



EUROPEAN CENTRAL BANK

EUROSYSTEM

# COVERED BONDS IN THE EU FINANCIAL SYSTEM

DECEMBER 2008

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## EXECUTIVE SUMMARY

Covered bonds have existed in Europe for centuries, and have come to be used in recent years in an increasing number of EU countries. Covered bonds are dual-recourse bonds, with a claim on both the issuer and a cover pool of high-quality collateral (which the issuer is required to maintain), issued under specific covered bond legislation (or contracts which emulate this). The recourse to the issuer and consequent lack of credit risk transfer distinguishes covered bonds from asset-backed securities, with significant implications for issuers and investors.

The covered bond market in the EU had grown to over EUR 2 trillion by the end of 2007, and issuance has proliferated from a few countries with traditional specialist issuers to the majority of EU countries. Generally, there is a high degree of secondary market liquidity, in particular for the jumbo covered bond market. The cover assets are typically mortgage loans and loans to the public sector. In recent years, there has been a slight change in the composition of collateral pools. While mortgage loans have gained steadily in importance, the share of loans to the public sector has diminished.

Turning to the regulatory framework, a comparative analysis of covered bond regimes reveals that although EU directives establish some common requirements, significant differences remain between national regulations for covered bond issuance. Covered bond issuance and maintenance involve a number of risk management issues, relating for instance to the type and quality of cover pool assets and cash-flow mismatches for issuers. Covered bonds are typically rated much higher than the unsecured liabilities of the issuer, though rating agencies differ in their approach to rating covered bonds.

Covered bonds are one of several funding sources for banks, and can help banks to diversify their funding structure and can facilitate their asset-liability management.

The key difference between covered bonds and securitisation is that covered bonds do not involve credit risk transfer. The credit risk stays with the originator, which has to hold capital (against the risk of losses) but typically obtains cheaper funding through the covered bond issuance. This affects the risk management incentives of the credit institution, generally strengthening the incentives for prudent credit risk evaluation and monitoring. Covered bond liabilities and cover pool assets are generally more transparently accounted for in banks' published accounts than securitisation transactions. Also, regulation brings covered bond issuance within the ambit of financial supervisors, while much of the securitisation activity had been outside the directly regulated parts of the financial system.

Although covered bonds as dual-recourse instruments are among the safest investments available, they have not escaped the effects of the financial market turmoil since mid-2007. However, until mid-September 2008, the performance of covered bonds illustrates that they have been relatively more resilient than other wholesale funding instruments. Spreads have widened, but much less than for unsecured senior debt or for asset-backed securities. The spread widening has also highlighted differences between different covered bonds, in terms of types of collateral, the legal framework, a domestic versus international investor base. Primary market issuance of covered bonds has continued until mid-September 2008, albeit at a lower volume, shorter maturities and higher spreads. However, the impact has been smaller than on other funding sources. Secondary market liquidity has been affected, due to the disruption to interbank market-making arrangements.

As the financial turmoil intensified in mid-September 2008 and funding markets came under increased pressure, covered bonds, similarly to other wholesale funding instruments, have also been adversely affected. Spreads in secondary markets further widened and issuance in primary markets stalled. Furthermore, by the cut-off date for this report (mid-November),

liquidity in the secondary market for covered bonds remained low in most parts of the EU.

Looking forward, as for other wholesale funding instruments, the outlook for covered bonds is likely to remain challenging in the near-term as long as funding markets continue to be disrupted. However, once general investor confidence returns and dislocations in funding markets ease, jumbo covered bonds are likely to be issued again.

In conclusion, in view of the main features of covered bonds, the smooth functioning of these markets is important from a financial stability perspective. In this context, it should be noted that covered bonds represent an important funding source for mortgage lending in several countries. Since covered bonds are, as dual-recourse instruments, less risky than most other bank securities and have proven themselves relatively more resilient during the market turmoil, the preservation of the proper functioning of covered bond markets is of great interest both to market participants and regulators.

## I INTRODUCTION

The market for European covered bonds has been expanding in recent years. This has implications for the development of capital markets, for the opportunities for investors to include high-quality products in their portfolios and for ways for credit institutions to design their funding. Most recently, the covered bond market has been affected by the credit market turmoil, as indicated by decreasing issuance volumes and widening spreads. Against this background, the Banking Supervision Committee (BSC) of the European System of Central Banks decided to carry out a study with the aim of analysing longer-term and more recent developments in EU covered bond markets and investigating the implications of covered bonds for the stability of the EU financial system. This report, prepared with the assistance of the Working Group on Macroprudential Analysis (WGMA), draws on various information sources. A stock-take was done of existing information on covered bond markets at both the European and national level. The report also benefited from insights from market participants (issuers and investors) and rating agencies.

The report is organised as follows. Section 2 describes the main characteristics of covered bonds and briefly discusses the differences between covered bonds and asset-backed securities (ABSs). Section 3 explores the growth and proliferation of covered bonds in the EU and endeavours to identify the main drivers of covered bond markets. Section 4 covers developments in covered bond legislation in different EU Member States and provides a comparative analysis of legal-based and structured covered bonds. It also discusses the risk management issues relating to covered bonds.

Section 5 focuses on recent developments in covered bond markets. In particular, the performance of covered bonds during the market turmoil is analysed in detail, including developments in spreads and primary issuance.

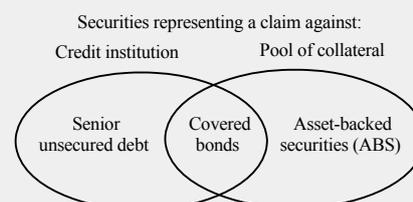
The report concludes with a discussion of the implications of covered bonds for financial stability (Section 6). In particular, covered bonds possess some important features with respect to the management of funding liquidity risk. They may also have important implications for banks' credit risk management incentives, especially in comparison with true-sale securitisation.

## 2 WHAT ARE COVERED BONDS?

Covered bonds are “dual recourse” bonds issued by (or offering recourse to) a credit institution and with priority recourse to a cover pool of collateral. Investors in effect have a claim against the issuing institution in the first instance, and, in the event of failure of the issuer, a priority claim on the cover pool. Compared with other debt securities issued by financial institutions, such as senior unsecured debt or asset-backed securities, covered bonds can be seen as “senior secured debt” (see Chart 1). This dual-recourse nature should make covered bonds resilient to shocks to either issuer or collateral.

There are many different types of covered bond in the EU market and no universally agreed definition exists. The closest to a shared definition is the “essential features of covered bonds” agreed by the industry body, the European Covered Bond Council (ECBC; see Box 1).

Chart 1 Covered bonds: a dual-recourse instrument



## Box 1

## ECBC ESSENTIAL FEATURES OF COVERED BONDS

In an attempt to define minimum standards for covered bonds, the European Covered Bond Council – the platform for covered bond market participants in Europe – has isolated the following essential features, which are achieved under special-law-based frameworks or general-law-based frameworks:

1. The bond is issued by – or bondholders otherwise have full recourse to – a credit institution which is subject to public supervision and regulation.
2. Bondholders have a claim against a cover pool of financial assets in priority to the unsecured creditors of the credit institution.
3. The credit institution has the ongoing obligation to maintain sufficient assets in the cover pool to satisfy the claims of covered bondholders at all times.
4. The obligations of the credit institution in respect of the cover pool are supervised by public or other independent bodies.

In the EU, the Capital Requirements Directive (CRD) does set standards for the collateral eligible for the cover pool, in terms of quality and types of collateral – loans to the public sector and residential, commercial and ship mortgages. The CRD allows lower risk weights for covered bonds issued under a special legal framework. Alternatively – largely in the absence of specific legal frameworks – “structured covered bonds” have been issued under private contractual agreements that use aspects of structured finance to replicate the economic effects of a covered bond (see Section 4.2).

Covered bonds, as a dual-recourse instrument, can be juxtaposed with both senior unsecured debt and ABSs. Compared with senior unsecured debt, the added security of a collateral pool acts as a credit enhancement to the issuer’s creditworthiness and means that covered bonds are generally more highly rated. Compared with ABSs (see Table 1), the cover pool is dynamic: assets which mature or no longer meet covered bond requirements can be replaced by the issuer to ensure that there is always enough cover for the outstanding covered bonds. In contrast to ABSs, the cover assets are generally kept on the

credit institution’s balance sheet. Covered bonds generally pay fixed rates and have “bullet” maturities.<sup>1</sup> In contrast, ABSs generally have floating rates, and defaults and early repayments are usually passed straight through to investors.

Covered bonds have attractive features to all parties directly involved:

Issuers can access cheaper funding for longer maturities, as covered bonds typically achieve a higher credit rating than the issuer’s rating. Further, covered bonds establish an issuer in the bond market and pave the way for issuance of conventional bonds to the same investor base. Covered bonds also provide diversification in funding sources. Covered bond legislation has often been introduced at the request of the banking industry.

Investors in covered bonds obtain access to a low-risk, highly rated (often AAA) bond with a higher yield than high-quality agency or

<sup>1</sup> An exception are traditional Danish callable and amortising mortgage credit bonds, designed to fully match the cash-flow and prepayment optionality of the underlying mortgage cover pool.

**Table I Main characteristics of covered bonds and asset-backed securities<sup>1)</sup>**

	Covered bonds	Asset-backed securities
<b>Motivation of issuer</b>	Refinancing	Risk reduction, regulatory arbitrage, refinancing <sup>2)</sup>
<b>Issuer</b>	Generally originator of loans	Special entity
<b>Recourse to originator</b>	Yes	Generally no
<b>Structure</b>	Assets generally remain on balance sheet but are identified as belonging to cover pool	Assets are transferred to special entity
<b>Impact on issuer's capital requirements</b>	None	Reduction
<b>Legal restrictions on issuer or eligible collateral</b>	Yes (if issued under covered bond legislation)	Generally none
<b>Management of asset pool</b>	Generally dynamic	Predominantly static
<b>Transparency of asset pool to investors</b>	Limited (but quality regularly controlled by trustees or rating agencies)	Limited
<b>Prepayment of assets</b>	No pass-through as assets are replaced	Generally full pass-through
<b>Tranching</b>	None	Common
<b>Coupon</b>	Predominantly fixed	Predominantly floating

1) Source: Packer, F., R. Stever and C. Upper, (2007), "The covered bond market", BIS Quarterly Review, September.

