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Strengths and weaknesses of types of pension systems

The euro's impact on money and capital markets

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Paper presented to the Conference:

EMU Halfway through the Transition Period: Experiences and Perspectives

Organised by
The European Institute of Public Administration (EIPA), and
the European Centre for the Regions (EIPA-ECR)

Barcelona, 18-19 September 2000

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The euro's impact on the money market

At the start of the Third Stage of EMU, it was by no means clear whether the ECB would succeed in setting up an efficient framework for distributing liquidity throughout the euro-zone. Now in retrospect, however, the ECB appears to have been quite successful. In this paper, we will look at the major impact of the ECB's operational framework on the daily business of the euro area money market. We will also examine whether the ECB has in fact succeeded in creating a uniform monetary policy resulting in similar liquidity costs in all participating countries. And we will elaborate on the development of the various segments of the money market. In addition to trade volumes, we will focus on money market integration and the extent to which EMU has affected market efficiency compared with that of the predecessor markets. Finally, we will present a number of conclusions and identify factors that continue to hamper the optimal functioning of the market.

Impact of the ECB's operational framework on the money market

By definition, the start of the Third Stage of EMU had a significant impact on the money market's daily business. The shift in responsibility for monetary policy from the national central banks to the ECB had a clear impact given the banks' crucial role in the money market regarding the distribution of liquidity and determining the level of short-term interest rates. Let us elaborate further on the major changes brought about by the Eurosystems' operational framework[1].

Distribution of liquidity

The ECB has offered liquidity to credit institutions in the euro area based on general refinancing needs, with no bias towards any particular country. As a result, the liquidity allotted often does not exactly match the needs of a particular counterparty or a particular country. This means that liquidity must be redistributed in the secondary market. In the past 18 months, banks have effectively formed a two-tier structure in which larger institutions with a euro-wide presence handle the cross-border flow of liquidity and smaller institutions play a more restricted national role. This system mainly emerged as a result of historical bank relationships and credit risk considerations. At the time of the introduction of the euro, banks in each individual country had been doing business with each other for many years while the large banks in different countries were already frequently involved in mutual cross-border transactions. However, banks were generally not aware of the creditworthiness of the smaller banks in other countries. From this point of view, the emergence of a two-tier market is no surprise. But it is clear that this situation puts the largest banks at an advantage. While performing an important function in distributing liquidity, they are able to profit from arbitrage opportunities on days when liquidity imbalances cause (small) interest rate differentials between the EMU participant countries.

Participants in the main refinancing operations

A considerable downward trend has emerged in the number of bidders participating in the ECB main refinancing operations compared with the second half of 1998 when credit institutions still had to deal with their national central bank.

[1] It is beyond the scope of this paper to discuss the ECB's targets and its operational framework in detail. However, we have provided a brief description of these issues in Appendix 1, which may be useful in better understanding money market developments discussed later in this paper.

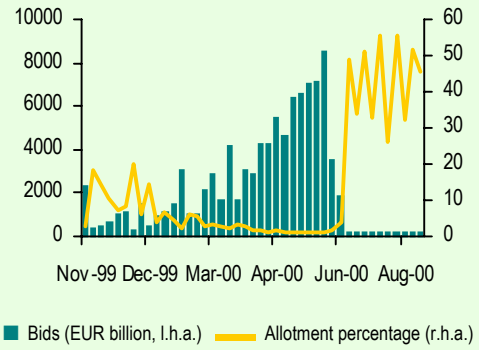
This has also increased the need to redistribute liquidity among the euro area market participants. It must be noted, however, that there is still a large number of participants in the main refinancing operations compared with the US. There are several potential explanations for the downward trend.

- Centralisation of cash management
- New infrastructure requirements discourage small and medium-sized banks to participate
- Mergers and acquisitions in the financial services industry: the number of monetary financial institutions in the euro-zone dropped by 5% between December 1998 and January 2000
- Uncertainty about amount of funds allotted to each participant in the euro system's fixed rate tender

Bidding behaviour

In the first 18 months of stage three of EMU, the ECB used weekly fixed rate tenders in its main refinancing operation[2]. This type of auction was vulnerable to overbidding. The demand for ECB funds by European banks structurally exceeded the amount of money the ECB was willing to allocate. The banking sector was abusing the fixed rate tender and the ECB was unable to stop this practice, which clearly did not work in favour of the ECB's reputation. The reason behind the overbidding was that banks could make easy profits. Those with sufficient collateral at their disposal sought to borrow cheaply from the ECB, as the refi rate paid on ECB funds is usually lower than overnight rates on the interbank market. Moreover, banks were aware that their competitors would also ask for more than they needed, thereby encouraging further overbidding.

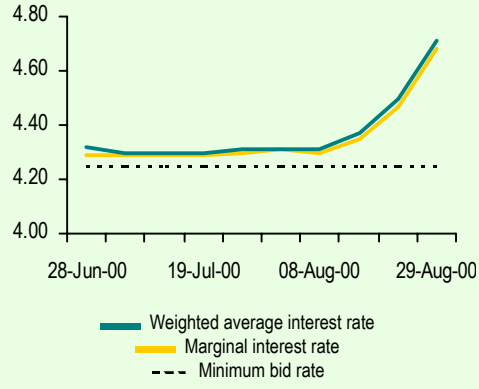
Overbidding in fixed rate tenders



Source: ECB

In order to solve the problem of overbidding, the ECB switched to a variable interest rate tender and a minimum bid rate at the end of June. These tenders allow banks to bid for both the amount and the rate. The advantage of an interest rate tender is that banks can seek the level of funds they like, provided they have sufficient collateral, but money will only be allocated to the highest bids. Under this type of system, banks would normally have less incentive to ask for more than they need, because higher demand will tend to drive up the refi rate. Indeed, as can be seen in the graph, the allotment ratios shot up after the introduction of the variable tender, indicating the ECB had succeeded in solving the problem of overbidding. Nonetheless, by using the variable tender system the ECB has lost full control over short-term interest rates and can only steer the direction of monetary policy by changing the minimum bid rate. For example, if market participants expect the ECB to hike rates in the near future, they will anticipate by bidding higher interest rates in the weekly tenders, thereby driving up both the marginal and weighted average refi rates (see graph).

