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THE COLLATERAL FRAMEWORK OF THE EUROSYSTEM: SOME EVIDENCE IN THE FIRST MONTHS OF THE EUROPEAN MONETARY UNION

THE COLLATERAL FRAMEWORK OF THE EUROSYSTEM: SOME EVIDENCE IN THE FIRST MONTHS OF THE EUROPEAN MONETARY UNION[1]

1. Introduction

The Eurosystem has a keen interest in the development of integrated financial markets. Fully developed and integrated money and capital markets enable the efficient achievement of the primary objective of the Eurosystem, namely the maintenance of price stability. They do so by ensuring that monetary policy impulses are transmitted in a smooth and homogenous way through the whole euro area. The collateral framework of the Eurosystem interacts with financial markets inasmuch as counterparties require collateral with certain characteristics to collateralise their monetary policy and intradaycredit operations.

Sixteen months after the start of Monetary Union, a number of assessments on the integration process in the euro area financial markets have appeared. However, relatively few documents have discussed this issue and little, if any, literature has been published on the Eurosystem collateral framework. This paper wishes to contribute some evidence on the collateral framework. Available information on eligible assets and the type of assets actually put forward by counterparties in their transactions with the Eurosystem are presented. The analysis is preceded by a presentation of the principles on which the collateral framework is built on, with the aim of clarifying some of the policy aspects which guided the development of the collateral framework when preparing for Monetary Union. The paper concludes by pointing to the challenges that lie ahead in the developments of the collateral policy in the medium term.

2. The Eurosystem's collateral framework

2.1 Broad principles of the collateral framework

In order to secure a single stance of monetary policy across the whole euro area, common eligibility criteria for collateral eligible for Eurosystem credit operations were developed. The harmonisation of these eligibility criteria throughout the euro area was aimed at encouraging the integration of financial markets, and enhancing equal treatment and operational efficiency

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in the euro area. At the same time, due regard was paid to the existing differences in central bank practices and financial structures across the EU Member States and to the need of the ECB to use a wide range of collateral. In designing the eligibility criteria valid for Stage Three, account was taken of some broad principles stated in the Treaty of Maastricht:

- Protection from losses: according to Art. 18.1 of the Statute of the Eurosystem and of the ECB, credit should be based on “adequate collateral” in order to ensure protection of the Eurosystem from losses in the conduct of credit operations;
- No privileged access by public institutions: according to Art. 102(ex 104a) of the Treaty on European Union, the privileged access by public institutions to financial institutions is prohibited; accordingly, no discrimination should be made in the collateral framework between public and private issuers;
- Free competition and efficient allocation of resources: Art. 105.1 of the Treaty on European Union requires that the Eurosystem acts in accordance with the principles of an open market economy with free competition, favouring an efficient allocation of resources, implying, inter alia, that a level playing field should be achieved and equal treatment of issuers and counterparties should be ensured.

Following the provisions of the Treaty, and on the basis of the experience gained by national central banks, the European Monetary Institute adopted some general principles and practical guidelines for establishing the operational framework of the single monetary policy, which included the selection of the collateral to be used for credit operations of the Eurosystem. These can be briefly recalled:[2]

- Operational efficiency: the procedures for handling and settling all debt instruments used in credit operations should ensure speedy and reliable transactions, thereby avoiding hampering the operational efficiency of the single monetary policy. Furthermore, sufficient collateral with the desired characteristics should be available to the Eurosystem’s counteparties in order to allow the Eurosystem to supply the required amount of liquidity in the system, also for payment system purposes.
- Equal treatment: in order to avoid segmentation of financial markets and discrimination of counterparties and issuers according to the location of assets, it was required that all

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[2] These principles were spelled out at the time that the initial specification of the operational framework was made public, to enable potential counterparts to plan preparations for Monetary Union in 1999; see chapter 2 of the document published by the European Monetary Institute entitled “The single monetary policy in Stage Three: specification of the operational framework”, dated January 1997.

counterparties have access to all eligible assets, and that satisfactory procedures for accessing collateral in all countries i.e. for cross-border use, should be available.

- Simplicity, transparency and cost efficiency: these principles aim at ensuring that collateral framework does not hinder the implementation of Eurosystem policies and contributes towards operational efficiency, equal treatment and conformity with market principles;
- Continuity: this principle was deemed necessary inasmuch as the transition to Stage Three of Monetary Union would be facilitated if the operational framework relied to the extent possible on already existing instruments rather than requiring lengthy or costly new developments; however, since it was believed that financial instruments, structures and infrastructures would tend to converge in Stage Three, it was deemed that the principle of continuity with practices and instruments prevalent in Stage Two would become less important over time and its application might be reviewed.

Based on the overall set of principles spelled out above, a set of common eligibility criteria for assets to be used for credit operations in the euro area was developed. Preparatory work mainly focused on the fact that significant differences among Member States existed in Stage Two regarding eligibility criteria for assets and the application of risk control measures. In some countries, the range of eligible paper was in practice restricted to public debt and central bank instruments only. In most countries, however, central banks accepted a broader range of marketable assets, including high quality securities issued by banks and corporates, equities and, in a few cases, also assets denominated in foreign currencies. Differences also existed in the eligibility of the assets in relation to the type of operation being conducted. Some central banks were constrained by their Statute or by the Law in the choice of their assets, while other central banks had full discretion on which assets they could accept as collateral.

On the background of this situation, it was accepted that a full harmonisation of practices related to collateral for monetary policy and intraday credit operations was neither possible for the start of Monetary Union nor necessary for the efficient conduct of a single monetary policy. It was not possible due to the fact that a fully harmonised collateral framework was seen as requiring significant changes in the eligibility criteria in some Member States.[3] It was deemed that implementing the required changes in procedures and infrastructures would be costly and time-consuming, and could hinder operational efficiency in the short run (since financial structures and central bank practices differed considerably between Member States). There was also a risk that if harmonisation entailed narrowing the range of eligible assets in

[3] This problem was made more acute by the fact that the actual list of countries participating in Monetary Union would have been known only very late during Stage Two.

some countries, a potential risk existed of not having a sufficient amount of eligible assets available for counterparties in those countries in the initial phases of Stage Three.