2) Under certain conditions, entities might have incentives to issue ABSs with the *sole* purpose of obtaining liquidity, as has happened in Spain during the last few years. A special regulatory framework combined with the low cost of securitisation compared with other sources of financing has made Spanish banks a major issuer of ABSs in Europe (second to the United Kingdom). Where this is the case, the frontier between ABSs and covered bonds blurs, as both instruments are used solely to raise funds.

government debt. The dual recourse nature of covered bonds and the legislative framework governing the issuers' obligation to maintain the adequacy of the cover pool lessen the risks to investors. The secondary market for covered bonds, and especially for jumbo covered bonds, is generally seen as much more liquid than the ABS market, but also much less liquid than the government bond market (justifying some liquidity risk premium).

Supervisors benefit from a legislative framework for covered bonds, which provides clarity on the small print details of where the risk lies and what recourse and protection investors have. Indeed, collateral needs to fulfil specific criteria to be eligible, and this encourages good standards in origination (loan-to-value (LTV) limit, for example), which should help asset discrimination in times of crisis. Cover pool assets are kept on the issuer's balance sheet and are closely monitored, incurring a capital charge and creating stronger incentives for credit evaluation and monitoring than in "originate-to-distribute" securitisation. Further, any deterioration of an asset will be reflected in its prudential ratios. As regards market access,

covered bonds, because of their regulatory framework, appear a useful source of mid- to long-dated funding for the banking system in times of stress.

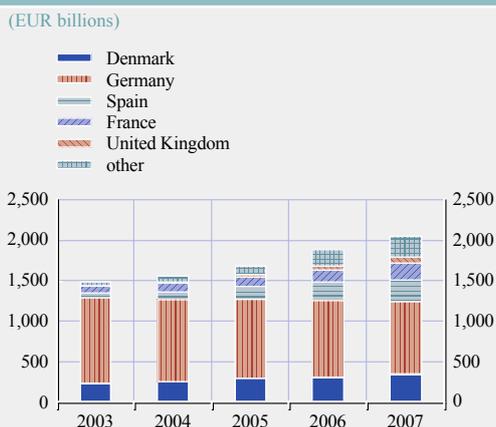
Central banks typically supply liquidity to the banking system through lending against high-quality collateral. Covered bonds, as dual-recourse instruments, are on the Eurosystem's single list of collateral, as they limit the risk of losses to the central bank while contributing to an effective implementation of monetary policy.

### 3 GROWTH AND PROLIFERATION OF COVERED BONDS

Over the last five years the covered bond market has developed into the most important privately issued bond segment in Europe's capital markets, with over €2 trillion outstanding at the end of 2007. The overall EU covered bond market has experienced significant growth, increasing by 38% from 2003 to 2007 (see Chart 2).

Although Danish and German institutions remained the primary issuers of covered bonds

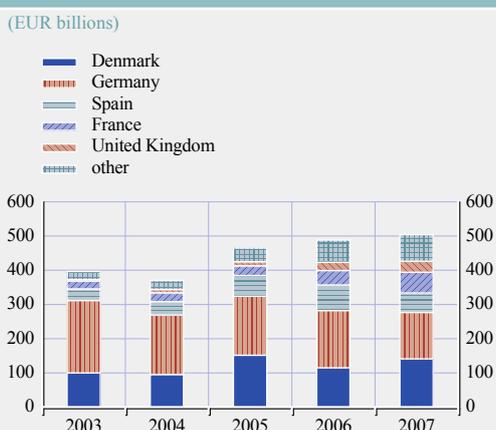
Chart 2 Total covered bonds outstanding in the EU by residence of borrower



Source: ECBC.

in 2007 (€277 billion), accounting for more than half of the amount issued, substantial issuance also took place in several other countries. In 2007, Spanish and French banks were amongst the largest issuers of covered bonds, with issuance of €57 billion and €61 billion respectively. Covered bonds issued from Denmark, Germany, Spain, France and the United Kingdom accounted for 84% of the total issuance in 2007, which reveals that this market is relatively concentrated in a few countries (see Chart 3).

Chart 3 Total covered bond issuance in the EU by residence of borrower



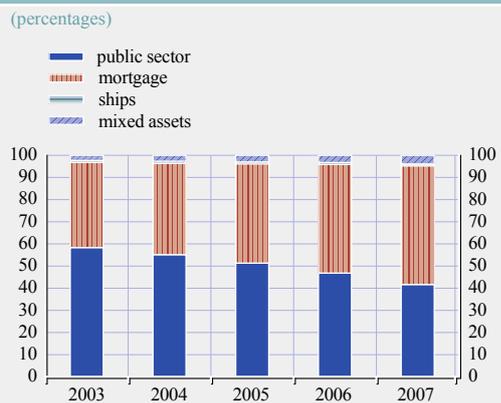
Source: ECBC.

Up to 2003 covered bonds were only issued in accordance with the regulatory regime in place in each country. From 2003 onwards, structured covered bonds, issued outside dedicated legislation, were introduced in the market. According to qualitative information, the amounts issued increased in 2006 and in the first half of 2007. As a consequence, the share of structured covered bonds has grown at the expense of the legislative covered bonds, though legislative covered bonds remain dominant. In the past, structured covered bonds provided a secured funding solution to issuers that lacked a domestic covered bond regime (in the United Kingdom, the Netherlands or non-EU Member States). However, more recently some credit institutions (in France, for example) have issued contractual covered bonds outside their domestic legislation. This has enabled issuers to tailor the characteristics of covered bond programmes to the preferences of prospective investors. Contractual covered bonds tend to be originated by new issuers, who also tend to select mortgage loans rather than public loans as collateral for their secured funding.

The range of eligible assets in the pool for a covered bond is established according to the legal framework or the contractual basis. The cover assets are typically mortgage loans and loans to the public sector. At the end of 2007, of the total volume of outstanding covered bonds, €1,108 billion was backed by mortgage loans and €859 billion was backed by public sector loans. Covered bonds backed by mortgage loans (residential and commercial) were issued in the majority of EU countries. Bonds covered by loans to the public sector played an important role in only a limited number of countries i.e. Germany, Ireland, Spain, France, Italy, Luxembourg and Austria. Finally, ship loans were used in the pool of assets in countries such as Denmark and Germany.

In recent years, there has been a slight change in the composition of collateral pools (see Chart 4). While mortgage loans have gained steadily in importance, the share of loans to the public sector has diminished. This development is

**Chart 4 Breakdown of covered bonds outstanding in the EU by cover assets**



Source: ECBC.

mainly due to, first, the growing popularity of mortgage covered bonds in the new countries joining the market and, second, the shrinking supply of assets eligible for German public cover pools as a result of the fact that public sector guarantees have been withdrawn from Landesbanks and debt issued by savings banks is no longer eligible.

At the end of 2007, 75% of the total outstanding amount of covered bonds was denominated in euro. However, as the covered bond market has become more global, issuance in other currencies has also increased, allowing issuers to benefit from foreign exchange developments or to broaden their investor base. Finally, the bulk of covered bonds outstanding have a fixed rate (86% in 2007). In terms of maturity, issuers continue to focus on the medium to long-term (two to ten years).

### 3.1 ESTABLISHMENT OF THE JUMBO COVERED BOND MARKET

The “jumbo” segment was developed in order to increase the liquidity of the covered bond market. Jumbo covered bonds were established in 1995 with the primary objective of broadening the investor base by attracting international investors. In this market segment only “plain-vanilla” fixed rate bullet bonds in euro with a minimum issue size of €1 billion are issued, and

at least five market makers are required to quote each other bid/ask prices for ticket sizes of up to €15 million. In addition, the bid/ask spread is set in relation to the remaining maturity to further underpin liquidity.<sup>2</sup> The market making is provided as an additional service by the underwriters of the issues. Typically, the issuing bank is also one of the market makers for its own bonds. The high liquidity ensured by the market making has been a primary reason for very positive development of the covered bond in recent years. Trading in jumbo covered bonds has so far been dominated by an over-the-counter (OTC) market with over half of all trades, while electronic platforms have been of only secondary importance. Given its characteristics, the jumbo covered bond market has achieved the status of a “benchmark segment”. It is the main actively traded part of the covered bond market and represents approximately half of the total market. From a more global perspective, before the onset of the financial turmoil it was the second most liquid bond market in Europe after sovereign government bonds.

### 3.2 DRIVERS OF GROWTH

The development of the mortgage bond in Europe has been supported in general by the attractiveness to investors of combining relatively low risk with higher returns than offered by government bonds. Covered bonds are considered a low-risk investment, with the majority being rated AAA. It is expected that the market will continue to develop favourably, especially as national legislators adopt or modernise covered bond legislation, leading to growth in their national covered bond markets and increasing liquidity. There are some supply and demand factors that have explained the strong growth in the covered bond market. The following paragraphs identify some of the drivers of this market.

<sup>2</sup> For a remaining maturity of up to four years the spread is five cent, for four to six years six cent, six to eight years eight cent, eight to 15 years ten cent, 15 to 20 years 15 cent and 25 cent for up to 25 years.

On the supply side, the potential asset pool has been constantly growing. Mortgage lending to households is an important business line for most European credit institutions and for some represents a sizeable proportion of their overall lending portfolio. Strong growth in lending to this sector in recent years has created potential collateral that credit institutions have been able to use to obtain medium to long-term funding in a cost-efficient way. Given the discrepancy between credit and deposit growth rates, credit institutions have resorted to alternative funding sources.

Indeed, starting from a low base, issuance of covered bonds has predominantly increased in European countries that have needed to finance their fast-growing mortgage markets. In recent years, the central and eastern European countries have observed the highest mortgage market growth. As a result, private sector analysts expect increased issuance from these regions in the future. It should also be noted that every time a new country enters the covered bond market it positively affects the investor base, as not only is a new product brought to the market but also the domestic investor base is introduced to the covered bond market.

The importance of covered bonds is underlined by their share in the refinancing of residential property loans. While on average the bulk of mortgage funding still comes from customer deposits, covered bonds represent an important instrument for financing mortgage loans in a number of EU countries. In particular, the share of covered bonds in mortgage funding instruments exceeds 30% in Denmark, Spain and Sweden as well as in some central and Eastern European countries (based on 2006 data).<sup>3</sup>

In many European countries covered bonds are protected by specific legislation. Their soundness can be seen in the rating distribution of the issuing entities and of the covered bonds themselves. Further, due to their high quality, covered bonds represent relatively cheap refinancing instruments for credit institutions.

Still on the supply side, covered bonds allow credit institutions to lengthen their funding profile, to better manage both their assets and liabilities, and to enlarge their investor base.