Variable rate tenders



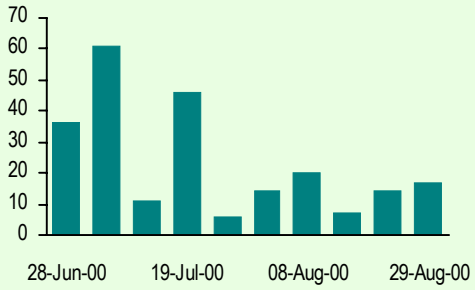
Source: ECB

Is there a single monetary policy in practice?

At the beginning of stage three, the ECB took over responsibility for monetary policy from the national central banks. The question of whether the ECB is indeed successful in conducting a single monetary policy can be answered by analysing two criteria. First of all, the price of liquidity provided by the central bank and the price of redistributing that liquidity on the secondary market should be identical. Secondly, the procedures used to implement monetary policy should be equal across the euro-zone area.

[2] The difference between fixed and variable rate tenders is explained in Appendix 1.

Difference between highest bid and marginal rate
Basispoints



Source: ECB

Pricing

The ECB conducted its main refinancing operations from January 1999 to June 2000 in the form of fixed-rate tenders. The price of central bank liquidity was therefore by definition identical for all euro-zone banks during that period. However, because the ECB switched to a variable rate tender at the end of June, banks now obtain liquidity from the central bank at different prices. A publicly available breakdown of the costs of liquidity in each euro-zone country is not available so it is unclear whether this new tender procedure has resulted in a single price for liquidity in each country. This also holds true for the long-term refinancing operations, which are also in the format of a variable rate auction. However, we have drawn some cautious conclusions based on information released by the ECB on interest rates offered in the bidding procedure. In the first weekly variable tender at the end of June, there was quite a large gap between the highest interest rate bid and the marginal rate at which funds were supplied. But the differential shrank considerably in subsequent tenders, indicating that the initial gap was due to the fact that banks were unfamiliar with the new tender system. Once they got their bearings, the gap narrowed. Consequently, it appears that the cost differential for central bank liquidity across the euro-zone will be minimal.

Even if this does not prove to be the case, there may be unity of monetary policy. If short-term interest rates were identical across the euro area, a uniform money market yield curve would create a homogeneous base for the monetary policy transmission process. Of course divergent credit ratings for banks in the various regions will always cause minor differences in cross-border interbank interest rates. In its May 1999 Monthly Bulletin, the ECB stated that data for the EONIA calculations supplied by Euribor banks in different member states showed very low dispersion. There is also little discrepancy in rates supplied by Euribor banks for calculating reference Euribor rates. However, the latter evidence should be viewed with caution given that it is based on declared rates instead of transaction rates.

Frequency of one-month spreads with German rates lower than 3 bp
Based on 147 daily observations (Jul 28, 1999 to Jan 28, 2000)

Austria	99.2%
Belgium	99.2%
Ireland	97.5%
Finland	93.3%
France	96.6%
Italy	99.2%
Luxembourg	94.1%
Netherlands	99.2%
Portugal	97.5%
Spain	95.0%

Source: Ciampolini and Rohde

Procedures

The second criterion in evaluating the effectiveness of the ECB's single monetary policy concerns its procedures for implementing monetary policy, which must be identical in all member states in order to conduct a uniform monetary policy. The most problematic issue in this respect concerns collateral in the weekly main refinancing operation. In order to receive central bank credit, banks must maintain a certain amount of collateral in case of defaults. The ECB and the national central banks have published lists of assets that qualify as eligible collateral, which are separated into tier 1 and tier 2 assets. This enables the ECB to pay attention to the different financial structures in place across the EMU. Tier 1 assets are high-quality marketable debt instruments, such as government bonds, fulfilling uniform euro area wide eligibility criteria specified by the ECB. Tier 2 consists of additional marketable and non-marketable assets, which are of particular importance to national financial markets and banking systems, and are subject to eligibility criteria established by the national central banks.

The latter category impedes uniformity as the list of tier 2 assets is different in each member state and some national central banks have been much stricter in setting up these lists than others[3]. In addition, countries with substantial levels of domestic collateral or credit institution bonds were in a more comfortable position

[3] For example, the Dutch banking sector did not obtain elegibility for a huge outstanding amount of triple-A WSW loans (private mortgage loans).

Recourse to standing facilities

EUR billions, period averages of daily positions

Maintenance period ending in:		Marginal lending facility	Deposit facility
1999	Feb	3.8	1.3
	Mar	0.4	1.4
	Apr	0.7	0.3
	May	0.8	0.4
	Jun	0.4	0.6
	Jul	0.4	0.5
	Aug	0.5	1.0
	Sep	0.2	0.7
	Oct	0.3	0.6
	Nov	0.3	0.4
	Dec	0.3	1.0
2000	Jan	1.9	0.5
	Feb	0.1	0.2
	Mar	0.2	0.3
	Apr	0.2	0.9
	May	0.4	2.3
	Jun	0.3	0.8
	Jul	0.4	0.5
	Average	0.6	0.8

Source: ECB

Turnover of unsecured transactions

Daily transactions average in EUR million

Maturity	Q2 99	Q4 98	% change
Overnight	61,197	42,927	+42.6
Tom next	9,062	8,794	+3.0
1 week	11,118	14,561	-23.6
2 weeks	1,883	1,826	+3.1
1 month	1,986	2,408	-17.5
3 months	1,984	3,197	-37.9
6 months	704	1,553	-54.7
9 months	189	552	-65.8
1 year	403	450	-10.4
>1 year	79	32	+146.9
Total	**88,605**	**76,300**	**+16.1**

Source: ESCB market survey

from the very start of EMU, while banks in certain less well-endowed countries appeared to be more constrained in early 1999 when bidding for central bank funds. The relative scarcity of securitised collateral is also partly due to differences in the maturity level of financial markets in individual euro-zone countries. The varying degrees of development in private security markets and legal frameworks for securitisation are examples of this. The differences appear to be fading, partly because more collateral has become available. In addition, substantial strides have been made in the cross-border use of collateral, which appears to have somewhat mitigated the problems associated with uneven distribution of collateral across the euro-zone.