Full harmonisation was not deemed necessary for the start of Monetary Union. In order to avoid disrupting consolidated practices and imposing substantial changes in the financial structures of each country, it was accepted that those national central banks requiring it, would establish "national" lists of assets, of particular importance for the national markets and banking systems in some countries, and would be responsible for defining the eligibility criteria and the risk control measures. These specific proposals for tier two assets would be subject to approval by the ECB.

2.2 The eligibility criteria of Eurosystem assets

Taking into account differences existing at the start of Monetary Union in national financial structures and in central bank practices, a two-tier system was envisaged. *Tier one* consists of marketable assets which fulfil euro area wide eligibility criteria specified by the ECB. *Tier two* comprises (marketable and non-marketable) assets which are of particular importance to the national financial markets and banking systems and whose eligibility criteria are established by national central banks, in accordance with ECB guidelines and subject to its approval. Both tiers of assets are eligible on a euro area-wide basis.[4] [5]

With a view to promoting the efficient use of eligible assets, it was decided that the eligibility criteria for assets for payment system purposes would be the same as the criteria for monetary policy operations. This was expected to simplify operational procedures for counterparties, for the Eurosystem and for central securities depositories; in addition, it was expected to alleviate operational procedures in case that intraday credit needed to be extended overnight. Indeed, adopting the same set of eligible assets both for payment system and for monetary policy operations was also made possible by the fact that sufficient collateral for both needs and satisfying the eligibility requirements of the Eurosystem appeared to be available at the start of Stage Three, as well as by the fact that payment system requirements in terms of

[4] A specific and detailed description of the eligibility criteria can be found in chapter 6 of the document entitled "The single monetary policy in Stage Three – General documentation on ESCB monetary policy instruments and procedures" dated September 1998.

[5] For payment system purposes only, in addition to the two tiers of assets eligible for monetary policy operations, it was decided that the ECB could authorise national central banks to grant intra-day credit against debt instruments which are considered eligible for intra-day credit by non-participating EU central banks and which are: 1) located in EEA countries outside the euro area; 2) issued by entities established in EEA countries outside the euro area; 3) denominated in currencies (EEA currencies or other widely traded currencies) other than the euro. Within the euro area, these debt instruments may not be used on a cross-border basis (i.e. counterparties may use these debt instruments only for receiving funds directly from the national central bank which has been authorised by the ECB to grant intra-day credit against these assets).

quality of the assets and for risk control measures did not differ extensively from monetary policy requirements.

Table 2.1: Eligible assets for Eurosystem monetary policy operations

Criteria	Tier one	Tier two
Type of asset	• *ECB debt certificates;* • *Marketable debt instruments.*	• *Marketable debt instruments;* • *Non-marketable debt instruments;* • *Equities traded on a regulated market.*
Settlement procedures	• *Instruments must be centrally deposited in book-entry form with national central banks or a CSD fulfilling the ECB's minimum standards.*	• *Assets must be easily accessible to the national central bank which has included them in its tier two list.*
Type of issuer	• *ESCB;* • *Public sector;* • *Private sector;* • *International and supra-national institutions.*	• *Public sector;* • *Private sector*
Credit standard	• *The issuer (guarantor) must be deemed financially sound by the ECB.*	• *The issuer/debtor (guarantor) must be deemed financially sound by the national central bank which has included the asset in its tier two list.*
Place of establishment of the issuer (or guarantor)	• *EEA.* [a)]	• *Euro area*
Location of asset	• *Euro area.*	• *Euro area.*
Currency	• *Euro.*	• *Euro.*
Memo item: **Cross-border use**	• *Yes*	• *Yes*

Note a): The requirement that the issuing entity must be established in the EEA does not apply to international and supra-national institutions.

In order to avoid segmentation of EU financial markets and to minimise distortions stemming from the introduction of national tier two lists,[6] provisions were established to enable eligible debt instruments of both tiers to be used in a cross-border context. This was in line with the principle of equal treatment of counterparties, as it established a "level playing field" with respect to the use of Eurosystem eligible debt instruments. A mechanism named "correspondent central bank model" (CCBM) were developed by the Eurosystem to ensure cross border use of collateral, including some specific measures for non-marketable tier two assets.

After having defined the eligibility criteria for collateral for credit operations, the European Monetary Institute then defined procedures for managing in a centralised way the lists of assets eligible across the euro area. The collateral management procedures foresaw that data would be collected with a weekly frequency from national central banks, and would be made

[6] During preparatory work, there was awareness that using tier-two instruments in Stage Three might give rise to distortions, since it would confer the benefit of eligibility on a specific set of issuers in those countries where the relevant debt instruments existed. However, it was deemed that giving all counterparties the possibility to use these assets on a cross border basis would have ensured equal treatment and a level playing field across the euro area.

accessible to all interested parties. In the light of the high update frequency and of the potentially very high number of recipients of the lists, it was decided that the most efficient method to ensure wide circulation would be to publish the list on the Internet. The solution, which appeared innovative at the time it was conceived, has withstood the test of time and has proved to be effective.[7]

Although the main objective of setting up these lists was to provide the necessary clarity and transparency of information on eligible collateral to potential counterparties, the information collected on these assets lends itself to some analysis of the collateral framework, which is presented in the following sections.

3. Developments in outstanding assets

In order to better understand the relationship between eligible assets and financial markets, it was deemed useful to collect data on outstanding assets in the euro area and to describe the main developments that took place in the financial markets affecting outstanding assets since the inception of Monetary Union.

Table 3.1 presents some data on the total amount of securities outstanding in the euro area. In order to allow for comparison with eligible assets, data on outstanding assets were aggregated into three asset classes (government, credit institution and corporates). In the first fourteen months of Monetary Union the total outstanding amount of bonds issued in euro increased from EUR 5.9 trillion to almost EUR 6.5 trillion. A significant event in the period under review was the rapid growth in issuance in the private fixed income market. Issuance in this segment overtook issuance of central government securities, traditionally the biggest segment in European markets. The absolute level of government securities increased modestly and the relative share decreased from 58.2% to 56.1%. Although government paper still represents the greater part of total outstanding debt instruments, the share of outstanding securities issued by the private sector continued to increase.