On the demand side, the broadening of the investor base and changes in the relevant legal frameworks for financial intermediaries helped to develop the covered bond market. With high credit ratings and a relatively solid performance in the secondary market, the covered bond market has also been an attractive place for investors. The ratings of the majority of covered bond issues filled the gap between the top sovereign issuers in Europe and other issues with lower ratings. Thus, covered bonds appeal to a broad group of investors, namely insurance companies, pension funds, mutual funds, specialised funds, credit institutions, other financial institutions and (in some countries) even retail investors.

As financial institutions are the main investor group in this market, the legal framework that regulates the financial sector's activity is relevant whenever an investment decision is made. In fact, the rapid growth of European covered bonds in 1990s can further be attributed to EU legislation, such as the Undertaking for Collective Investments in Transferable Securities (UCITS) Directive and the CRD. The treatment of covered bonds under the Basel II capital framework is likely to further boost credit institutions' demand for mortgage covered bonds, as it appears that on average it may result in an overall reduction of capital requirements, while there may also be increased differentiation in risk weightings with respect to issuer credit quality (see Box 2 on "EU regulations on covered bonds").

Finally, the proliferation of covered bonds, in terms of issuers, currencies and assets, increases the possibilities for diversification and the diversity in the market. The issuance of US dollar-denominated covered bonds since late 2006 may attract more investors looking to

3 Source: "Financial integration in Europe", ECB, April 2008.



diversify their exposures in different currencies. Market participants have also discussed widening covered bonds to include new asset classes, such as student loans, aeroplane financing or junior mortgages, although these asset classes are not recognised by the EU CRD and UCITS Directives. Further, some non-financial corporations have started issuing covered bonds.

#### 4 REGULATION AND RISK MANAGEMENT ISSUES RELATING TO COVERED BONDS

Different national frameworks still govern covered bonds, with institutional settings, market characteristics and legal systems varying across Europe. However, common financial markets and regulatory harmonisation within the EU, as well as competition within the industry, are encouraging convergence towards common institutional and contractual arrangements.

Many national covered bond regimes have deep roots, sometimes dating back to eighteenth and nineteenth centuries. Where it was not yet in place, legislation on covered bonds has been enacted in the last few years (Finland in 2000, Ireland in 2001, Sweden in 2004, Portugal in 2006, Norway, Italy and Greece in 2007, and the United Kingdom and the Netherlands in 2008). Some of the most established regimes – such as in Denmark, Germany, Spain, France and Austria – have been amended recently in order to take into account financial innovation and the requirements laid down in the CRD.

From the perspective of investors, the existence of covered bond regimes facilitates the assessment of risks in covered bonds compliant with the regulations in force. The widespread introduction and updating of covered bond legislation suggests that many countries see benefits from having a covered bond regime. The Mortgage Funding Expert Group has recommended (in its 2006 report to the European Commission) that EU Member States without covered bond legislation for all

mortgage lenders should consider introducing a covered bond regime.

Notwithstanding the minimum harmonisation encouraged by European financial regulation, there is still a wide dispersion in the special covered bond regulation across Europe, which implies that information and search costs for investors may differ between jurisdictions. Although covered bonds benefit from the same European regulatory treatment under the relevant directives, they attract different ratings/spreads, partly explained by differences in national regulatory frameworks. Indeed rating agencies consider the legal framework as a key criterion in the rating process, looking in particular at the strength of investor protection, such as collateral eligibility criteria, quality of prudential supervision, LTV ceilings,<sup>4</sup> mandatory over-collateralisation, insolvency treatment and asset/liability management requirements.

In this section, a comparative approach highlights common features and the main differences between national covered bond regimes (mainly within the EU context). The objective of the analysis is not to define the “best” covered bond regime, but rather to draw attention to regulatory features that make covered bonds stand out in the financial landscape, and in particular to what makes them different from other funding instruments (for instance residential mortgage-backed securities or RMBSs). At the same time, attention is drawn to examples of good practice, with a view to strengthening financial stability and market confidence, also taking the actions recently proposed by the Financial Stability Forum into account.<sup>5</sup>

##### 4.1 LEVELS OF REGULATION

The different levels of regulation relating to covered bonds may be described as follows:

<sup>4</sup> The ratio between the amount of the credit exposure and the estimated value of the real estate collateral.

<sup>5</sup> “Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience”, April 2008.

- European directives – although their purpose is to provide harmonisation for the purposes of prudential regulation of banks and UCITS, EU directives are essential to understanding the main features and risk profiles of covered bonds (see Box 2). The Committee of European Banking Supervisors (CEBS) also plays a part in the EU arena by giving advice to the European Commission on banking-related policy issues.
- National legislation – the basic framework for national covered bonds is set at this level, particularly the general requirements for issuer banks, the competences of authorities and other entities responsible for controls, and provisions aimed at ensuring ring-fencing of assets and investors' rights in the event of bankruptcy.
- Secondary legislation – enacted by governments and/or supervisory bodies to lay down more detailed rules on such matters as eligibility requirements, minimum collateralisation levels, asset and liability management, and the controls to be carried out.
- Contracts and offering circulars (self-regulation) – the aforementioned regulatory provisions are implemented, and aspects not covered in other regulations are governed, at this level. Self-regulation also provides further investor protection, for instance by means of disclosure on issuers and cover pools.

A rule-based approach still prevails across Europe, with regulations providing detailed provisions on almost every aspect of covered bonds.<sup>6</sup> Regulations have not discouraged market innovation, and room has been left for new structures and modern risk management techniques.

Overall, minimum harmonisation at the European level, flexibility within national frameworks, and self-regulation by market participants, combined in such a way as to allow market innovation and regulatory competition, can be described as the three “regulatory pillars” of future developments in covered bond markets.

<sup>6</sup> An exception is the United Kingdom, whose recent regulations are grounded in a “principle-based approach”.

## Box 2

### EU DIRECTIVES ON COVERED BONDS

#### Two sets of European directives regulate the prudential treatment of covered bonds:

First, Directive 85/611/EEC on undertakings for collective investments in transferable securities (UCITS) provides limits on the concentration of investments in securities made by collective investment firms. According to article 22(4) of the directive, the general limit of 5% may be raised to a maximum of 25% in case of investments in covered bonds. In the Directive covered bonds are defined as bonds issued by a credit institution that is subject by law to special public supervision designed to protect bondholders. In particular, bondholders' claims must be secured during the whole maturity of the bonds by assets that, under the applicable law, would be used on a priority basis for the reimbursement of the principal and payment of the interest in the event of an issuer's failure.

Second, Directives 2006/48/EC and 2006/49/EC (which together form the CRD) contain specific rules on the calculation of banks' capital requirements for credit risk when investing in covered

bonds. In particular, a more favourable treatment is given to such exposures, provided that the covered bonds comply with the definition in the UCITS Directive and that certain eligibility requirements for the underlying assets are met (see Annex VII, points 68 to 71, of Directive 2006/48/EC). The UCITS Directive allows investment funds to invest up to 25% of their assets in the covered bonds of a single issuer as long as the issuer and the bonds satisfy the eligibility criteria established.

As regards eligibility requirements, the categories of asset listed in the CRD include: exposures to governments or other public sector entities in the EU; exposures to non-EU governments and public sector entities that qualify for credit quality step 1 under the “standardised approach”; loans secured by residential or commercial real estate whose LTV ratio is not higher, respectively, than 80% and 60%; loans secured by ships with a LTV ratio not higher than 60%; exposures to banks that qualify for credit quality step 1, not exceeding 15% of the cover pool.

In line with Basel II, the CRD provides a range of methods through which investing banks can determine regulatory capital charges. Under the standardised approach, covered bonds backed by eligible assets (as referred to above) fall within a specific portfolio of credit exposures and thus qualify for reduced risk weights. These are based on the risk weight assigned to senior unsecured exposures of the issuer banks, which in turn depends on the credit rating assigned to the bank by a recognised agency (typically, a 10% risk weight may be applied to covered bonds issued by a bank whose unsecured exposures are weighted at 20%). Banks adopting the “foundation IRB” approach to credit risk can use lower “loss given default” (LGD) values in the relevant regulatory function, while “advanced IRB” banks can apply estimated LGD values resulting from their own internal models. As regards market risks, special methods for calculating the capital requirement needed for the specific risk on debt securities apply to covered bonds.

Finally, for the purposes of regulations on large exposures, CRD-compliant covered bonds may be exempted fully or partially from the application of concentration limits.

## 4.2 MAIN CATEGORISATIONS

Certain categorisations might be useful for a better understanding of covered bond markets and regulations from a public policy point of view, though they should not be understood as complete classifications or as rigid definitions (as such categorisations are not necessarily stated in rules and tend to blur in market practice).

A preliminary distinction has to be drawn between “regulated” (or “legislative”) and “structured” covered bonds. Covered bonds are called “regulated” if their main characteristics – eligible assets, minimum over-collateralisation, monitoring, supervision, and so on – are governed by special laws and/or by secondary legislation. Structured covered bonds are usually defined, by contrast, as those attempting to

replicate the characteristics of regulated covered bonds by means of contractual arrangements, while in fact they are based on general laws governing contracts and financial activities. The rationale for issuing structured covered bonds, even where legislation is already in place, is the greater flexibility allowed outside the regulatory frameworks, and particularly the possibility of using assets that are not eligible under the CRD. For instance, French banks issue covered bonds whose collateral is based on laws that implement the European Collateral Directive (2002/47/EC). However, structured covered bonds may carry levels of risk that are greater than those of covered bonds linked to one type of asset (mortgages or public loans) only. Principally, this risk is reflected in higher risk premia as compared with traditional covered bonds. In general, such structured securities could be

subject to lower liquidity in the secondary market.

The above classification relates ultimately to the distinction between EU-compliant and non-compliant covered bonds, i.e. whether the bonds meet the conditions laid down in the relevant Community legislation (the CRD and the UCITS Directive, see Box 2). Indeed, though only regulated covered bonds may qualify for higher investment limits and preferential treatment for capital purposes, not all regulated covered bonds are EU-compliant (as being regulated is not the only requirement). Furthermore, while CRD-compliant covered bonds are without exception UCITS Directive-compliant (because the CRD includes the definition of covered bonds provided by the UCITS Directive), the opposite is not necessarily true.

Finally, covered bonds may also be categorised on the basis of the legal and contractual arrangements governing cover pool “ring fencing” (reflecting different legal traditions in civil, company and bankruptcy laws). In this regard, a distinction may be drawn between “on-balance sheet” and “off-balance sheet” covered bonds, i.e. whether the segregation is achieved within the balance sheet of the issuer (or a consolidated entity) or through a special purpose vehicle (SPV) to which the assets are transferred. Off-balance cover pool and structured covered bonds are closely related, as structured covered bonds are often based on SPVs. However, there are also examples of regulated covered bonds based on SPV transactions (for instance, Italian and UK covered bonds).