The development of different segments of the euro money market

In examining developments in the most important segments of the euro-zone money market, we focused on three commonly distinguished markets: the market for unsecured deposits where credit institutions exchange short-term liquidity without the guarantee of collateral, the repo market in which market participants exchange short-term liquidity against collateral, and the foreign currency swap market[4]. In the following section, we will also look at the derivatives market and the markets for short-term securities. In addition to particular developments in these segments, we will pay attention to money market integration and efficiency, and how EMU has affected these factors compared with the predecessor market.

Unsecured credit market

According to the ESCB market survey, the market for unsecured deposits expanded by 16% between the last quarter of 1998 and the second quarter of 1999. However, certain maturities developed much more favourably than others. Overall growth in the unsecured market can mainly be attributed to the shortest maturities, particularly overnight transactions. In the longer maturities, turnover declined markedly while trading volumes were relatively low. The increase in turnover in the unsecured market as a whole was a direct result of the introduction of the single currency. As the ECB distributes liquidity in an unbiased manner based on general refinancing needs in the euro-zone, liquidity is redistributed on the interbank market (unsecured deposits). The redistribution of funds is also partly effected by cross-border transactions. As the unsecured market showed strong growth, its share in total money market turnover rose from 48% to 53%.

The unsecured segment of the money market has shown a high degree of integration. Triggered by the need to redistribute funds, liquidity circulates efficiently within the euro area. The significant increase in cross-border activity between euro area institutions after the fourth quarter of 1998 is a direct consequence of this development. Other evidence for market integration is the convergence of yields. On several occasions the ECB has pointed out that the dispersion across countries of overnight rates is also quite low. The same goes for the dispersion of the offered rates supplied by Euribor banks for the calculation of the reference Euribor rates.

[4] The figures were taken from ESCB market surveys. The data cover the last quarter of 1998 and the second quarter of 1999. Unfortunately, at the time of writing, there were no figures available for more recent periods. As the figures were taken from surveys, the results are only indicative of actual developments on the money market. All data include only transactions between credit institutions. Repo market data in particular do not include transactions with central banks.

Finally, recourse of banks to ECB standing facilities may provide an indication of the degree of integration and efficiency in the unsecured deposits market. Assuming perfect markets, recourse to these facilities should only take place at the end of the reserve maintenance period with only one of the facilities used. This would reflect an excess or shortage of liquidity due to ECB mistakes in estimating general liquidity needs in the euro-zone. If we abandon this assumption, standing facilities may either be used at other times during the maintenance period or the marginal lending facility and deposit facility may be used simultaneously. This would signal inefficiencies in the market in redistributing liquidity among banks. Average use of standing facilities during the maintenance period was generally low, and has fallen compared to the early stages of EMU[5]. Moreover, by the end of the maintenance period, only one of the two facilities is usually significantly used. This indicates an efficient and well-integrated market.

Repo market

In the period under review, turnover in the repo market increased by almost 24%. Contrary to the market for unsecured deposits, growth was not concentrated only in the shortest maturities. The relatively strong performance in the longer segments, as compared with unsecured transactions, is a result of the greater security provided by repo transactions. In addition to the introduction of the euro, the necessity of limiting credit exposure and reducing capital needs also attributed to favourable developments in the repo market. The share of repo transactions in the money market jumped from 20% to 24%.

Integration in the repo market has hardly improved since the introduction of the euro. Major factors commonly perceived to prevent full integration are difficulties in cross-border-settlement of collateral, various forms of legal uncertainty, different tax treatment of bonds, diverging prices of underlying bonds and their different degrees of liquidity and an uneven availability of collateral in the euro-zone. Some obstacles are technical and relatively easy to solve. Others relate to structural differences in national tax and legal systems. Achieving greater harmonisation across the euro-zone requires more far-reaching intervention, and hence a significant commitment by national authorities.

The prevailing hierarchy for general collateral rates is among the factors pointing to a low degree of integration. French and German securities were relatively expensive, whereas Belgian, Spanish and Italian securities were relatively cheap. Differences in the yields of the underlying bonds can mainly be attributed to different degrees of liquidity and the impact of specials trading, which is largely done in German and French bonds.

Swaps against foreign currencies

Contrary to the increasing trend in segments discussed above, turnover in foreign currency swaps declined by about 24%. Activity decreased in nearly all maturities. The most important reason for this development is the disappearance of cross-currency trade among EMU participants. Nonetheless, turnover in currency swaps still amounted to 23% of total market turnover (32% in the last quarter of 1998), which is substantial and comparable in size to the repo markets. A substantial share of currency swap transactions was cross-border.

Turnover currency swaps

Daily transactions average in EUR million

Maturity	Q2 99	Q4 98	% change
Overnight	9,718	9,654	+0.7
Tom next	15,383	18,944	-18.8
1 week	2,689	3,486	-22.9
2 weeks	2,316	2,301	+0.7
1 month	3,800	7,651	-50.3
3 months	3,010	5,079	-40.7
6 months	1,160	2,156	-46.2
9 months	568	1,350	-57.9
1 year	490	606	-19.1
>1 year	185	243	-23.9
Total	**39,319**	**51,470**	**-23.6**

Source: ESCB market survey

Turnover of repo transactions

Daily transactions average in EUR million

Maturity	Q2 99	Q4 98	% change
Overnight	10,727	8,123	+32.1
Tom next	11,916	9,289	+28.3
1 week	8,983	7,378	+21.8
2 weeks	2,665	3,045	-12.5
1 month	2,773	2,248	+23.4
3 months	1,776	1,244	+42.8
6 months	333	433	-23.1
9 months	109	148	-26.4
1 year	344	136	+152.9
>1 year	20	5	+300.0
Total	**39,646**	**32,049**	**+23.7**

Source: ESCB market survey

[5] At first glance, the average use of standing facilities may appear high. However, the foregone daily interest of individual banks is small as the opportunity costs (either the deposit or marginal lending rate minus overnight rates) amount to about 1% and the number of credit institutions represented by these figures is roughly 1,000.