Credit institutions were the largest private issuers of debt securities, and issued substantially more than corporates. Euro-denominated issues by non-residents in the euro area increased moderately and the total outstanding amount is relatively small. The credit institution share of total outstanding increased from 36.6% to 37.8%, and the share of corporates from 5.2% to 6.0%. While, previous to Monetary Union, bond underwriting had been mainly on a domestic level, as from 1999 bond issuing for the larger issues took on a truly euro area dimension.

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[7] The ECB's website address is www.ecb.int. Links to the national central banks' websites can be found in the ECB website.

Furthermore, in 1999 an increasing part of total issuance came from companies with a lower credit rating, which made direct recourse to the markets to finance themselves, rather than resorting to bank credit.

Table 3.1: Outstanding amount of Euro-denominated securities

	Total	% of total outstanding		
1999	EUR millions	General Govt	Credit Institution	Corporate
Jan	5,973,400	58.2%	36.6%	5.2%
Feb	6,015,700	58.1%	36.6%	5.3%
Mar	6,048,300	58.1%	36.5%	5.4%
Apr	6,109,600	57.6%	36.6%	5.8%
May	6,151,100	57.6%	36.7%	5.7%
Jun	6,177,800	57.5%	36.8%	5.7%
Jul	6,260,500	57.1%	36.8%	6.1%
Aug	6,285,000	57.1%	36.8%	6.0%
Sep	6,339,000	56.8%	37.2%	6.0%
Oct	6,413,900	56.4%	37.4%	6.2%
Nov	6,446,100	56.1%	37.7%	6.2%
Dec	6,415,100	56.0%	37.8%	6.2%
Jan-00	6,412,100	56.2%	37.7%	6.1%
Feb	6,471,600	56.1%	37.8%	6.0%

Source: ECB Bulletin. Total outstanding includes Eurosystem data on debt instrument issues (not equities) in euro by euro area residents and BIS data on issues in euro by non residents in the euro-area. Data coverage for euro area residents is estimated at around 95% of total issues. Data on non-monetary financial corporations are not included. Data on international organisations are included in the column general government which covers also state and local governments.

While a reduction in government securities had been anticipated and was in line with the trend towards lower financing needs, in accordance with the provisions of the Treaty and the "Stability Pact", the size and the speed of growth of the private securities market, particularly in the long term segment, were largely unexpected. Although the financial market turmoil in the last two quarters of 1998 may have played a role in the postponement of new issuance programs to the first half of 1999, and also taking into account the catalyst factor that the introduction of the euro may have exerted in spurring new issuance at the start of Monetary Union, these factors do not seem to be the only ones having characterised the strong growth in the private securities markets.

One of the factors frequently quoted as having generated increased financing needs and the connected strong issuance of securities was the large amount of mergers and acquisitions, some of unprecedented size, generated by an intensive process of consolidation and restructuring in the European banking and corporate sector after the introduction of the single currency. These operations were financed also through big euro-denominated securities issues. The banking sector also encouraged corporate issuance, since stronger competition in the European financial sector and regulation on bank capital put banks under pressure to use their balance sheet more efficiently. Owing to their needs, banks tried to reduce their involvement in lending and increasingly facilitated direct access by corporations to the capital markets, organising their bond issues and taking care of bond placement on the market. In addition, corporations, particularly those with a higher credit rating, also increasingly explored the opportunities of direct financing, incentivated in this by the fact that they could achieve better funding conditions than those practised by banking counterparties, some of which could have lower credit ratings than large corporates.

Another factor frequently mentioned as having given support to the increased supply of private issuance was the changed behaviour on the demand side. In an environment of low interest rates, in which the possibility of diversifying risk across different markets and achieving higher returns through currency diversification was no longer available, institutional investors started to shift towards higher risk securities in order to obtain higher returns.

A further element that could explain the high issuance recorded is the fact that the direct access to the markets by the private sector in the euro area is still historically much lower than that of counterparties operating in more developed financial markets, for example the US. Since the introduction of the single currency enabled to overcome market fragmentation by creating a broader market for debt offerings and a more competitive source of finance than traditional bank borrowing, the trend in increased issuance may be expected to continue into the near future.

Despite the significant growth observed in the euro area bond market during 1999, it must be noted that some market segments remain comparatively underdeveloped, particularly those for lower rated and non-rated debt. Relatively few euro area corporations have a credit rating, and this is also a factor currently restricting the access to the fixed income market.

4. Eligible assets in the Eurosystem

4.1 A taxonomy of eligible collateral

Collateral eligible for Eurosystem credit operations encompasses a very broad spectrum of assets denominated in euro, issued by entities established in the EEA area[8] as well as by international and supra-national institutions. Data on the total amount of eligible assets was calculated and classified by tier and asset class (government, credit institution and corporates). In tier one, an important distinction can be made between general government securities on one hand and other types of assets on the other hand. General government bonds include assets issued by central, regional and local government. The former securities typically have a high outstanding amount, big issue size and turnover and low trading spreads. They have the highest outstanding amount and are the primary source of eligible collateral in almost all euro area countries but Germany, where mortgage backed bonds and uncovered bank bonds issued by German credit institutions are the biggest outstanding asset class. Individual regional and local securities in the different countries display differing degrees of liquidity, but are in general less liquid than government bonds.

Private securities include mortgage bonds, uncovered banks bonds, and bonds and paper issued by corporates. In the category of mortgage bonds, a segment which experienced sizeable growth is that of Pfandbriefe and of assimilated products. Historically stemming from German and Austrian markets, where substantial amounts are presently outstanding, assets similar to Pfandbriefe have been introduced or have witnessed increased issuance recently also in other countries of the euro area. In the case of France, legislation was introduced in 1999 for new-style “Obligation Foncieres”, while in Spain sizeable amounts of “Cedulas Hypotecarias” were issued in recent times, even though the legislation introducing these instruments dates back to some twenty years ago. In December 1999 a law enabling the issue of Pfandbriefe-style products was enacted also in Finland.

