non-financial corporations held by residents of other (non-domestic) euro area countries have continued to increase in the previous eleven years, although there was a small decrease in the last observed period. Monetary financial institutions have strongly increased their cross-border holdings of debt securities since the end of 1990s, from about 10% to nearly 60per cent (De Hann, Oosterloo and Schoenmaker, 2009, p.123). In particular, the holdings of debt securities issued by non-financial corporations have increased markedly from a very low level, suggesting that investors are increasingly diversifying their portfolios across the euro area. The decline-starting in 2006-in the proportion of cross-border euro area holdings of government bonds reflects a substitution between government and corporate bonds in the portfolios of MFIs.

This in turn can be explained by MFIs diversifying their investments in search of higher yields in the fixed income market. This trend has come to a halt and begun to reverse since the start of the turmoil.

Euro area corporate bond market integration is clear from the minimal role of country effects in determining yield spreads. Moreover, effective bid-ask spreads in the euro area corporate bond markets are now actually lower than in the United States.

The integration of corporate bond markets greatly depends on the degree of *integration of the underlying infrastructure*, in particular of the securities settlement systems (SSSs) and central counterparties.

The European corporate bond markets convergence, which has depicted in the period towards the adoption of the common currency policy, has resulted in an *enhanced degree of financial integration*. These markets in the European Monetary Union have fully converged towards the introduction of the euro. However, the effect of convergence has not yet fully been explored on its determinants. It should not be taken as granted that the monetary unification, although being of crucial importance, is the unique deterministic factor of the corporate bond market integration process in Europe.

5. CONCLUSION

2. An important feature of a well-developed financial system is the existence of a mature and robust corporate bond market, which works alongside a sound banking system. The existence of such a market appears to be positive for economic development, as it allows corporations and banks to raise funds more quickly and more flexible terms than would otherwise be possible. The catalyzing influence of the euro on the deepening and broadening of the corporate bond markets in the euro area has added the diversification of corporate financing needs and led to greater economic benefits of having multiple avenues of corporate finance. Additional advantages seem possible, given the fact that bond financing by different types of corporate issuers are not in all euro area countries at levels that would have been expected from the size of their economies.

3. The developments in euro area corporate bond issuance can be explained by movements in economic activity, the costs of issuance and M&A-related activity. The latter reflects financing needs related to corporate restructuring, which in turn may be partly related to the introduction of the single currency. At the same time, the euro adoption has directly and permanently boosted the annual growth of debt securities issued by non-monetary financial corporations by around 4.5%. However, these developments are not uniform across euro area countries. In fact, the use of corporate bond markets by borrowers varies substantially from one country to the next, and markets

are gradually becoming more integrated. This suggests that there is further scope for integration in the euro area corporate bond market.

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