Activity in the markets for short-term securities

EUR billion

	Amount outstanding		
	Q2 99	**Q4 98**	**% change**
Treasury bills	306.1	312.9	-2.2
CD	210.5	188.5	+11.7
CP	85.7	66.2	+29.5
	Gross new issuance		
	Q2 99	**Q4 98**	**% change**
Treasury bills	281.2	301.5	-6.7
CD	518.1	340.1	+52.3
CP	292.3	242.8	+20.4
	Total turnover		
	Q2 99	**Q4 98**	**% change**
Treasury bills	468.9	492.0	-4.7
CD	90.7	99.1	-8.5

Activity in the interest rate swap market

Average daily transactions (notional amount in EUR millions)

	Q2 99	**Q4 98**	**% change**
Maturity			
1 week	4,636	2,153	+115.3
2 weeks	4,397	1,952	+125.3
1 month	7,957	4,276	+86.1
3 months	7,906	4,588	+72.3
6 months	4,263	3,104	+37.3
9 months	1,858	763	+143.5
1 year	2,461	1,144	+115.1
> 1 year	7,002	5,602	+25.0
Total	**40,480**	**23,582**	**+71.7**

Source: ESCB market survey

Three-month money market bid-ask spreads

		1996	1997	1998	1999	2000*
Euro area	average	14.4	12.4	9.6	8.9	8.4
	stand dev	*3.0*	*3.5*	*1.8*	*3.1*	*3.1*
Germany	average	16.5	15.1	8.2	9.2	8.5
	stand dev	*6.3*	*7.6*	*2.9*	*4.1*	*3.1*
France	average	4.6	2.7	3.0	2.8	3.1
	stand dev	*4.6*	*2.7*	*3.0*	*2.8*	*3.1*
Italy	average	11.3	9.3	10.1	8.9	8.5
	stand dev	*2.3*	*2.4*	*2.8*	*2.6*	*3.1*
US	average	12.5	11.3	8.8	9.0	9.3
	stand dev	*2.9*	*5.3*	*4.0*	*2.9*	*2.8*
Japan	average	12.0	9.8	11.5	10.5	10.4
	stand dev	*2.0*	*3.8*	*3.6*	*5.9*	*1.1*

* Up to mid-April
Source: Standard & Poors's DRI

Money market derivatives and securities

Short-term derivatives market

According to the ESCB market survey, average daily interest rate swap transactions increased by 72% from Q4 1998 to Q2 1999. As the table illustrates, the strongest increases were in the longest and shortest maturities. The bulk of the transactions were cross-border.

Since the start of stage three of EMU, the integration, standardisation and depth of the short-term derivatives market have increased significantly. Its depth and liquidity increased notably as the market became totally unified. This is confirmed by the existence of a single swap yield curve for the whole euro-zone. Evidence for increased liquidity was reflected, for example, in the development of bid-ask spreads. Spreads narrowed compared to those prevailing in the markets before stage three of EMU and now amount to 1-2 basis points. In addition, the standard deal size increased to an average of EUR 50mn, and large individual deals (EUR 5bn) were not uncommon. The main reasons for the success of the euro swap market are the following:

- Swaps are used instead of government paper for hedging positions in fixed income instruments such as corporate paper.
- Arbitrage is widely performed on swaps
- High liquidity and debt has attracted more participants
- Increased interest for off-balance-sheet instruments

As for other derivatives, the euro futures market increased significantly in the period under review. For example, open positions on three-month euro futures contracts increased by 16%. This development came at the expense of over-the-counter transactions, except swaps. The euribor three-month futures market quickly became very deep and liquid as was partly reflected by tight bid-ask spreads. The Euribor became a single reference in the cash market, at the expense of the Euro Libor. The success of the euro money markets' futures contracts is due both to the standardisation of the euro wholesale markets and the harmonisation of the euro cash markets, with the Euribor as the main reference.

Short-term securities

The primary market for short-term securities (mainly Treasury Bills, CDs and CPs) gradually expanded in 1999. One of the most striking trends is the divergent pattern in issuing activity between private and public issuers. While supply of fresh short-term government paper was modest and declined in the course of the year, privately issued paper showed strong growth. The supply of CDs and CPs showed a particular increase. The public sector issuance was negatively influenced by the improvement of the fiscal positions of the euro area national governments, on the back of favourable cyclical developments, and the shift in public debt from short to long maturities in order to benefit from historically low long-term interest rates. In the private sector, stronger economic activity (increased spending in investment in fixed assets) and the trend towards financial desintermediation have fostered an increased issuance of private short-term securities. As a result of these different issuance patterns, the amount of outstanding Treasury Bills declined, while outstanding CDs and CPs showed a robust increase. In fact, privately issued securities overtook the short-term government paper market.

Integration in the short-term security market was generally slower than that of the market for unsecured deposits and remained relatively fragmented and domestically oriented. There are a number of explanations for this. Firstly, at the beginning of stage three of EMU, markets for short-term securities were underdeveloped or non-existent in some euro-zone countries. Secondly, there is less incentive for portfolio diversification as financial intermediaries do not hold short-term securities for investment purposes but rather as a substitute for cash. Money market funds are focused on the national market, so the number of cross-border transactions is small. Thirdly, there are considerable problems related to infrastructure, such as the lack of adequate settlement procedures for cross-border transactions, insufficient harmonisation of the settlement procedures used for domestic transactions and of the relevant legal frameworks.