As for uncovered bank bonds, outstanding amounts are significant in some countries, but the average daily turnover is generally low compared to government bonds or to Pfandbriefe products. For corporate bonds the issue size is moderate in many euro area countries and the data available shows that the turnover is substantially lower than for government bonds.

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[8] Issuers need to be established in the EEA only for tier one assets. For tier two assets, the issuers have to be established in the euro area. A specific and detailed description of the eligibility criteria can be found in chapter 6 of the document entitled “The single monetary policy in Stage Three – General documentation on ESCB monetary policy instruments and procedures” dated September 1998.

National central banks have included marketable debt securities and, equities in their national tier two lists.[9] Assets included in tier two range from bank bonds to corporate commercial paper, to medium term notes, to regional government bonds, and to equities. Except for this last category, the liquidity and the market depth of these assets is generally lower compared to the corresponding tier one assets. Many of these assets are not listed or traded on a regulated market but rather over-the-counter. As for equities, the three national central banks that have included such assets in their tier two lists have restricted eligible equities to the most liquid shares of non-financial companies listed on the national Stock Exchanges.

4.2 Trends in the development of eligible assets

Table 4.1 Eligible assets by tier **(EUR million)**

1999	Eligible Assets Total	Tier 1 as % of total	Mkt Tier 2 as % of total
Jan	5,514,925	91.7%	8.3%
Feb	5,562,641	91.6%	8.4%
Mar	5,614,544	91.7%	8.3%
Apr	5,705,420	91.5%	8.5%
May	5,754,642	91.6%	8.4%
Jun	5,785,417	91.5%	8.5%
Jul	5,859,757	91.7%	8.3%
Aug	5,929,649	91.7%	8.3%
Sep	6,002,525	92.0%	8.0%
Oct	6,053,230	91.7%	8.3%
Nov	6,075,974	91.3%	8.7%
Dec	6,156,202	90.7%	9.3%
Jan-00	6,095,769	91.3%	8.7%
Feb	6,177,719	90.8%	9.2%
Mar	6,286,876	90.8%	9.2%

Source: Eurosystem. Data calculated using nominal amounts except for equities, computed at market prices using Bloomberg monthly historical prices. The figure for total eligible collateral slightly overestimates the effectively available collateral, as some central banks supply figures for the total issuance programmes for securities issued by credit institutions. No statistics for total eligible non-marketable collateral available.

Available data during the period from January 1999 to March 2000 show that the total amount of eligible assets increased by over 14%, from EUR 5.5 trillion to almost EUR 6.3 trillion.[10]

[9] A number of national central banks have put non-marketable debt instruments on their tier two lists, including bank loans; trade bills; private loans and mortgage backed instruments. The total amount of eligible assets for these categories is not available.
[10] As mentioned in footnote 5, for payment system purposes only, in addition to the two tiers of assets eligible for monetary policy operations, it was decided that the ECB could authorise national central banks to grant intra-day credit against debt instruments which are considered eligible for intra-day credit by non-participating EU central

(Table 4.1). The subdivision between tier one and tier two remained relatively stable during this period, with tier one representing the bulk of eligible assets (90.8% in March 2000, down 1% from January 1999) and marketable tier two increasing only very slightly and reaching 9.2% of total eligible assets in the same period.

Table 4.2 shows that the greatest part of tier one (about 96%) is composed of government paper and of credit institution bonds, whereas corporate securities, among them equities, represent the larger part of marketable tier two. The relative stability in the composition of eligible assets conceals the fact that a change in the composition of assets took place. The weight of government issues[11] decreased substantially in the fifteen months under review, from 60.1% at the beginning of Monetary Union to 56.2% at the end of March 2000.

Table 4.2 Eligible assets by issuer (as % of total)

	Total	Tier 1			Tier 2		
	EUR millions	Gen Govt	Credit Instit	Corporate	Gen Govt	Credit Instit	Corporate
Jan-99	5,514,925	60.1%	27.9%	3.1%	0.1%	1.2%	7.0%
Feb	5,562,641	60.0%	28.0%	3.1%	0.1%	1.2%	7.1%
Mar	5,614,544	59.8%	27.9%	3.4%	0.1%	1.2%	7.0%
Apr	5,705,420	59.4%	28.3%	3.3%	0.1%	1.1%	7.3%
May	5,754,642	58.9%	28.9%	3.3%	0.1%	1.2%	7.1%
Jun	5,785,417	58.7%	29.0%	3.3%	0.1%	1.2%	7.2%
Jul	5,859,757	58.6%	29.2%	3.4%	0.1%	1.2%	7.0%
Aug	5,929,649	58.4%	29.2%	3.5%	0.1%	1.1%	7.1%
Sep	6,002,525	58.0%	29.8%	3.6%	0.1%	1.1%	6.8%
Oct	6,053,230	57.8%	29.7%	3.7%	0.1%	1.2%	6.9%
Nov	6,075,974	57.3%	29.8%	3.8%	0.1%	1.2%	7.3%
Dec	6,156,202	56.4%	30.0%	3.8%	0.1%	1.2%	7.9%
Jan-00	6,095,769	56.8%	30.2%	3.9%	0.1%	1.2%	7.3%
Feb	6,177,719	56.6%	29.9%	3.8%	0.1%	1.2%	7.9%
Mar	6,286,876	56.2%	29.9%	4.2%	0.1%	1.2%	7.9%

Source: Eurosystem. General government includes issues by state and local government as well as international organisations. National central banks certificates issued in Stage 2 are included under Credit institutions. Corporate data include equities computed at market value using Bloomberg prices.