### 4.3 ELIGIBLE ASSETS

Eligibility requirements for assets in covered bond transactions are still quite different among the various European jurisdictions, despite the harmonised definition in the CRD. Some differences are due simply to the fact that not all EU countries have completed the implementation process and are therefore expected to be removed. Others, by contrast, are due to a lack of harmonisation in national

regimes of assets’ classes, in particular with reference to mortgage and public sector financing. Some classes of assets are used just in few jurisdictions, and particularly ship loans are eligible collateral for German Pfandbriefe and Danish Skibskreditobligationer. From a risk management point of view, more “innovative” cover assets might be more exposed to economic swings and difficult to evaluate. The asset quality of, for instance, ships or aeroplanes is particularly dependent on economic cycles and has in the past been subject to severe cyclical fluctuations. Due to this cyclicity it is possible that such loans could be restructured, i.e. through the waiving of certain conditions and/or the deferral of payments. For cover assets with more volatile cash flows, calculating consistent and reliable present value figures may be challenging.

Covered bonds are typically based on homogeneous asset cover pools, consisting of either mortgages on property or loans to the public sector. This may result from the specialisation of the issuer bank (or of the bank originating the assets), or from rules that prohibit mixing heterogeneous assets.

To be eligible to be used in a cover pool, mortgages must not exceed the maximum LTV ratio set in the relevant regulations. In compliance with CRD requirements, maximum LTV ratios are generally set at 80% for mortgages secured by residential properties, and at 60% for mortgages secured by non-residential (i.e. commercial) properties. Some regulations set more stringent ratios, as in case of Germany, Luxembourg, Austria and Finland, which impose a 60% LTV ratio on both types of mortgages. The criteria governing the valuation of the properties must also be taken into account in order to gain a full understanding of actual LTV ratios: the value of the properties is determined, under different regulations, according to “prudent market value”, “mortgage lending value” or other criteria.

According to markets’ best practices and to CRD requirements, LTV ratios must be calculated for

each individual loan rather than as a portfolio average. This implies that it is not possible to include in collateral a loan with LTV ratio higher than required (e.g. a residential mortgage with an LTV ratio of 100%) just because other loans have lower LTV ratios. This notwithstanding, loans exceeding the LTV ceilings may be found in cover pools as a result of particular events (typically property devaluations). In such cases, the loans are either removed from the cover pool (and replaced with “good” assets, if needed to maintain the minimum collateralisation) or merely excluded from the calculation of the collateral value. The former solution is more protective of investors’ interests but might be onerous for the issuers, while the latter allows more flexibility in cover pool management. However, when the LTV ratios of loans are very close to the ceiling, just a small increase may present the credit institution with additional challenges in a situation where the economy is weakening and earnings are squeezed.

With reference to both mortgages and public sector loans, current geographical restrictions on property locations relate to – in addition to domestic location – the European Economic Area and to members of the Organisation for Economic Co-operation and Development. Multilateral development banks are commonly regarded as public sector. Some EU Member States do not allow mortgages on non-domestic properties as eligible assets.<sup>7</sup> Such exceptions may limit issuers’ ability to diversify their cover pools and may obstruct the mutual recognition of covered bonds among EU countries. Further, some regulations limit concentration on a single issuer to a given percentage of the cover pool (e.g. in Portugal exposure to a single bank must not be more than 15%; in Norway a general 5% limit is set). Concentration risk may be a significant issue when assets are poorly diversified, as may happen for public sector exposures, but is of lesser importance in relation to highly fragmented portfolios such as residential mortgages.

More recent legislation, as well as amendments to existing regulations, allow as eligible ABSs,

mortgage-backed securities (MBSs) and the like (such as securitisation funds). Usually, these assets are accepted within quantitative limits and under conditions relating to types, seniority and quality (e.g. credit rating) of the assets. ABSs and MBSs are not allowed as collateral in Denmark, Germany, Spain, Finland and Sweden.

“Substitute assets” (for instance, bank accounts and high-rated securities) are allowed as a temporary investment of the excess liquidity within the cover pool, in order to facilitate cash-flow management. However, such exposures may not exceed certain limits (e.g. 10% or 20% of the cover pool), sometimes depending on the counterparty’s credit rating. In this regard it is worth mentioning that this exposes covered bond holders temporarily to a change in cover pool characteristics and hence in the risk profile. An exception is Switzerland, where no limits are set on cash collateral within the cover pool.

#### 4.4 COLLATERALISATION AND RISK MANAGEMENT

Covered bond transactions involve different kinds of credit and financial risk, which may affect the value of the collateral and the cash-flow profile of the cover pool. The effects of an interplay of supervisory rules and market developments on risk management and control is a distinctive feature which clearly differentiates covered bonds from other funding instruments (such as RMBSs).

Eligibility requirements are designed to mitigate credit risk by preserving asset quality at all times and not only at an initial stage. The issuer bank has a duty to maintain the value and characteristics of the collateral at all times, so that cover assets are sufficient to satisfy the rights of bondholders in the event of issuer default. The issuer should be able to supplement the cover pool as far as needed to maintain a minimum collateralisation level. To achieve this

<sup>7</sup> “White Paper on the Integration of EU Mortgage Credit Markets”, European Commission, COM (2007) 807, 18 December 2007.

result the issuer should, for instance, replace non-performing with performing assets. In connection with this essential feature, it is often said that in covered bond transactions the cover pool is intrinsically “dynamic”, in contrast to the “static” nature of the assets underlying securitisation notes. Despite the high quality of the assets and the ongoing obligations of the issuer, it is possible that the assets’ quality deteriorates and the bank is no longer able to replace them. Taking such a worst-case scenario into account, regulations usually mandate for a minimum collateralisation level, aimed at ensuring that cover pool proceeds are sufficient to satisfy bondholders’ rights in any circumstance. Therefore, it is usually required that the overall value of the cover pool exceeds, or at least equates to, that of the outstanding covered bonds. While minimum mandatory over-collateralisation levels vary significantly among jurisdictions,<sup>8</sup> all permit voluntary over-collateralisation.

As far as liquidity and financial risks are concerned, mismatches between the maturities of cover assets on the one hand and outstanding covered bonds on the other, as well as between the corresponding cash flows, have to be managed. The average duration of cover assets is usually longer than that of covered bonds, as mortgage maturities may range from ten to thirty (and even more) years, while covered bonds have typically been issued with five to ten-year maturities (before mid-2007) or two to three-year maturities (for more recent issues). Furthermore, the cash flows of assets and liabilities may differ substantially, resulting in temporary deficits or excesses of liquidity within the cover pool, which need to be managed. That said, covered bonds are of course still a longer-term funding instrument than demand deposits and money market instruments, and can reduce the funding liquidity risk of a bank that might otherwise have funded long-term mortgage lending with short-term deposits and money market borrowing.

Finally, interest rate and currency risks should be taken into account. Provisions on asset-liability

management, as well as the management and control of financial risks, differ significantly among national regulations, making it very difficult to summarise them. In an attempt to categorise, however, maturity mismatches can be managed through two different approaches: first, by imposing restrictions on the financial characteristics of both assets and covered bonds, so that a close correspondence between them is ensured (as in Denmark, where a “balance principle” is traditionally established,<sup>9</sup> or Ireland, where the average duration of a cover pool consisting of public sector loans cannot exceed that of the covered bonds by more than three years); second, by allowing derivatives (e.g. interest rate swaps) with high-rated banking counterparties for hedging purposes. More often a mixed approach is applied, which consists of allowing derivatives (sometimes within quantitative limits: e.g. up to 12% of the cover pool in Denmark) while at the same time imposing tests on liquidity and other financial risks with a view to monitoring and reducing them to a satisfactory level. Clearly, the protection is effective only to the extent that the counterparties providing such hedges honour their obligations (counterparty risk). The benefits of hedging instruments may be limited by the uncertainties of the amortisation pattern of the assets in the cover pool, owing for instance to prepayments. Mortgage loans are subject to prepayments, exposing covered bond issuers to thinner margins, as prepayment penalties may not cover losses affecting the lender. Prepayment risks vary by country.

Industry experts suggest there is a lack of consistency in the information disclosed to investors in covered bonds, particularly on collateral pools. The most relevant information can be found in the securities prospectus, where issuers provide some aggregated information on the characteristics of the cover pool. Except as

8 In this respect the most protective legislation is that of Spain, which imposes a minimum over-collateralization of 25% for covered bonds secured by residential mortgages and of 43% for those secured by public sector loans.

9 See Frankel et al. (2004) “The Danish mortgage market”, BIS Quarterly Review, March.

set out in the law and in contractual agreements, the issuer has in general no obligation to keep the covered bond holders informed about the performance of the cover assets. Further, the bond holder has no right to inspect the internal records of the issuer. Investors can not initiate or conduct independent investigations into the composition or quality of the cover pool. Although data providers collect data on assets, which might be in the cover pool, a large part of the underlying assets are not captured and the structure of the data is often inconsistent – not only between different countries. In general, more detailed risk-orientated information on the cover pool would allow investors to better compare product offerings across markets and supervisors to better assign risk weights to covered bonds.

#### 4.5 INVESTOR PROTECTION IN THE EVENT OF DEFAULT

How investors are treated if the issuer bank defaults is crucial for assessing the overall quality of a covered bond regime. However, given the almost complete lack of experience of issuer default in the long history of covered bonds, legal opinions are the main available source of information. As regards default events, regulations on covered bonds are designed to meet the investors' expectation that: i) their investment will not accelerate as a consequence of the default, in the sense that terms of payment and the maturity of bonds will remain as agreed initially; ii) they will maintain a senior position on cover asset proceeds compared with all other, unsecured creditors of the bank.

The first goal is achieved by means of legal provisions under which, even against other general legal provisions or contractual agreements, terms of payment for capital and interest do not fall due if the issuer defaults or enters into a bankruptcy procedure. In principle these payments will continue to be made according to the original terms of the programme.

Asset segregation (ring-fencing) is the most common device used to achieve the second goal: if the issuer becomes insolvent, cover

assets are not included in the bankruptcy procedure; alternatively, a specific cover pool administrator is appointed, who acts in the interest of bondholders. In both cases, one of the main purposes of the structure of covered bonds, i.e. the preferential claim of bondholders against cover assets, is pursued by maintaining bondholders separate from all other, unsecured creditors. In some jurisdictions (such as Spain and France) other mechanisms, with similar results, consist of bondholders being included within the general bankruptcy procedure while maintaining a preferential claim (senior to other creditors) over cover assets.