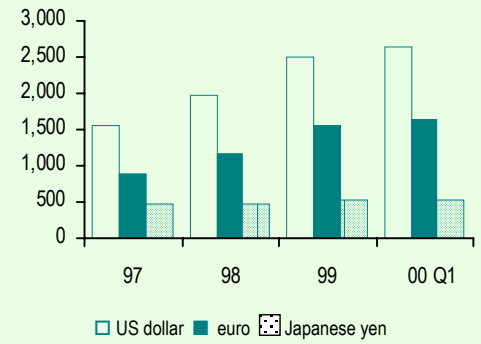
Conclusions

On the whole, the ECB has done a good job on liquidity management in the euro area. It has set up an efficiently working framework to distribute liquidity. In addition, the ECB is in practice succeeding in efforts to conduct a single monetary policy. This is reflected in the equal costs of liquidity throughout the euro-zone. Initially, there were a number of difficulties concerning collateral issues and the type of tender used in refinancing operations, but these problems appear to have been solved.

Stage three of EMU has created a single money market and improved liquidity and efficiency. But the degree of integration varies significantly across the different market segments. On the one hand, the unsecured market has quickly become deep and highly integrated. On the other hand, the repo market and the market for short-term securities remain fragmented and domestically oriented. Some factors hampering further integration and efficiency are technical, and hence relatively easy to overcome. However, others, such as differences in tax and legal systems are more deeply rooted. Progress in this area will depend on the actions of national authorities.

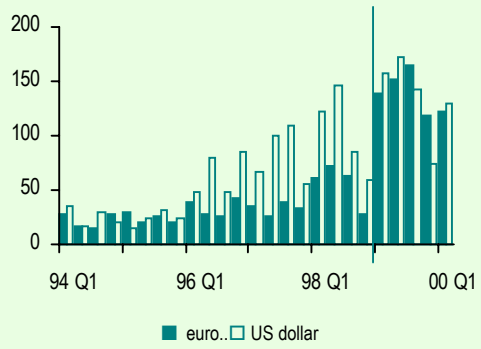
The euro's impact on capital markets

Amounts outstanding of international notes and bonds
1997-2000Q1 (USD bn)



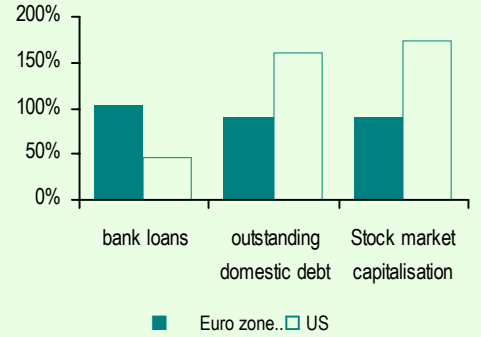
Source: BIS Quarterly Report June 2000, table 13

Net issuance of international bonds
1996-2000Q1(USD bn)



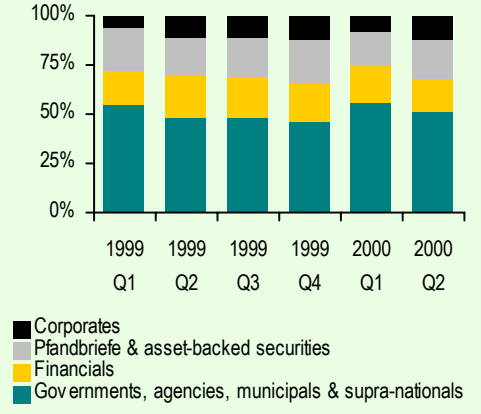
Source: BIS Quarterly Report June 2000, table 13

Financial structure in the euro zone and the US
% 1999 GDP



Source: OECD, Financial market trends, July 2000, p. 111

Market share
%



Source: European Commission, Quarterly note on the euro-denominated bond markets, June 2000

The launch of the euro has created the world's second largest market for bonds and has given a strong impulse to equity markets. Nonetheless, it would be unfair to attribute these developments solely to the introduction of the new currency. Other forces have also contributed, including the globalisation of financial markets, tighter BIS regulations, the spread of advanced technologies, deregulation and the Single Market Programme. But in many cases, the euro has functioned as a catalyst for change. In this article, we will characterise the nature of changes in the capital markets in the third phase of EMU and discuss their efficiency and integration, along with the impediments to further integration.

Characterising euro-zone capital markets

Although the US dollar market remained the largest bond market in 1999, net issuance of euro-denominated bonds took off in the first quarter, overtaking US dollar bonds by the third quarter. For the year as a whole, Euro-denominated issuance also exceeded that in US dollars and the entire market for euro-denominated bonds grew by 33%, against 28% for dollar-denominated bonds. In the same period, market capitalisation in equities markets increased by more than 50%, to EUR 5,512bn, owing to an increased appetite for equities and more company listings. These trends mean financing in the euro-zone has become more capital-market oriented, although the financing of corporates is still predominantly bank-oriented. The euro-zone economies' reliance on bank financing is more than 100% of GDP, compared with less than 50% of GDP in the US. The ratio of the total outstanding domestic stock of bonds and equity capital to bank loans is 1.7 in Europe, against 7.1 in the US.

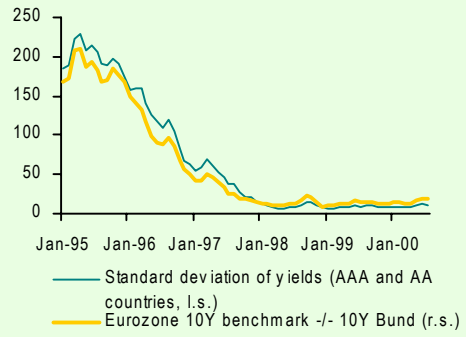
It is difficult to breakdown the bond market into issuer types due to differences in both (sampling) methods and definitions. Taking stock of all euro-denominated international bonds and auctioned domestic issues, total government plus agencies and supra-nationals clearly account for the largest slice of the pie (55% in 2000 H1). Asset-backed securities follow (19%), due to the success of German banks in securitising mortgage loans (Pfandbriefe). Financial institutions and banks rank third (18%). Where sovereign and 'financials' bond markets were already well-developed in the pre-euro era, corporate bond markets were in a fledgling stage. Currently, corporates account for 10% of gross issuance in the total euro-denominated bond market.