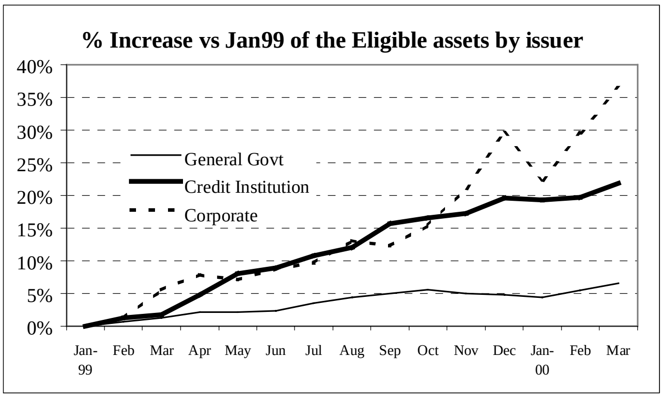
This reduction in the relative share of government securities vis-à-vis private securities took place in spite of the fact that issuance by euro area governments continued to increase, albeit

banks. Quantitative data on this category of collateral is not collected by the Eurosystem, and was therefore not considered in the statistics on eligible assets.

[11] These are mainly central government issues, as comparatively little is issued from regional governments; very few countries have included local government bonds among eligible assets.

more slowly than in previous years. In particular, the decreased issuance by the Italian government (whose total public debt represents about 32% of all government securities issued in the euro area) contributed substantially to this trend.

In the same period, the private sector increased substantially its share of total eligible assets. The greatest amount of issuance in private paper eligible in tier one came mainly from credit institutions (particularly in Germany and Luxembourg), and to a lesser extent from increased issuance of tier one and tier two assets by corporates, which took place in most countries of the euro area. Bank bonds increased their percentage from 29.1% to 31.1%. Substantial outstanding amounts of covered bonds could be found in those countries issuing Pfandbriefe or assimilated instruments, but also in some national markets with traditional mortgage bonds. Corporate paper also increased its share, from 10.1% to 12.1%. A substantial part of this increase took place for marketable tier two assets, and was at least partly due to an increase in the value of equities.



Source: Eurosystem

4.3 Is the eligibility as a Eurosystem asset at a premium?

It is interesting to analyse whether the fact that an asset is eligible for use in Eurosystem credit operations influences the "desirability" of issuing and holding eligible assets. While recognising that just over a year of Monetary Union is not a long enough period for a long-term assessment of changes in market structure and issuing patterns, qualitative and quantitative evidence was evaluated to better understand the evolution currently taking place.

Very rough indicators were constructed by relating for each month the eligible amounts of marketable collateral with the total outstanding amounts, (table 4.3).[12] The ratio between

[12] When comparing data on outstanding collateral and data on eligible assets, it should be noted that eligible assets cover a slightly different dataset compared to outstanding collateral; namely, data on outstanding assets include all debt instruments issued both by residents in the euro area and by non residents in the euro area, whereas eligible

eligible and outstanding assets increased from 86.5% to 88.8% in the period under review. The very high value of the ratio is in itself striking: although part of this result can be explained by the fact that bond markets in Europe are much more skewed towards high quality borrowers than, for example, in the US, there is evidence that the policy pursued by the Eurosystem of trying to achieve a very broad collateral basis while at the same time ensuring high quality of eligible collateral was reached.

Table 4.3. Proportion of eligible to outstanding securities

	Total		General Govt	Credit Institution	Corporate
	Eligib/Outst.	Non Elig/Outst.	Eligib/Outst.	Eligib/Outst.	Eligib/Outst.
Jan-99	86.5%	13.5%	95.5%	73.9%	68%
Feb	86.6%	13.4%	95.5%	74.3%	67%
Mar	87.0%	13.0%	95.6%	74.5%	72%
Apr	87.3%	12.7%	96.3%	75.6%	65%
May	87.6%	12.4%	95.7%	77.2%	67%
Jun	87.7%	12.3%	95.7%	77.3%	68%
Jul	87.8%	12.2%	96.1%	77.6%	66%
Aug	88.4%	11.6%	96.6%	78.1%	68%
Sep	89.1%	10.9%	96.8%	79.2%	71%
Oct	88.6%	11.4%	96.9%	78.4%	69%
Nov	88.2%	11.8%	96.4%	77.8%	71%
Dec	89.2%	10.8%	96.8%	79.6%	73%
Jan-00	88.9%	11.1%	96.1%	79.7%	74%
Feb	88.8%	11.2%	96.3%	78.9%	74%

Source: Calculations based on Eurosystem data. For reasons of comparability with data on outstanding assets, equities have been excluded in the calculation of figures for eligible assets. Figures for outstanding assets include Eurosystem data on euro-denominated assets issued by euro area residents and BIS data on non euro-area resident issues.

The analysis of the ratios in table 4.3 by issuer class reveals that the proportion between eligible and outstanding assets remained stable for government paper, whereas it increased for private issuers, from 73.9% to 78.9% for credit institutions, and from 68% to 74% for corporates. Such a high increase in a short time period is substantial and seems to suggest that eligibility could be one of the elements influencing at least partly the development and the pattern of issuance by private investors. Despite the limits of this analysis and with all the

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assets data cover assets located in the euro area issued or guaranteed by entities established in the EEA (for tier one) or in the euro area (for tier two) and include securities issued by supranational institutions.

caveats connected to the use of such a crude measure, this evidence supports the opinions expressed by market participants that the eligibility status tends to favour issuance of eligible assets vis-à-vis non-eligible securities by exerting a positive influence on the subscription of new issues among investors and reducing the funding costs for issuers. This evidence is in line with anecdotal evidence collected by the ECB, which has received a high number of queries on the eligibility of securities yet to be issued, motivated by the fact that eligibility is perceived as enhancing demand for these assets.

5. Trends in the use of collateral in the Eurosystem

5.1 Collateral management systems in the euro area

At present, national central banks operate their systems for collateral management either under the form of pooling, earmarking, or (in a few cases) a combination of both. In earmarking, each and every asset put forward (or predeposited) is specifically associated to a certain amount of credit obtained from the Eurosystem. In pooling systems, it is the pool as a whole and not specific assets that protect the credit. The actual mobilisation of collateral can be implemented either in the form of a pledge or in the form of repos. A majority of national central banks, especially those operating on the basis of a pooling system, tend to resort to a pledge of collateral, while the other central banks use repos.