Where asset segregation is achieved by transferring assets to an SPV – placing assets off-balance sheet – the “bankruptcy remoteness” of the SPV is important for an effective asset segregation. Bankruptcy remoteness means, in this context, that legal and bylaw provisions make it unlikely, if not impossible, that the entity (i.e. its segregated assets) will enter a bankruptcy procedure if the parent company (say, the issuer bank) files for bankruptcy. Therefore, off-balance sheet structures require, in a sense, a further level of segregation, to which legal mechanisms tested in securitisations are often applied.

As dual-recourse instruments, covered bonds usually give bondholders a claim against the issuer's estates, in addition to specific cover assets. While the preferential claim only applies to cover assets, the claim against other assets of the bank is usually ranked *pari passu* with those of other unsecured creditors (i.e. without seniority). Technical devices, such as the appointment of a special representative of the class against the liquidation procedure or the “substitution” of a third party in place of bondholders, are in place in some countries to facilitate the access of investors to the bankruptcy procedure.<sup>10</sup> In some jurisdictions, however, privileged bondholders have no

<sup>10</sup> As an exception, it is worth mentioning that the holders of Spanish *cédulas hipotecarias* have a privileged claim over the whole portfolio of mortgages, and not just a portion of them, should the issuer become insolvent.

recourse to the issuer in event of default, in which case the bondholders' position becomes more similar to that of investors in ABSs.

Even though experiences of bankruptcy are lacking, it is foreseeable that the default of a bank would affect in some way its actual ability to make timely payments of interest and capital according to the original agreements. In fact, despite provisions aimed at preventing modifications of the programme, it is likely that in such an event the issuer would not be able to maintain the quality of the assets or to manage cash flows and maturity mismatches effectively. Therefore, when a default occurs, and unless the obligation to make payments and to manage the cover pool is taken over by other credit institutions, covered bonds are in fact expected to "accelerate" and cover assets to be liquidated in order to satisfy bondholders.

#### 4.6 DEPOSITOR PROTECTION IN THE EVENT OF DEFAULT

The protection of unsecured creditors is a relevant issue under various regimes. As noted, the European regulatory landscape has evolved to accommodate covered bond issuance, and although the various EU directives have levelled the playing field for issuers of covered bonds, several national differences remain.

One such difference is how the national authorities deal with the risk to a firm's unsecured creditors, in particular depositors, having available a smaller, and potentially lower-quality, pool of assets to meet their claims. It is in the interests of the regulatory authority, and the wider financial system, to ensure that a covered bond issuance programme does not impair the issuing institution's balance sheet. The approaches adopted by Italy and the United Kingdom illustrate two possible ways of ensuring the balance sheet of the issuer remains robust. In the case of Italy, to protect creditors other than covered bond holders the regime stipulates the maximum amount of assets to be transferred in relation to the level of capital ratios, with a minimum total capital ratio of 9%.

Table 2 Transfer limits in Italy

	Capital strength	Transfer limits
Band "a"	Total capital ratio $\geq$ 11% and Tier 1 ratio $\geq$ 7%	No limit
Band "b"	Total capital ratio $\geq$ 10% and $<$ 11% and Tier 1 ratio $\geq$ 6.5%	Transfer permitted up to 60% of eligible assets
Band "c"	Total capital ratio $\geq$ 9% and $<$ 10% and Tier 1 ratio $\geq$ 6%	Transfer permitted up to 25% of eligible assets

Table 2 shows the respective limits imposed on the amount of eligible assets an issuer can transfer to an SPV.<sup>11</sup>

The above thresholds are based on simulations aimed at estimating the degree of protection provided to depositors and other unsecured creditors in the event of default of a bank. The assumption is that, as a result of over-collateralisation, the assets available to meet the claims of the depositors are reduced more than proportionally in respect of those that secure covered bonds. Therefore, the depositors' position is equivalent to a reduction in the capitalization level of the bank. On the basis of realistic assumptions on the risks of both segregated and non-segregated assets, the limits on asset segregation have been set so that the capitalisation level does not decrease, under any circumstances, below 8%.

Under the UK regime it is seen as appropriate to analyse banks' covered bond issuance in terms of materiality and whether issuance poses sufficient additional risk to the interests of depositors to warrant the bank holding additional capital under the Pillar 2 assessment.

As from 23 October 2008, the Financial Services Authority expects to discuss with firms, in advance, all plans for covered bond issuance or

<sup>11</sup> Italian secondary legislation (Ministerial decree No 310/2006) defines eligible assets, in compliance with the provisions of Directive 2006/48/EC.

any other significant new asset encumbrance. According to the new guidance, case-by-case supervisory assessments may result in supervisory outcomes including additional Pillar II capital charges, a cap on covered bond issuance and/or a limit on the terms of issuance. Supervisory assessments will be based on various factors including, among others, the volume of encumbered assets as a proportion of total assets and the level of over-collateralisation.<sup>12</sup>

Although Italy and the United Kingdom provide examples of explicit limits or triggers relating to the level of covered bond issuance by a specific institution, other countries also take into consideration the balance sheet composition of the issuers through their day to day supervision of banking institutions and can take remedial action if necessary.

#### 4.7 CREDIT RATING AGENCIES

The dual nature of covered bonds requires clarification as to how the isolation of assets allows credit enhancement and how the financial soundness of the issuer is factored in. There are some divergences in approach among the major rating agencies (see Chart 5). While most agencies take the view that the credit risk of the covered bonds is to some extent linked to the financial condition of the issuer, Standard & Poor's uses a straight structured finance framework where the issuer rating does not appear as a key analytical factor.

As long as the issuer is not in default, it provides the interest rate and currency risk protection as well as the liquidity necessary to ensure timely payments to all of its creditors, including covered bond holders. The overall consensus is to consider the case in which the issuer defaults. This leads to an analysis based on three points: (1) the issuer rating as a proxy for its financial soundness; (2) the quality of the underlying collateral and its ability to generate cash flows; and (3) the extent to which the cover pool may be considered "de-linked" from the issuer. The last of these is the key point. Given the issuer rating, what is the highest covered bond rating

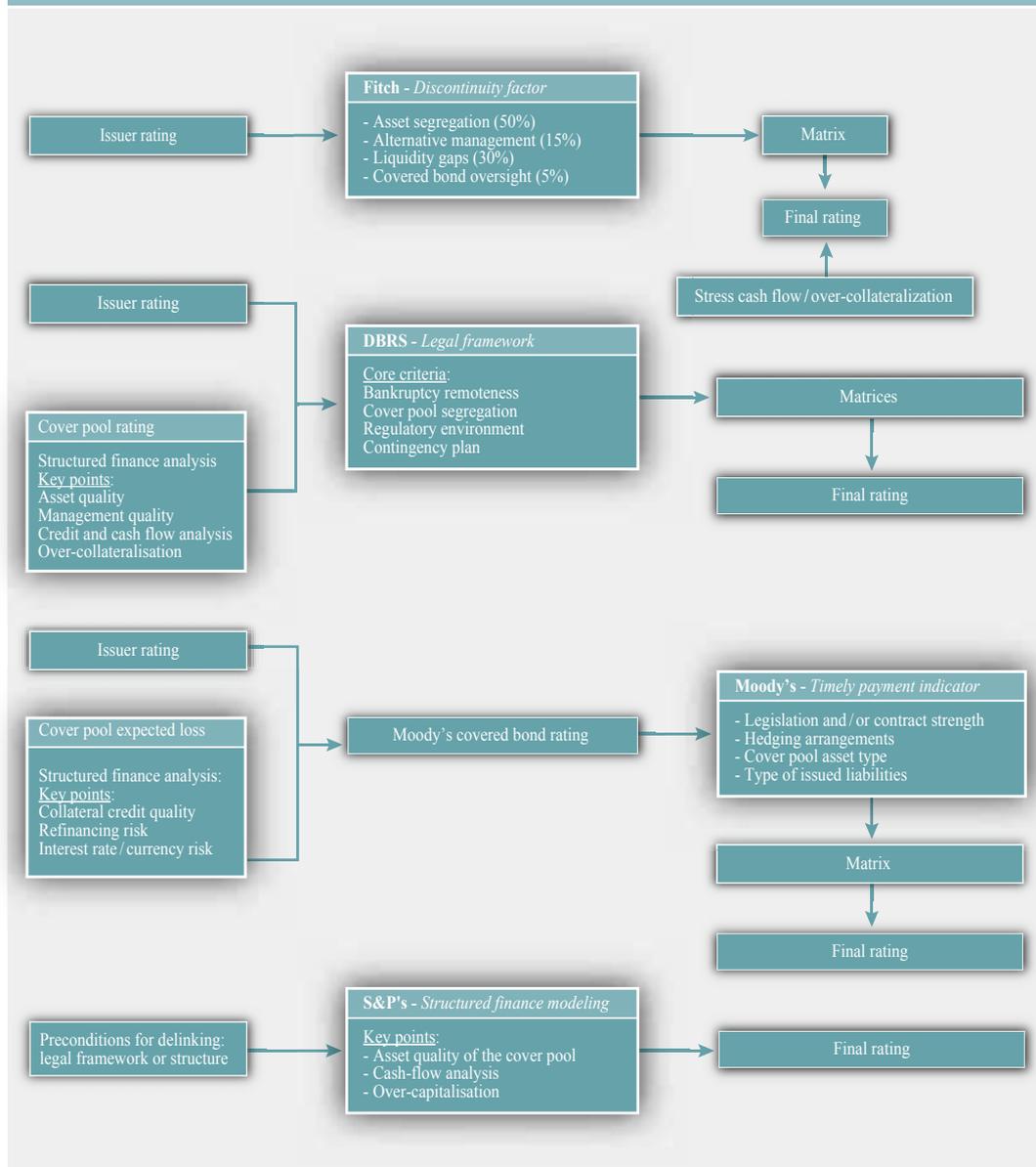
achievable? There exist clear differences among the four rating agencies.

Since February 2007 Fitch has been using a "discontinuity" factor that is aimed at indicating the extent to which timely payments from the covered bond may suffer from a default of the issuer. It is broken down into four components: i) asset segregation (with a 50% weighting); ii) alternative management (15%); iii) liquidity gaps (30%); and iv) covered bond oversight (5%). The result is translated into a continuous variable ranging from 0% to 100%, while most scores range from 6% to 35% (0% means a perfect isolation and thus a default risk-free structure). Fitch's covered bond rating methodology is based mainly on a matrix plotting issuer ratings against these discontinuity factors. Stress cash-flow analysis and an over-collateralization assessment are then undertaken.