Sovereign bond market

During the second stage of the EMU, economic convergence went hand in hand with convergence of sovereign bond market yields. The convergence of the market is reflected in the dramatic fall in spreads of all maturities over German bunds, which was beneficial to both sovereign issuers and portfolio managers. The graph shows that the 10-year euro-benchmark spread over German bunds fell to about 9 basis points in the first half of 2000. In the same vein, the volatility in yields of 10-year government paper in the euro zone has declined substantially. Gross issuance of government bonds amounted to EUR 625bn in 1999 and EUR346bn in the first half of 2000, down 6.6% on the first half of 1999. The fall in gross issuance is mainly related to the reduced size of fiscal deficits and is a direct effect of EMU. Gross issuance is expected to fall further in the second half of this year owing to

Convergence of 10Y bond yields

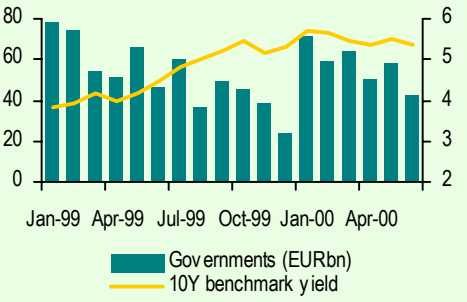
Basis points



Source: Datastream (Primark)

Gross issuance of government bonds

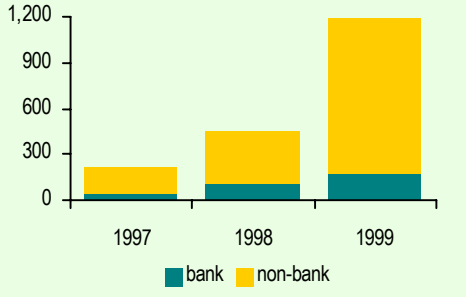
EUR bn



Source: European Commission, Quarterly note on the euro-denominated bond markets, June 2000

Mergers and Acquisitions

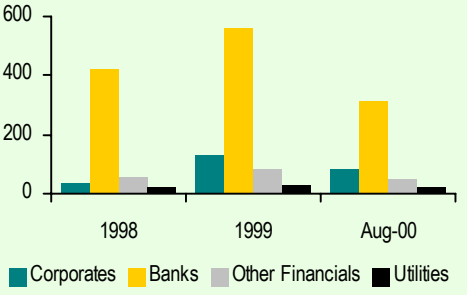
EUR bn



Source: OECD, Trends in financial merkets, July 2000, p.120

Euro-denominated private sector issuance

EUR bn



Source: Bondware / Capital Data, including all issues excluding government auctioned debt

substantial receipts from the UMTS auctions across Europe, which will largely be used to repay debt.

Reduced spreads and lower volatility are clear signs of a more efficiently operating sovereign bond market. However, given the narrow spreads between various sovereign issues, transaction costs may impede portfolio investors from further diversifying their sovereign bond portfolios. Instead, investors have adopted the strategy of a passive reallocation, through reinvesting coupons, redemptions and new cash flows. In addition, the absence of currency risk has encouraged investors to focus on such items as liquidity, security design and issuance policy.

The shift in focus among portfolio managers has evoked some important changes in the sovereign bonds market, which have boosted its efficiency. First, the minimum issue size has increased to EUR 5 bn, and this has become a requirement for inclusion in the Euro-MTS electronic system. The benchmark issues tend to be around EUR 10-15bn, double the size of former German issues. Sovereign issuers have also initiated policies that aim to standardise issues and increase their liquidity. Currently, German paper is the benchmark for bonds with a maturity up to two years and over ten years, while the mid-segment of the yield curve is obtained by French Treasury bonds. The liquidity of German sovereign bonds is reinforced by a well-developed bund futures market and, to a lesser extent, by French treasuries. Other governments have launched programmes to re-denominate their paper in accordance with benchmark issues to boost liquidity. Alternatively, governments are trying to carve out a niche market with innovative instruments, such as inflation-linked bonds. Governments are increasingly making use of primary dealers and pre-announced issue calendars to improve market transparency and reach a more diverse investor base.

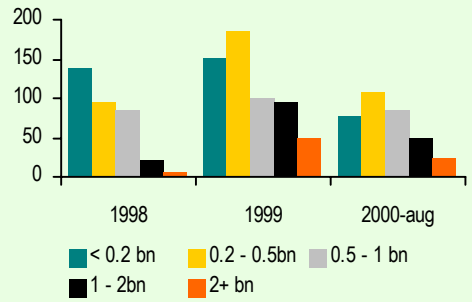
Further convergence of the sovereign market is unlikely unless governments give up their control over fiscal policy. However, at this juncture the time is not yet ripe yet for such a far-reaching measure. Relatively high transaction costs and differences in tax treatments have slowed the pace of geographical redistribution of sovereign bonds across the euro zone. Nonetheless, elevated transaction costs may be reduced by the increasing use of electronic trading systems.

Private sector bond market

The introduction of the euro has been a catalyst for corporate restructuring via mergers and acquisitions, mainly in the non-banking sector. The transaction value of M&A business soared from EUR 446bn in 1998 to EUR 1187bn in 1999. Corporates have increasingly relied on the capital market to finance their M&A plans, with Telecom companies among the most active issuers of debt. Also, tighter BIS regulations and an increased focus on shareholder value have encouraged banks to arrange and lead-manage issues and, where possible, securitise loans. The German banks' sales of mortgages-loans (Pfandbriefe) account for a large share of the private market and the French, Spanish and Luxembourg governments have launched similar initiatives.