In light of the differences highlighted above between pooling and earmarking systems, a *caveat* should be made when analysing data on collateral used. In earmarking systems there is a direct relationship between the credit operation and the actual instruments collateralising it, which makes for a closer relationship between the assets and the operations. Care should nevertheless be used in drawing quick conclusions on the use of assets in earmarking systems, as operational aspects related to the use of individual categories of assets (for example, ease of settlement and cost of transferring assets) may affect their use, particularly on a cross border basis. On the other hand, for pooling, no direct inferences on the collateral actually used by a counterparty can be made by analysing the structure of the pool. For this reason the term “put forward” rather than the term “used” is generally preferred when discussing the type of collateral available to counterparties for credit operations with the Eurosystem, either earmarked in specific operations or deposited in a pool.

5.2 Preliminary considerations on the distribution of eligible collateral

As seen in the previous chapter, a high amount of securities is potentially available to counterparties in Eurosystem credit operations. However, in order to better understand and to put in perspective actual data on the actual use of collateral by counterparties (presented in the next section), some considerations appear necessary at this point.

Firstly, the actual amount of assets held by credit institutions for refinancing purposes is a fraction of the total amount of eligible assets, since assets are held also by market participants who are not Eurosystem counterparties and by other economic agents. The actual amount of collateral held by counterparties depends on the financial structure in the different euro area countries. According to information collected by the Eurosystem in early 1999, as a rough estimate only about a third of the eligible collateral was held by credit institutions in the euro area, with the situation in individual countries deviating, sometimes substantially, from the average.

Secondly, of the actually available collateral to a counterparty, only a part can be readily used for credit operations, while the rest is needed for trading and client relationships, including trading on a proprietary basis, arbitraging, securities lending operations and participation in repo markets.

Thirdly, the differences in available collateral between counterparties also reflect the different amount of domestic collateral originally available in each country. For example, countries with a high amount of outstanding government securities or credit institutions bonds were in a more comfortable position right from the start of Monetary Union, while counterparties in some less richly endowed countries appeared to be more constrained at the beginning of 1999 when bidding for central bank funds. The initial differences appear to be closing, partly because more collateral has become available and also thanks to the substantial developments in the cross-border use of collateral, which appears to have somewhat mitigated the problems in the uneven distribution of collateral across the euro area, which characterised the early phase of Monetary Union.

Fourthly, the relative scarcity of securitised collateral is also partly due to existing differences in the level of development reached by financial markets in the individual euro area countries, for example, the different degrees of development reached in private security markets and in the legal frameworks for securitisation.

5.3 Use of collateral observed in the euro area and opportunity cost of collateral[13]

In the period under review, the amount of collateral put forward by counterparties to collateralise Eurosystem credit operations was relatively stable, just below EUR 600 billion. Roughly one third of this amount was used to collateralise monetary policy operations, while the rest was available for intra-day credit. In November 1999 the amount of collateral put forward by counterparties overtook the EUR 600 billion mark and a peak was reached in December with EUR 757 billion, which is explained by the build-up of collateral by counterparties in anticipation of a possible need to access central bank money because of possible problems arising from the "Y2K effect". A retrenchment then took place in the first three months of 2000.

Table 5.1 Use of marketable collateral by tier (EUR millions)

1999	Total	Tier 1 as % of total	Mkt Tier 2 as % of total
Jan	586,035	97.7%	2.3%
Feb	594,440	97.9%	2.1%
Mar	592,377	98.0%	2.0%
Apr	578,824	98.1%	1.9%
May	581,081	98.0%	2.0%
Jun	561,561	98.2%	1.8%
Jul	576,768	98.3%	1.7%
Aug	575,155	98.2%	1.8%
Sep	581,040	98.3%	1.7%
Oct	591,212	98.3%	1.7%
Nov	612,919	97.9%	2.1%
Dec	757,475	97.5%	2.5%
Jan-00	644,903	95.9%	4.1%
Feb	625,598	95.6%	4.4%
Mar	611,108	95.8%	4.2%

Source: Eurosystem. Data on tier 2 assets includes only marketable collateral.

In the period under review, the proportion of tier one collateral vis-à-vis the total put forward by counterparties decreased slightly from 97.7% in January 1999 to 95.8% in March 2000, whereas marketable tier two collateral increased from 2.3% to 4.2% (Table 5.1).

A first conclusion that can be drawn at the euro area-wide level by comparing the use of collateral with data on eligible assets is that proportionately more tier one assets have been put forward in order to secure credit operations at the start of Monetary Union; however, the

[13] Eligible collateral in the Eurosystem can be used both for monetary policy as well as for obtaining intraday credit for payments system purposes. Data collected by national central banks on the use of collateral by counterparties in the 15 months of Monetary Union show that a higher amount of collateral tends to be blocked for intraday credit than for monetary policy operations. This amount varies from country to country in the euro area, but was on average one to two times the size of collateral used for monetary policy operations. A specific analysis on use of collateral for intraday credit is not within the scope of the note.

trend is towards an increase in the use of marketable and non-marketable tier two assets (indeed, in at least four euro area countries, tier two assets in excess of 10% of total value of assets are presently put forward for collateralisation purposes). The overproportional use of tier two assets as collateral in collateralising Eurosystem credit operations suggests a lower opportunity cost than for the more liquid tier one assets. With the exception of equities, most marketable debt securities included in tier two are not actively traded on secondary markets. The liquidity of the instruments is low, due to their small issue size, to the fact that some of them are not traded on Stock Exchanges but rather over-the-counter and to the fact that investors tend to hold the securities until maturity. No repo markets exist for these assets and they are hardly used by banks for other purposes like trading or securities lending. Even equities (in the few countries where they are eligible) may be considered as having a low opportunity cost, since they are generally not used for repos and counterparties have a tendency to hold them as direct investment and do not trade actively in them.