Moody's and DBRS use a more sequenced approach, in which they consider discontinuity in the last step. Moody's focuses on the likelihood of a timely payment being made to covered bond holders following the default of the issuer bank. The primary drivers are recognised to be: i) the strength of covered bond legislation and/or contracts backing the covered bond programme, ii) the hedging arrangements in the programme, iii) the type of assets in the cover pool and iv) the type of liabilities issued under the programme. Since March 2008 this likelihood has been measured in terms of a six-rank categorical variable, ranging from "very improbable" to "very high". For a given sponsor bank rating level, each rank or "timely payment indicator" (TPI) determines the maximum rating that a covered bond programme can achieve. But this step is designed to be performed after a joint-default analysis has produced a covered bond rating. This overall constraint may then be seen as less central, at least in the way Moody's introduces its methodology. To a lesser extent, the same may be said of DBRS. De-linking

12 For further details see: [http://www.fsa.gov.uk/pubs/international/cov\\_bond.pdf](http://www.fsa.gov.uk/pubs/international/cov_bond.pdf)

Chart 5 Covered bond rating methodologies



is introduced with the help of a qualitative assessment of the legal framework (“very strong”, “strong”, “adequate” or “modest”). The final covered bond rating is given by matrices plotting issuer rating against cover pool ratings, for each rank of legal framework. These matrices provide a better picture of the interplay between the different steps of the analysis than in the case of Moody’s.

Unlike the other rating agencies, Standard & Poor’s does not explicitly mention the issuer rating as a key analytical factor for the rating of covered bonds. Its approach focuses on conditions for de-linking the covered bond rating from the issuer’s financial soundness. The key analytical factors are the legal framework (which determines the extent to which a covered bond holder could be affected by the insolvency

of the issuing bank), the asset quality of cover pools, the cash-flow analysis and the over-collateralisation. This perspective is aimed at securing the relevance of a structured finance analysis and leads to the use of a quantitative covered bond model (the Covered Bond Monitor or CBM) with strong affinities with other structured product valuation.

As shown above, two broad types of approach are followed by rating agencies in rating covered bonds. Moody's appears to value an approach in terms of expected loss as opposed to default probability, but the extent to which this difference matters is open to discussion. For example, Fitch focuses on default probability, but recoveries are taken care of through a notching policy.

Rating agencies differ in their clarification processes. The fact that Standard & Poor's considers the rating of covered bonds essentially as a standard structured finance product valuation motivated the use of a quantitative model. Given the broad reconsideration of structured finance ratings, this should shortly lead to more communication on inputs and assumptions. The other agencies tend to favour the choice of providing synthetic de-linking scores, and this can make disclosing input information less natural. Giving detailed underlying information remains an overall avenue for improvement. For example, Fitch has launched privileged access to covered bond performance (S.M.A.R.T) information. "Discontinuity" tables allow users to determine covered bond rating triggers when action is taken on the issuer rating. However, the issuer rating remains only a step in a complex analysis. Making the mechanics of this complex analysis clear to non-expert users is a challenging task: transparency is still a work in progress.

#### 4.8 REGULATORY DEVELOPMENTS IN EU COUNTRIES

The search for yield that characterised the financial markets in the years preceding the current financial turmoil has led spreads to

historically low levels. In the context of risk mispricing, the extra safety of covered bonds issued in countries with more stringent covered bond frameworks was not properly rewarded. Indeed, a study conducted by the Bank for International Settlements (BIS) for the period between 2003 and 2006 found a weak relationship between spreads and the legal framework. Some major regulatory developments in selected EU countries are described below.

In Germany, discussions regarding a review of the covered bond regulation originally started when the emergence of less stringent covered bond frameworks in other countries was brought to the attention of the German interest groups. The Association of German Pfandbrief Banks was concerned about the implications of the conservative structure of the German covered bond model. Discussions at the time focused on increasing the LTV ratio for residential real estate mortgages and expanding the geographical scope of eligible cover assets. Since the onset of the sub-prime mortgage crisis, plans for raising the LTV ratio or including MBSs in the cover pools have been dropped. The discussion now focuses on technical aspects and the explicit requirements for liquidity risk management, information on derivatives and covered bonds based on aeroplanes. New regulations are expected to be in place by 2009.

A similar development took place with new covered bond legislation in the United Kingdom. The final legislation was quite different to that originally envisaged by market participants and the version when the consultation period was launched. Consultation coincided with a period of market turbulence, and many of the responses were informed by these events. Respondents stressed that in order to deliver a liquid product in which investors could have a high degree of confidence, the legislation needed to focus on quality rather than flexibility. The Treasury therefore made a number of amendments reflecting the list of eligible property, restricting the location of eligible property and the inclusion of a high-

quality market. Credit analysts welcomed the changes made compared with the first proposal published in July 2007, as the structure and the criteria included to ensure a high quality of covered bonds are now much more in line with the standards of other special legislative frameworks across Europe.

In Spain, changes to the covered bond framework in order to refine the Spanish mortgage market and to provide additional comfort to issuers and investors have been implemented in December 2007. To enhance the quality of covered bonds in Spain, the new legislation introduced the possibility of including replacement assets and swap derivatives in the portfolio to increase the liquidity of covered bonds. Further, it aimed at increasing creditworthiness through a reduction of the minimum LTV ratio and higher over-collateralisation. Issuers are now required to have a special registry to file and identify all mortgages included in a particular portfolio as collateral in covered bond issues. The recent amendments have not been a response to the credit turmoil since they were already in preparation before 2007 even if they have been very timely.

All these regulatory changes will probably contribute to more harmonised legal frameworks for covered bonds, which could increase European market integration. That, in turn, would have implications for monetary policy and financial stability in Europe. In the absence of a European legal initiative, however, it is difficult to imagine regulatory competition alone could be enough to bring about the optimal level of harmonisation in the covered bond market.

A market initiative leading to the definition of a benchmark concept could be a promising avenue to explore. The recent attempt on the part of the ECBC to define what is meant by a covered bond is a good example of what can be achieved in this way. Although the current market turmoil has raised the need for regulatory intervention in some fields, a special

European regulation has not been envisaged as a solution to the problems experienced in this market during the turmoil.

## 5 PERFORMANCE OF COVERED BONDS DURING THE MARKET TURMOIL

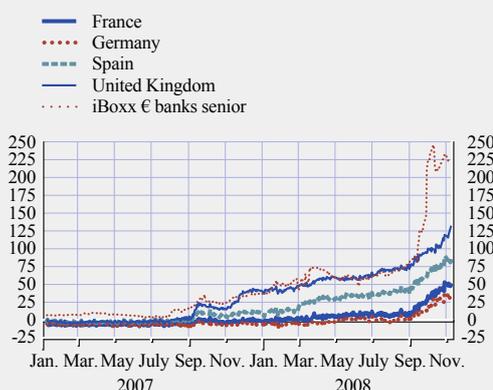
Although covered bonds as dual-recourse instruments are among the safest investments available, they have not escaped the effects of the financial market turmoil since mid-2007. That said, the impact has been considerably less than for single-recourse instruments such as senior bank debt or ABSs, in terms of both disruption to issuance and spread widening. The following analysis focuses on the jumbo covered bond market, where most data is available.

### 5.1 RECENT EVENTS IN THE SECONDARY AND PRIMARY MARKETS

After the eruption of the financial turmoil, increased risk aversion on the part of investors put the secondary covered bond market under pressure, which led to a general widening of swap spreads from August 2007, but to a lesser extent than for senior financial debt (see Chart 6). As the financial turmoil intensified in September 2008, spreads in secondary markets further widened and covered bonds which largely

Chart 6 Volume-weighted swap spread of covered bonds by country of issuer

(January 2007 – November 2008; basis points)



Sources: Bloomberg, iBoxx and BSC calculations.

remained unaffected by the turmoil until mid-September were also hit by the renewed wave of financial turbulence.

After the start of the turmoil, a rise in market volatility led to an increase in the value at risk of market participants' portfolios, including those of market makers. The situation for market makers became even more challenging when the volatility spilled over to the government bond market. Finding suitable hedging instruments became complicated and aggravated market making difficulties. However, the spread widening did not affect all jumbo covered bonds equally. This reflects various additional investor concerns related to country, issuer or framework-specific characteristics of the respective covered bonds.

The uncertainty surrounding covered bonds was heightened when market liquidity came under pressure. As a consequence, market participants came to agree on further flexibility in the market making. Table 3 traces the efforts made to ensure the continuation of market making. As a first step, market makers traded at larger bid/ask spreads in August 2007. As the difficulties persisted, calls for a division of the market

were voiced in September 2007. The events culminated on 21 November 2007 when the '8 to 8' Market Makers and Issuers Committee of the ECBC agreed to cease market making. Market making was taken up again after a brief pause at three times the normal spread but came under pressure again in January 2008. This time the agreement involved a division of the market making into different minimum interbank ticket volumes and bid/ask spreads, which were determined by the swap spread of the respective covered bond. Covered bonds with a swap spread of over 20 basis points were traded with lower interbank volumes and larger bid/ask spreads. In spring 2008 interbank market making had largely ceased, while market makers continued to trade for their own clients. A few market makers have indicated, however, that they will continue quoting prices in the interbank market for some covered bonds. Overall, the uncertainty surrounding the interbank market making has potentially contributed to rising liquidity premia for covered bonds. Interbank market making resumed on 1 September 2008, however only a small increase of trading volume has been registered and by the cut-off date for this report (mid-November), liquidity in the secondary market for covered bonds remained low.

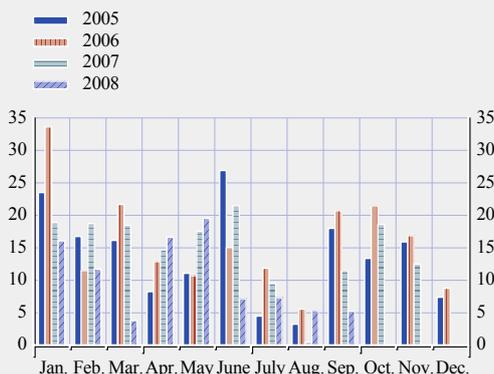
**Table 3 Developments in interbank market making since August 2007**

Time	Bid/ask spread	Minimum ticket volume	Main developments in market making
Until August 2007	Single	EUR 15 million	Market making under "normal" conditions
16 August 2007	Triple		
30 August 2007	Double		
6 September 2007	Double		Discussion on the division of the market into double and triple (bid/ask) spread segments; proposal declined
21 November 2007	-		Market making in interbank trading suspended
26 November 2007	Triple	EUR 5 million	Resumption of market making with triple bid/ask spreads
17 December 2007	-		Regular "winter break" in market making
7 January 2008	Double	EUR 15 million	Resumption of interbank market making with double bid/ask spreads
11 January 2008	1) Double	EUR 15 million	Division of market at a swap spread of 20 basis points
	2) Triple (from 20 basis points)	EUR 5 million	
March-August 2008			Market making in interbank trading largely ceased
1 September 2008	Triple	EUR 15 million	Resumption of market making with triple bid/ask spreads

Sources: Bayerische Landesbank and the Association of German Pfandbrief Banks.