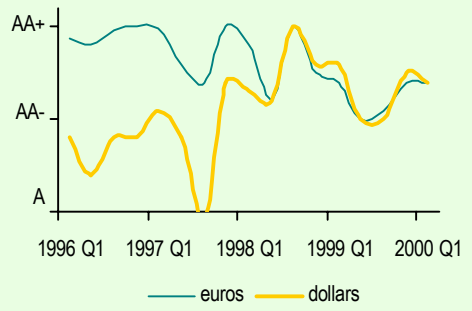
Although the private sector euro-denominated bond market represents only one fifth of the equivalent US market (EUR 750bn and EUR 3.500bn respectively), the launch of the euro has triggered a spectacular rise in the gross issuance of private sector bonds. The market for corporate bonds nearly tripled in 1999, while gross issuance by banks (31%), other financials (52%) and utilities (68%) also showed

Issue volumes private sector bonds
EUR bn



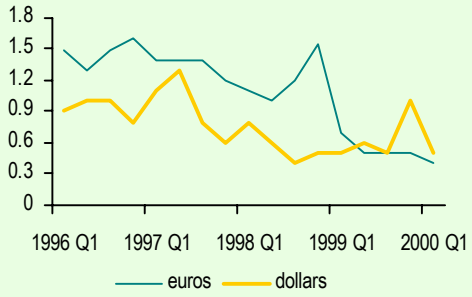
Source: Bondware / Capital Data

Average credit rating private issues
Weighted by issue size



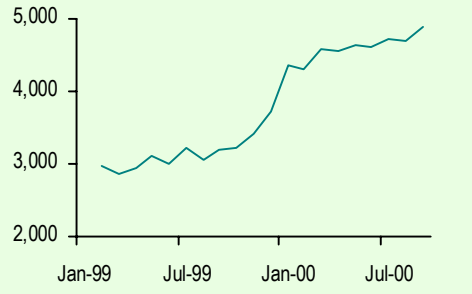
Source: BIS, Annual Report 1999, p.130

Gross fees on issuance
% of nominal amount



Source: BIS, Annual Report 1999, p.130

DJ Eurostoxx: market capitalisation
EUR bn



Source: Datasream

strong growth. The number of issues rose from 2,686 in 1998 to 3,260 in 1999 while the average issue size also increased from EUR 200mn in 1998 to EUR 400mn in 1999.In the first seven months of this year, total issuance of bonds by financials and corporates fell 8.6% year-on-year. This difference can be traced to the June 1999 jumbo telecom issue, but given the results of the UMTS auctions we are expecting a flurry of issues later this year.

By the beginning of 1999, most investors replaced their national benchmarks with European indices. The breadth of the market has also increased, as more companies started issuing bonds. This is reflected in the fall of the average credit rating of private issues from AA+ in 1998, to AA in Q12000, bringing average credit ratings more in line with those in the US. In addition, fierce competition among lead-managers has prompted a decline in gross fees to below common US standards.

Low yields on government bonds and reduced government financing needs have encouraged institutional investors to consider riskier credits. And because government paper is relatively less available, other jumbo issues, such as Pfandbriefe, have obtained a place in benchmark portfolios. So far, fear has kept fund managers from buying sub-investment grade paper on a massive scale. This is due both to the fact that institutional investors are not allowed to hold sub-investment grade paper and to the relative dearth of knowledge about managing sub-investment grade credit risk, particularly in a volatile market.

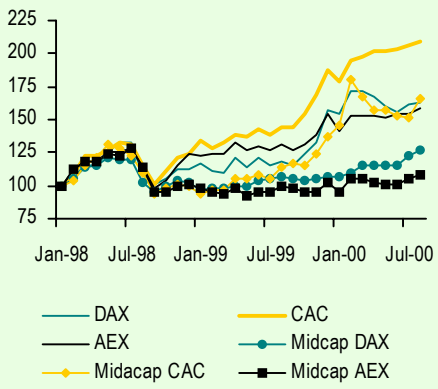
The integration of capital markets in Europe is far from complete and there are important impediments towards further integration. The cross-border trading of bonds is frustrated by the lack of a pan-European settlement system. But even if this system were in place, trading is hampered by legal and institutional differences. First of all, there is no uniformity in bankruptcy laws, which may scare investors away from unfamiliar markets. The same could also be said about differences in accounting practices and corporate governance that can create confusion among investors. In addition, divergent tax regulations usually give domestic securities an advantage over foreign securities, which discourages the cross-ownership of assets.

Equity market

Equity markets have strongly benefited from the third phase of EMU. Market capitalisation in euro-zone equity markets grew by no less than 52% to EUR 5,512bn between end 1998 and end 1999. The growth in equity markets is not due only to the outperformance of equity returns compared with bonds, but also to new share issuances and initial public offerings (IPOs). This has resulted in a spectacular rise in market capitalisation. In particular, new technology companies, which have less access to bond markets, made increasing use of equity capital. This is made clear by the relative success of the EURO.NM market, a pan-European group of regulated exchanges aiming to attract high-growth company listings.

Investors' calls for more efficient transaction and settlement systems have stepped up mergers among equity bourses across Europe. The exchanges in Amsterdam, Paris and Brussels have merged into Euronext. At the same time, the London Stock Exchange (LSE), the Frankfurter Börse and the Swedish OM Group are in a tough battle to form a new exchange. Such moves are the first steps towards a

Main and midcap indices 1998-2000
1998=100



Source: Bloomberg

global trading system for equities since talks were launched between the European bourses and their US and Asian counterparts.