Table 5.2 Eligible assets and Use of collateral by tier and issuer as % of total

	Eligible assets						Use of collateral					
	Tier 1			Tier 2			Tier 1			Tier 2		
	Gen Govt	Cred. Inst.	Corporate	Gen Govt	Cred. Inst.	Corporate	Gen Govt	Cred. Inst.	Corporate	Gen Govt	Cred. Inst.	Corporate
Jan-99	60.1%	27.9%	3.1%	0.1%	1.2%	7.0%	53.3%	44.1%	0.3%	0.1%	0.4%	1.5%
Feb	60.0%	28.0%	3.1%	0.1%	1.2%	7.1%	54.3%	43.2%	0.4%	0.1%	0.4%	1.6%
Mar	59.8%	27.9%	3.4%	0.1%	1.2%	7.0%	54.0%	43.6%	0.4%	0.1%	0.4%	1.5%
Apr	59.4%	28.3%	3.3%	0.1%	1.1%	7.3%	48.7%	48.8%	0.5%	0.1%	0.4%	1.5%
May	58.9%	28.9%	3.3%	0.1%	1.2%	7.1%	48.9%	48.6%	0.6%	0.1%	0.4%	1.5%
Jun	58.7%	29.0%	3.3%	0.1%	1.2%	7.2%	48.5%	49.1%	0.6%	0.1%	0.6%	1.1%
Jul	58.6%	29.2%	3.4%	0.1%	1.2%	7.0%	49.2%	48.5%	0.7%	0.1%	0.5%	1.0%
Aug	58.4%	29.2%	3.5%	0.1%	1.1%	7.1%	49.6%	48.0%	0.7%	0.1%	0.6%	1.1%
Sep	58.0%	29.8%	3.6%	0.1%	1.1%	6.8%	49.0%	48.5%	0.8%	0.1%	0.5%	1.0%
Oct	57.8%	29.7%	3.7%	0.1%	1.2%	6.9%	50.5%	47.2%	0.6%	0.1%	0.5%	1.1%
Nov	57.3%	29.8%	3.8%	0.1%	1.2%	7.3%	50.0%	47.1%	0.8%	0.1%	0.5%	1.5%
Dec	56.4%	30.0%	3.8%	0.1%	1.2%	7.9%	52.7%	43.8%	1.1%	0.1%	0.4%	2.0%
Jan-00	56.8%	30.2%	3.9%	0.1%	1.2%	7.3%	49.0%	45.8%	1.1%	0.1%	0.8%	3.2%
Feb	56.6%	29.9%	3.8%	0.1%	1.2%	7.9%	47.1%	47.3%	1.2%	0.1%	1.0%	3.3%
Mar	56.2%	29.9%	4.2%	0.1%	1.2%	7.9%	46.6%	47.8%	1.3%	0.1%	0.9%	3.3%

Source: Eurosystem.

Further conclusions can be drawn by comparing data on used collateral versus data on eligible collateral broken down by issuer (Table 5.2). Counterparties tend to put forward proportionately less government and corporate paper, whereas they tend to make larger use of securities issued by credit institutions. To give an idea of the sizes involved, in March 2000 counterparties were using government and credit institution securities in both tiers more or less in equal amounts (around 47%) and using only 4.6% of corporate paper, whereas in the same month the percentages for eligible government bonds, credit institution bonds and corporates were respectively 56%, 31.2% and 12.1%.

In addition to the mentioned difference in opportunity costs between the two tiers (higher for tier one, lower for tier two), data in Table 5.2 suggests that differences in opportunity costs also exist within individual tiers. On factor affecting opportunity costs could be that the different liquidity and fungibility of assets appear to play an important role: highly liquid assets such as government securities, used as “general collateral” in repos, and acting as underlying for derivative instruments, have the highest opportunity cost of all eligible securities (although the fact that high volumes of government securities are available in some countries tends to reduce their opportunity cost somewhat). On the other hand, oterh tier one debt instruments, among which those issued by credit institutions, do not appear to have such high opportunity costs, possibly because of the lower outstanding amounts and smaller issues (which affects their liquidity) compared to government bonds.

5.4 Domestic and cross border use of collateral

The analysis of the cross border use of collateral shows that, although in most countries predominantly domestic collateral was used for securing central bank credit operations, the use of cross border collateral has grown steadily since the start of Monetary Union (Table 5.3). Use of domestic collateral decreased from 91.8% in January 1999 to 82.9% in March 2000, whereas the use of cross border collateral increased from 8.2% to 17.1% in the same period. The increase in the figures on domestic and cross border collateral put forward at the end of 1999 was due to the build-up of collateral by counterparties in anticipation of a possible need to access central bank money because of Y2K problems. The high percentage of cross border collateral recorded also in January and February 2000 was due to the fact that the reduction in the total use of collateral was proportionately higher than the reduction in the amount of assets put forward cross border. This effect seems to have ceased from March 2000.

The amount of cross-border collateral used varied considerably across countries. In some countries like for example Luxembourg and Ireland, cross border use of collateral accounted on average for about half or more of total collateral used. In other countries, like for example Italy and Portugal, cross border use was negligible, although in the latest period the proportion of cross border collateral used has increased. In absolute terms, the greatest use of cross border collateral in the period under review was made by counterparties in Germany, France and Luxembourg, which accounted for about three quarters of the total collateral used cross border. Nearly all cross border collateral used was tier one. In most euro area countries, mainly government bonds were used. Very little cross border use was made of marketable and non marketable tier two collateral, which suggests that tier two assets are mainly of national importance and/or, particularly in the case of non-marketable assets, their cross border use may be seen as operationally too complex or generating high costs.

Data available on the use of collateral by residence of the issuer “providing” the collateral shows that most of the collateral “came” from Italy, Germany, Spain and Belgium which provided about three quarters of all collateral used cross border in the euro area. This concentration can be partly ascribed to the abundance of collateral available in some of these countries (for example, government securities in Italy and Belgium, bank bonds in Germany).