**Chart 7 New issuance of jumbo covered bonds**

(January 2005 – October 2008; EUR billions)

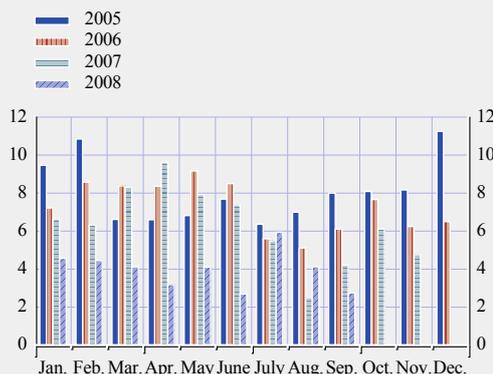


Sources: Bayerische Landesbank, Bloomberg, Reuters and BSC calculations.

Note: there was no new issuance in October 2008.

**Chart 8 Maturity of jumbo covered bonds at issue**

(January 2005 – October 2008; years)



Sources: Bayerische Landesbank, Bloomberg, Reuters and BSC calculations.

Note: there was no new issuance in October 2008.

The developments in the secondary market spilled over to the primary market. Before the turmoil, covered bond supply had increased steadily, driven by the funding needs of banks. The difficulties banks encountered in the money market to obtain funding increased their desire to tap the covered bond market. However, issuance in the primary market was sluggish in the first few months of 2008 and has only recuperated since April 2008, with issuance above its 2007 level (see Chart 7). After the intensification of the financial turmoil, the issuance of covered bonds stalled and there was no issuance of jumbo covered bonds in the period between mid-September and mid-November. Since the beginning of the year a few issuers facing a lack of demand have had to close their books. In 2008, issuers accepted relatively large primary spreads to equal demand and supply. In addition, issuers have shortened the maturity of their issues to obtain more favourable conditions (see Chart 8).

The drop in issuance has been most severe for issuers which saw the spreads on their covered bonds rise. This is supported by the evidence presented in Chart 9. Up to October 2008, some issuers largely refrained from tapping the primary market; in particular, UK and US issuers issued no covered bonds, while issuance by Spanish issuers was reduced in relative terms

in the first ten months of 2008 (see Chart 9). However, the relatively large number of new entrants in the covered bond market suggests that the concern has been largely limited to certain traditional issuers.

Looking forward, the measures announced by governments across Europe in response to the intensification of the financial turmoil, and in particular government guarantees provided for new issues of bank debt may also have implications for the covered bond markets in the period ahead. At the time of the finalisation of this report, the uncertainty surrounding the details of government measures rendered the assessment of potential implications rather difficult. According to the preliminary assessment provided by market participants,<sup>13</sup> it is possible that, in the near term, risk averse investors may find government guaranteed bank debt relatively attractive to those covered bonds which do not benefit from an explicit government guarantee.<sup>14</sup> However, covered bonds are likely to be issued again once general investor confidence returns and dislocations in funding markets ease substantially.

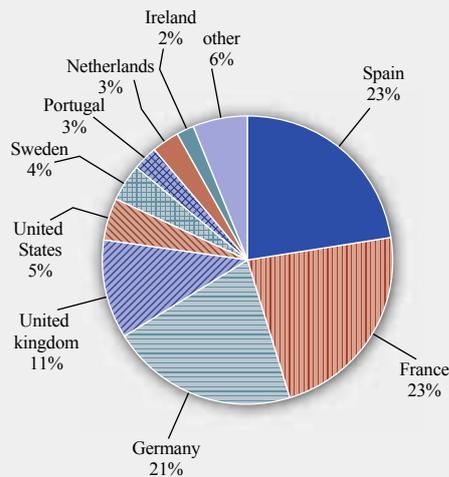
<sup>13</sup> See Merrill Lynch Covered Bond Bi-Monthly: Report, 'October: Emotions are clouding judgement', 3 November 2008.

<sup>14</sup> In many cases covered bonds are not explicitly included among the debt instruments guaranteed by governments.

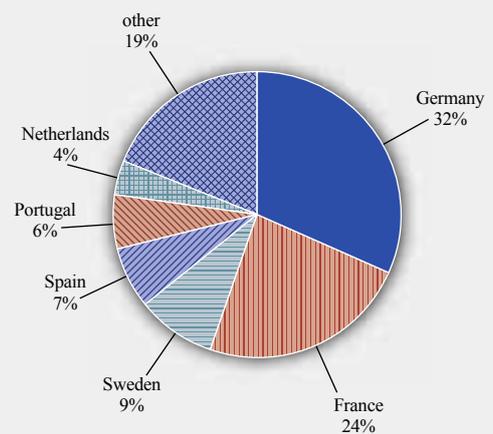
**Chart 9 Issuance of jumbo covered bonds by country**

(percentages)

**2007**



**2008 January-October**



Sources: Bayerische Landesbank, Bloomberg, Reuters and BSC calculations.

## 5.2 FACTORS BEHIND THE DIFFERENT PERFORMANCE OF COVERED BONDS

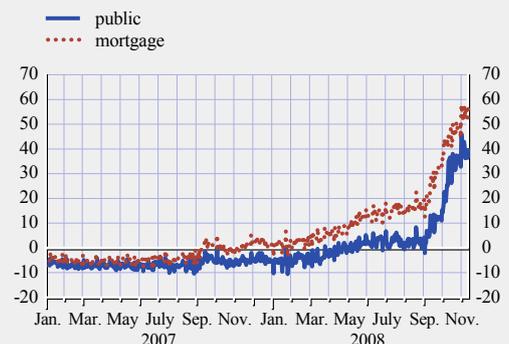
A first potential source of the different performances of covered bonds can be traced to developments in real estate markets which have raised investor concerns about the credit risk inherent in covered bonds. Covered bonds backed by mortgage loans issued in countries in which the real estate market developed dynamically in the past have suffered the greatest impact. Also, until mid-September 2008, the divergence of swap spreads of mortgage versus public covered bonds indicated higher risk discrimination by investors (see Chart 10). However, the differentiation between these two types of covered bonds appeared to be less relevant in the period between mid-September and mid-November as spreads on both mortgage and public covered bonds increased sharply.

The concern about credit risk may have been furthered by downgrades of ratings of some issuing banks. A second cause of the widening of spreads can be traced back to the diversity in covered bond types. Indeed, in recent years, mortgage lenders in a number of countries

have arranged structured covered bonds that replicate the features of traditional covered bonds using financial engineering techniques. The complexity of structured covered bond lowers their transparency with regard to the cover pool and investor protection. The market turmoil has led to a reduction in liquidity for structured covered bonds. Consequently, until mid-September 2008, the spreads of these bonds have widened relative to legal-based covered bonds

**Chart 10 Swap spreads for mortgage and public covered bonds**

(January 2007-November 2008; basis points)



Sources: Bloomberg and BSC calculations.

**Chart 11 Spreads for legal-based and structured covered bonds**

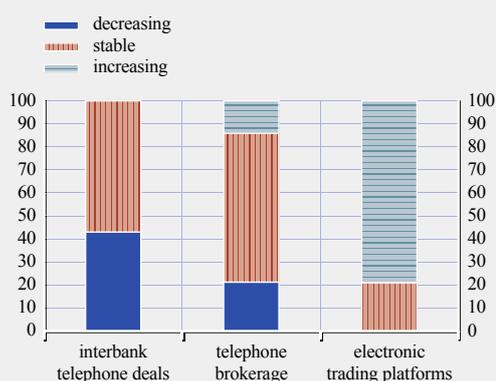
(January 2007–November 2008; basis points)



Sources: Bloomberg and BSC calculations.

**Chart 12 Future importance of trading media (expectations of market makers)**

(percentages)



Source: Association of German Pfandbrief Banks.

(see Chart 11). The differentiation between legal-based and structured covered bonds appeared to decrease in importance between mid-September and mid-November as spreads on both types of covered bonds increased sharply.

Apart from the adverse market conditions for issuers, the investor base has been stressed as an important factor. The drying up of international investor demand has made a stable investor base crucial for primary market placement and secondary market back-stop support. Indeed, owing to the stronger reliance of issuers from some countries on international investors, primary market issuance may have become more difficult, while issuers from other countries may have benefited from a stronger domestic investor base which has proved relatively resilient. As a consequence, traditional issuers have changed their funding strategies, making private covered bond placements or using taps on already outstanding covered bonds. The shift to private placements may potentially lead to a reduction in the market share of jumbo covered bonds.

### 5.3 PROPOSALS FOR IMPROVED MARKET EFFICIENCY

In the follow-up to the adverse events in the jumbo covered bond market, proposals have

been made to improve the market making with a view to increasing transparency and resilience. The secondary market is currently dominated by OTC trading. The lack of transparency in this market has been cited as reason for market making difficulties and for the opportunistic behaviour of some market participants. For example, a number of market makers have used the commitments of other market makers to offload their covered bond positions. As a consequence, the debate currently revolves around moving the trade in covered bonds to a trading platform on a “request for quote” basis.

Already in 2005, a survey by the Association of German Pfandbrief Banks on the future importance of trading media showed that 79% of German Pfandbrief market makers saw an increasing importance of electronic trading platforms (see Chart 12).

However, the performance (measured in bid/ask-spreads) of these platforms and the volume traded electronically has not reached the level of the telephone OTC market. The most important recent platform is EuroCreditMTS. In general, prices are quoted for ticket volumes of €10 million and liquidity is provided for a volume of €120 million in individual securities. Compared with traditional telephone market-

making, the bid/ask spreads on EuroCreditMTS are somewhat higher; only for residual maturities of six to eight years have they been identical at 8 cent.

In addition to the interbanking trading platforms, there are three customer platforms (Tradeweb, BondVision and Bloomberg Trading) with even more limited market liquidity.

At the early stages of the turmoil, electronic multi-dealer platforms broke down, which can be linked to their relatively stringent trading rules.<sup>15</sup> Against this background, the debates on the proposal for a general trading platform have intensified among market participants.