The integration of equity markets has been thwarted by the fact that portfolio managers in larger countries could not always invest in equities in the smaller countries due to a lack of liquidity. Because investors in smaller countries had more opportunities to diversify their portfolios, equity indices in the larger euro-zone countries outperformed those in the smaller countries. In addition, the fact that the main equity market indices have outperformed midcap indices is partly due to pension funds' strategies to buy both liquid stocks and track the main benchmarks[6]. Furthermore, the same institutional and legal arguments apply as for private sector bonds.

The bottom line

The consolidation of the national capital markets into a single European capital market has yielded economies of scale. On the supply side, the euro has stimulated a growing number of issuers and, on average, larger volumes of issues, which have appealed to a larger investor base. In addition, fierce competition among issuers in the sovereign market has led to harmonisation of new issues and re-denomination of existing issues. In the private sector bond market, competition between issue co-ordinators has lead to an impressive fall in average fees and a decline in average credit ratings. The euro has boosted the equity markets and attracted a number of newcomers, mainly from high-growth IT-sector companies.

On the demand side, the elimination of the exchange rate risk has helped relax currency matching rule requirements imposed on many institutional investors for assets and liabilities. This has prompted a shift in the bias of national portfolio allocation in favour of assets from larger euro-zone members, and, to some extent, countries from outside the euro zone. Low yields on sovereign bonds and lower issuance volumes created by the Growth and Stability Pact have forced investors to consider investing in both lower-rated credits and equities to boost their portfolio performance. Demand for equities has been further reinforced by strong growth in the European pension market, high savings rates, and changing preferences among retail investors.

The obstacles to further integration of capital markets are both technical and institutional. Technical impediments, including differences in trading and settlement systems, will gradually disappear through the emergence of new trading and settlement systems, or further consolidation among the most important exchanges. Institutional differences, such as bankruptcy laws, financial accounting, corporate governance and tax treatment, will prove to be more difficult to overcome. These issues are bundled in the European Commission's Financial Services Action Plan, which is due to be finalised by 2005.

[6] It can be maintained that larger companies outperformed the midcaps, but since P/E for larger companies are much higher than for midcaps, this argument can also be downplayed.

Appendix 1

ECB monetary policy: strategy and objectives

The ECB's primary objective is to maintain price stability, which is defined as an annual increase in consumer price inflation of less than 2%. To achieve this goal, the ECB is pursuing a two-pillar strategy. The first pillar assigns a prominent role to money, reflecting the fundamentally monetary origins of inflation over the medium to longer term. The reference value for money supply growth is currently 4½%. This value has been derived so as to be consistent with, and serve the maintenance of, price stability in a manner that sustained and/or prolonged deviations of the increase of the monetary aggregate from the reference value that normally signals risks to price stability. While inflation is a monetary phenomenon over the medium term, for shorter periods it will be influenced by other variables. The second pillar is therefore associated with a more eclectic view of the world. This pillar consists of a broadly based assessment taking on board both the outlook regarding price developments and the risks to price stability in the region as a whole. In this case the inflation forecast, which is also used as an intermediate target, serves as the main reference point. A wide range of indicators are used to assess the inflation outlook such as the output gap, wage growth, exchange rates, asset prices and surveys of inflation expectations.

The monetary operational framework of the ECB

An important element of the ECB's operational framework is the minimum reserve requirement. Under this system the central bank requires credit institutions to hold, on average over a one month period, a share of their liabilities at a reserve account with their national central bank. The amount of the reserve is significant, in the order of EUR 100-110 billion. This creates a structural liquidity shortage and forces credit institutions to borrow funds (back) from the central bank to meet their liquidity needs. By setting limits on the amount of funds it lends to the banks, or by changing the official rates at which the credit institutions can borrow money, the central bank is able to steer money market rates. The ECB pays interest over the balances equal to the average refi rate during the period the reserves are held. This ensures that euro-based institutions do not suffer a competitive disadvantage compared with UK-based banks (the Bank of England does not impose a reserve ratio). The reserves provide a buffer against unexpected liquidity shocks, mitigating related fluctuations in market rates. However, the stabilising effect of the averaging provision becomes weaker and eventually vanishes towards the end of the reserve maintenance period, when banks are no longer in a position to defer fulfilment of their reserve requirements.

The ECB has at its disposal a number of instruments to manage the liquidity situation and to refinance the credit institutions, the most important of which are the main refinancing operations[7]. A refinancing transaction involves the national central banks (NCBs) or the ECB buying or selling eligible assets under

[7] In addition to the weekly tenders, there is a monthly tender set with a three-month term to provide the banking system with longer-term liquidity. The ECB only uses this instrument for a limited potion of the refinancing volume and does not intend to use it to signal monetary policy intentions to the market. The ECB therefore conducts the monthly auctions as variable rate tenders with pre-announced intended allotment volumes. Further potential open market instruments are outright transactions, the issuance of debt certificates, foreign exchange swaps and the collection of fixed-term deposits. These instruments can be used for fine-tuning and structural operations.

repurchase agreements or conducting credit operations using eligible assets as collateral. On Tuesday mornings, there is a weekly refi tender for money market funds with a two-week term. The bids are taken by the NCBs, centralised at the ECB, and allocated for the entire euro-zone money market (with no bias towards any country). The rate at which banks can borrow these funds (the refi rate) is fixed if the central bank specifies the interest rate in advance and participating banks bid for the amount of money they want to transact at the fixed rate. Alternatively, the rate may be 'variable', in the sense that banks bid both the amount of money they want to transact with the central bank and the interest rate at which they want to enter into the transaction.

Standing facilities aim at providing and absorbing overnight liquidity, thereby imposing limits on overnight market interest rates and signalling the general stance of monetary policy. The marginal lending facility allows banks to obtain overnight liquidity from the NCBs at a pre-specified rate (above the repo rate) against eligible assets. This facility is intended to satisfy banks' temporary liquidity needs. This rate provides a ceiling for short-term rates. The deposit facility will allow banks to make overnight deposits with the NCBs at a pre-specified rate below the repo rate. Under normal circumstances, this rate will provide a floor for short-term rates. The band between these two rates has so far amounted to 200 basis points.

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