Table 5.3 Use of domestic and cross border marketable collateral: share of the total used
(EUR millions)

1999	Total Used	Total Dom as % of total	Total cb as % of total	Dom T1 as % of total	Dom T2 as % of total	CB T1 as % of total	CB T2 as % of total
Jan-99	586,035	91.8%	8.2%	89.5%	2.3%	8.2%	0.0%
Feb	594,440	91.2%	8.8%	89.2%	2.0%	8.7%	0.0%
Mar	592,377	90.1%	9.9%	88.2%	1.9%	9.9%	0.1%
Apr	578,824	88.4%	11.6%	86.6%	1.9%	11.5%	0.1%
May	581,081	88.3%	11.7%	86.4%	1.9%	11.6%	0.1%
Jun	561,561	87.6%	12.4%	85.9%	1.7%	12.4%	0.1%
Jul	576,768	87.0%	13.0%	85.4%	1.6%	13.0%	0.1%
Aug	575,155	87.1%	12.9%	85.4%	1.7%	12.9%	0.1%
Sep	581,040	86.2%	13.8%	84.6%	1.6%	13.7%	0.1%
Oct	591,212	86.1%	13.9%	84.5%	1.7%	13.8%	0.1%
Nov	612,919	84.7%	15.3%	82.6%	2.0%	15.3%	0.1%
Dec	757,475	81.4%	18.6%	79.0%	2.4%	18.5%	0.1%
Jan-00	644,903	80.8%	19.2%	76.8%	4.1%	19.1%	0.1%
Feb	625,598	80.8%	19.2%	76.5%	4.3%	19.1%	0.1%
Mar	611,108	82.9%	17.1%	78.7%	4.2%	17.0%	0.1%

Source: Eurosystem

Other possible reasons for the high demand include the relatively large availability of some of these assets or the fact that some of these assets represent are a benchmark on some segments of the euro area yield curve. In addition, some of these assets recorded positive yield differentials (of up to 20 basis points) vis-à-vis benchmark issues, which may have made these assets more attractive and less expensive to hold.[14]

The predominant use of domestic collateral in most euro area countries may be explained by the fact that in most countries, only domestic assets were used to collateralise central bank credit operations before Monetary Union, and that sufficient domestic collateral continues to be available in most countries. Furthermore, domestic markets continue to be better known and are more easily accessible by counterparties. Actual operational costs incurred by counterparties and the speed and ease of settlement also play a role in determining a counterparty's choice whether to use cross border collateral or not.

6. Challenges to the Eurosystem collateral framework

A first assessment of the framework after sixteen months into Monetary Union shows that the main aim of ensuring adequate protection of credit operations was achieved without major problems. However, the collateral framework is not, and is not meant to be, a static element in the Eurosystem operational framework, but is required to adapt to the changing market conditions in the euro area, Some operational issues and challenges have emerged that deserve further attention.

The Eurosystem is aware of the influence that the collateral policy exerts on market functioning and structure. The eligibility status of already issued and especially of new issues appears to be an important criterion for investors: anecdotal evidence indicates that the inclusion of securities within the set of eligible assets affects demand for new securities. Furthermore, eligible assets for Eurosytem operations may be expected to become a reference class for transactions on the markets as the trend towards integration and standardisation progresses further within the euro area. In this framework, and given the importance of clear and transparent eligibility criteria for euro-denominated assets, the objective of achieving transparency should continue to be pursued.

Another challenge is represented by the need for increased homogeneity in the risk control measures applied by the Eurosystem. Valuation margins have worked quite well until now, in particular for tier one assets, which constitute the bulk of both eligible and used assets. However, there are elements pointing to the fact that "haircuts" applied to tier two assets require some streamlining to ensure equal treatment and consistency. Work is being carried out within the Eurosystem to improve the risk control framework for such assets. It can be

[14] For a discussion of the possible causes of the differences in yields of government paper, see Danthine, Giavazzi

anticipated here that the revised framework will foresee classes of assets with homogenous characteristics, in terms of liquidity and asset features, to which coherent haircuts (differentiated by residual maturity of the asset) are applied.

The Eurosystem engages in monitoring how the collateral framework is perceived to function, and pays due attention to the needs expressed by market participants to improve procedures, since it is aware that the pursuit of operational efficiency translates into benefits for the implementation of monetary policy. One of the areas where a need for improvement has been identified relates to the need for swifter assessment of collateral eligibility than the current weekly procedure allows. This would permit immediate use of new issues of securities for collateralisation purposes. Work is being carried out within the Eurosystem to develop the more robust infrastructure necessary to increase the updating frequency of the lists, so as to make the whole assessment process swifter and ensure that new issues benefit from a more timely inclusion among eligible assets.

Another area where work is in progress relates to assessing the creditworthiness of assets. Assessing financial soundness is a very complex task altogether. It cannot be condensed in a simple set of rules to be applied mechanically, and implies decisions that necessarily contain elements of discretion and judgement (like for example setting the line of differentiation between eligible and non eligible assets, or comparing credit assessment systems). National systems are still characterised by very substantial differences in terms of accounting principles, legal rules and operational practices, which very much complicate cross border comparisons of financial and corporate institutions. It should be reminded that in June 1999 the Basle Committee on Banking Supervision released a draft document on Capital Adequacy Rules containing proposals for a recommended approach to the use of ratings for supervisory purposes, where the possibility of also using internal rating systems of credit institutions and other assessment bodies like export insurance agencies is envisaged. Developments in this area will continue to be monitored by the Eurosystem with the aim of achieving more transparency on this aspect of eligibility.

One of the challenges to be considered is whether the present two-tier system, which was set up to ensure a wide collateral base for counterparties, would warrant being transformed into an integrated list of collateral (as is presently the case with other major central banks) or whether it should become a permanent feature of the framework. The present two-tier system is already rather complex to manage. An extension of the lists of tier two could generate

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and von Thadden (2000), section 4.2.

further complexity in the procedures, also in a cross-border context, which contradict the principles of operational efficiency, simplicity and transparency. This will need to be addressed in the medium term.

Another challenge in the medium to long term will possibly come from the adjustments and adaptations that the collateral framework will need to undergo to ensure a smooth integration of successive waves of “accession countries” into Monetary Union.

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