First, electronic trading itself is not a key factor for generating liquidity. Nowadays, trading is supported electronically in nearly every market, even the OTC market, where orders are routed electronically. In markets with strong informational asymmetries, any system will be illiquid when trading is anonymous. This characteristic of an anonymous market is known as a winner's curse problem (i.e. market participants never know whether a potential counterparty might be better informed and therefore try to protect themselves). This argument also holds when markets are supported by electronic order routing or electronic trading systems and when markets have a central counterparty (CCP). The CCP deals with the counterparty risk, but not with the adverse selection costs of trading. The system therefore needs to convey information about the identity of the counterparty (at least to the market intermediaries).

Second, more transparency potentially reduces adverse selection costs, but it could also lead to a reduction in incentives to acquire information and therefore hamper information revelation in the market. Market participants argue that more transparency might reveal their inventory position, and thus they might be worse off. The opaque phone market in its current state can therefore be interpreted as the evolutionary outcome of the participants' interests.

Finally, the provision of market making is a question of incentives. There is clearly an incentive to provide liquidity in the secondary market when participation as an underwriter in primary market is sufficiently profitable. Nevertheless, in times of stress this incentive may prove insufficient. The introduction of explicit market-making fees may present a viable addition to a centralised trading platform. However, the payment of the fees is likely to remain with the issuers, which may therefore be hesitant to adopt such a system.

Overall, electronic trading platforms may raise transparency and limit opportunistic behaviour but will not solve the incentive problems in secondary market making during periods of stress.

An alternative proposal directly addresses the opportunistic behaviour of some market participants. Typically an underwriter assumes the market making not only for the specific covered bond that is currently issued but for all outstanding jumbos of the respective issuer. This means that the top market makers trade in around 200 to 300 covered bonds, while at the other end of the scale some trade only in a handful of covered bonds. As a consequence, however, top market makers can receive quote requests on a large number of bonds but obtain only a few quotes from the smallest market makers. In order to reduce this asymmetry there have been demands to exclude market makers who only assume market making for a few bonds.

## 6 CONCLUSIONS

Covered bonds have proven to be a relatively stable and low-cost medium to long-term

<sup>15</sup> For example, EuroCreditMTS requires fixed bid/ask spreads, fixed volume tickets and continuous pricing. The current proposals for general trading platform therefore envisage a "request for quote" system. Market makers voice their concern that continuous pricing could lead to an excessive number of price requests. The current proposal thus takes this concern of market makers into consideration.

funding source for credit institutions. The covered bond market has benefited from a strict legal and regulatory framework. In the past, even in the few cases where issuers were financially strained and faced downgrades or even default, the issuing institutions were bought or merged with sound financial institutions. Hence, in general the impact on outstanding covered bonds was negligible. The asset class has therefore been resilient to such shocks.

During the market turmoil, in particular until mid-September 2008, the relative resilience of covered bonds has been demonstrated, especially compared with other forms of asset-based finance – securitisation – associated with the “originate-to-distribute” model. From a financial stability perspective, a crucial difference between covered bonds and securitisation is that covered bonds do not involve credit risk transfer. This gives the originating bank a stronger incentive to conduct proper credit evaluation when granting loans and proper credit monitoring of borrowers during the life of the loan. The issuing bank can still incur losses on the loans and has to hold capital against this risk. Funding costs, on the other hand, are typically lower in the case of covered bonds than with securitisation. The lack of credit risk transfer and the resulting implications for capital needs and funding costs have significant effects on risk management incentives. To the extent that information asymmetries affect mortgage lending (e.g. if a local bank knows more than international capital market investors about local customer credit risk and local property market valuation), then the incentives of covered bonds might be more conducive to prudent lending and investor confidence throughout the business cycle.

Another key difference between securitisation and covered bonds is transparency with regard to exposures. Much of the sub-prime mortgage losses reported by EU banks arose in off-balance sheet SPVs, which had been practically undetectable in banks’ published accounts. Covered bond issuance, on the other hand, typically remains on-balance sheet, as regards both cover pool assets and covered

bond liabilities. And covered bond legislation provides transparency as regards the issuer’s obligations with respect to maintaining the adequacy of the cover pool. Although there are risk management issues for the issuer, there is greater transparency as regards these.

From the perspective of funding liquidity risk, the current turmoil has also highlighted the importance of diversified funding structures. In this respect, covered bonds can provide diversification benefits for banks in their liquidity management. In particular, they provide a medium to long-term financing resource and are well-suited to fund a bank’s fixed rate mortgage loan portfolio. Issuing covered bonds enhances a bank’s ability to match the duration of its liabilities to that of its mortgage loan portfolio, enabling a better management of its exposure to interest rate risk. Other secured funding products, such as repos, are unlikely to have the same asset-liability matching attributes offered by covered bonds. All these issues are all the more important today given the increasing role of short-term refinancing in banks’ balance sheets. In certain instances, rolling over short-term funding might be less expensive or better in terms of reputation, but this could pose challenges to the management of assets and liabilities at some point. In addition to improving banks’ structural asset-liability mismatch, covered bonds offer a wider geographical diversification, as issuers tap into a larger European market. Although the investor base of the covered bond market has broadened in recent years, banks are still key investors, and domestic financial institutions continue to dominate in some countries. In general, a strong domestic investor base has proven to be a stable source of demand, also during times of uncertainty. At such times, a higher risk aversion on the part of investors may lead to increased home bias. It should be noted that depending on the structural characteristics of each country, institutions could consider different options for obtaining funds, and these funding options could prove still attractive according to other factors. Furthermore, in a weak domestic macro-financial environment,

with banks under pressure and investment funds receiving redemption calls from investors, this could lead to lesser demand for covered bonds from domestic banks and investment funds.

Looking forward, similarly to other funding instruments, the outlook for covered bonds is likely to remain challenging in the near-term as long as wholesale funding markets continue to be disrupted. Beyond the near-term, however, once general investor confidence returns and dislocations in funding markets ease, covered bonds are likely to be issued again.

Overall, covered bonds possess a number of attractive features from the perspective of financial stability. Covered bonds as dual-recourse instruments are less risky than most other bank securities and also increase banks' access to long-term funding, thereby mitigating liquidity risks. In the context of the ongoing financial market turmoil, it is important to stress that, on the whole, covered bonds have proven themselves relatively resilient, in particular in comparison with securitisation. Therefore, the preservation of the proper functioning of covered bond markets is of great interest both to market participants and regulators.

# STATISTICAL ANNEX

Table AI Covered bond statistics for EU countries

(in EUR millions)					
<i>Outstanding</i>	2003	2004	2005	2006	2007
<b>Total covered bonds outstanding</b>					
Outstanding covered bonds backed by public sector loans	869,714	858,645	856,886	884,038	858,642
Outstanding covered bonds backed by mortgages	575,682	647,485	751,958	930,441	1,107,546
Outstanding covered bonds backed by ships	10,087	9,542	10,585	11,341	13,136
Outstanding covered bonds backed by mixed assets	34,530	41,350	50,040	61,930	80,097
<b>Total outstanding</b>	<b>1,490,067</b>	<b>1,557,023</b>	<b>1,686,508</b>	<b>1,887,750</b>	<b>2,059,421</b>
Outstanding Jumbo	704,140	779,485	878,416	1,004,206	1,098,489
Outstanding non-Jumbo	775,178	766,787	808,091	883,544	960,932
<b>Total outstanding</b>	<b>1,490,067</b>	<b>1,557,022</b>	<b>1,686,507</b>	<b>1,887,750</b>	<b>2,059,421</b>
Total outstanding public placement	1,000,935	993,577	1,110,182	1,245,465	1,513,639
Total outstanding private placement	391,062	446,138	433,280	485,822	537,255
<b>Total outstanding</b>	<b>1,489,696</b>	<b>1,556,231</b>	<b>1,685,273</b>	<b>1,885,889</b>	<b>2,050,894</b>
Outstanding denominated in euro	1,212,927	1,252,336	1,336,404	1,323,250	1,544,127
Outstanding denominated in domestic currency	221,930	246,367	287,926	352,716	402,360
Outstanding denominated in other currencies	44,461	47,568	62,178	57,181	104,406
<b>Total outstanding</b>	<b>1,490,068</b>	<b>1,557,021</b>	<b>1,686,507</b>	<b>1,857,920</b>	<b>2,050,893</b>
Outstanding fixed coupon	1,212,368	1,237,768	1,359,429	1,511,862	1,768,161
Outstanding floating coupon	155,423	177,149	176,749	201,188	242,082
Outstanding other	24,577	24,830	25,556	20,098	40,651
<b>Total outstanding</b>	<b>1,490,067</b>	<b>1,556,263</b>	<b>1,686,507</b>	<b>1,887,750</b>	<b>2,050,895</b>
<b>Issuance</b>					
New issues of covered bonds backed by public sector loans	182,482	162,269	179,523	171,361	150,960
New issues of covered bonds backed by mortgages	202,080	195,187	268,940	296,404	325,730
New issues of covered bonds backed by ships	2,421	1,785	3,579	3,334	3,911
New issues of covered bonds by mixed assets	9,600	11,150	13,150	17,263	23,682
<b>Total issuance</b>	<b>396,583</b>	<b>370,391</b>	<b>465,192</b>	<b>488,362</b>	<b>504,283</b>
Issuance Jumbo	114,277	117,440	141,887	190,422	162,274
Issuance non-Jumbo	279,475	252,951	319,500	297,940	342,008
<b>Total issuance</b>	<b>396,583</b>	<b>370,391</b>	<b>465,192</b>	<b>488,362</b>	<b>504,283</b>
Total issuance public placement	313,596	290,469	369,903	370,728	386,466
Total issuance private placement	79,768	79,509	91,029	117,017	117,817
<b>Total issuance</b>	<b>396,195</b>	<b>369,978</b>	<b>464,737</b>	<b>487,745</b>	<b>504,283</b>
Issuance denominated in euro	283,572	270,698	284,273	339,025	313,696
Issuance denominated in domestic currency	95,587	90,526	148,167	120,396	160,882
Issuance denominated in other currencies	14,593	9,167	28,946	28,942	29,704
<b>Total issuance</b>	<b>396,583</b>	<b>370,390</b>	<b>465,191</b>	<b>488,363</b>	<b>504,282</b>
Issuance fixed coupon	310,327	294,105	357,459	386,102	411,722
Issuance floating coupon	50,741	43,638	65,381	54,398	87,446
Issuance other	10,403	7,160	9,930	5,828	5,114
<b>Total issuance</b>	<b>396,583</b>	<b>370,390</b>	<b>465,192</b>	<b>488,362</b>	<b>504,283</b>

Source: ECBC.



