

AN ANALYSIS OF EUROPEAN BANKS SND ISSUES AND ITS IMPLICATIONS FOR THE DESIGN OF A MANDATORY SUBORDINATED DEBT POLICY

Andrea Sironi^{*}

October 2000

ABSTRACT

During the last twenty years an increasing number of proposals to improve bank market discipline through the introduction of a mandatory subordinated debt policy (MSDP) have been presented and critically discussed by academic economists and bank regulators. While theoretical issues are key in this debate, a proper understanding of the market of banks subordinated notes and debentures (SND) and of the securities main features is also considered as relevant for the potential introduction, design and goals setting of such a policy. This paper builds on information concerning issuers, investors, markets and securities technical features to critically discuss these aspects. Data on over 1,800 European banks SND issues completed during the 1988-2000:Q1 period together with information on primary and secondary market functioning is presented.

JEL Classification Numbers: G15, G21, G28

Keywords: bank, capital regulation, market discipline, subordinated debt

^{*} Associate Professor of Financial Markets and Institutions, Bocconi University, Milan. This paper was prepared while the author was visiting the Federal Reserve Board. The views expressed in this paper are those of the author and do not necessarily reflect those of the Board of Governors, or members of its staff. The author wishes to thank Mark Flannery and an anonymous referee for their useful comments. All errors remain those of the author.

1. INTRODUCTION

Since the early eighties a large number of proposals to improve bank market discipline with the introduction of a mandatory subordinated debt policy (MSDP) have been drafted by prominent academic economists, members of regulatory agencies and other independent organizations¹. These proposals have recently received more attention by bank regulators as these, in turn, are increasingly willing to share the burden of monitoring and controlling banks' risk taking activities with capital market investors.

A MSDP is generally viewed by those in favor of such a policy as an ideal instrument to improve both direct and indirect market discipline because of four main reasons. First, subordinated debt reduces the incentives for banks to engage in excessive risk taking activities. This is because subordinated notes and debentures (SND) investors have similar incentives to those of the deposit insurance agencies: if banks increase their risk taking activities and these turn out profitable, SND investors, unlike equity holders, do not benefit from these gains. If, on the other side, an increase in bank risk taking activities is followed by losses that exceed banks' equity capital, SND holders, unlike insured creditors, bear much of the cost. Direct market discipline would therefore be improved as banks' cost of funds would be more directly related to their risk profile.

Second, as a risk-sensitive form of funding, subordinated debt represents an ideal candidate to improve indirect market discipline. Indeed, issuance and secondary market spreads with respect to a corresponding Treasury security would provide bank supervisors with valuable information on banks risk profiles and would therefore make it more difficult for them to forbear when intervention is necessary.

Third, a MSDP would provide stronger incentives for banks to disclose more information on their portfolio risks in a timely manner to the public. This would in turn reinforce both direct and indirect market discipline.

Finally, because of their typical long maturity, SND represent a stable source of funds and limit the risk of bank "runs", thereby mitigating the possibility of systemic risks. This

¹ See Board of Governors of the Federal Reserve System (1999) for a careful review. More recently, both the European and the U.S. Shadow Financial Regulatory Committees have issued similar proposals. See European Shadow Financial Regulatory Committee (2000) and U.S. Shadow Financial Regulatory Committee (2000).

represents an advantage of SND with respect to other forms of uninsured bank liabilities, such as interbank deposits.

Despite the large number of MSDP proposals presented during the last twenty years, no serious effort to analyze the market of banks SND issues has been done so far, a relevant exception being represented by the recent study of the Federal Reserve Board (Board of Governors of the Federal Reserve System, 1999). A proper understanding of the primary and secondary market of banks' SND, together with an analysis of these securities technical features, is indeed relevant for the potential introduction, design and goal setting of such a policy.

This study is in the spirit of the one realized by the Federal Reserve Study Group in that it tries to fill this gap by analyzing data concerning issuers, investors, markets and securities structures and critically discussing the implications of this empirical evidence for the design of a MSDP. More precisely, data on over 1,800 European banks SND issues completed during the 1988-2000:Q1 period together with information on primary and secondary market functioning collected through interviews with market participants are presented.

No attempt is made by this study to contribute to the debate concerning the ability of a MSDP to improve market discipline by empirically investigating the risk-sensitivity of SND spreads² or the ability of SND investors to influence banks management risk taking decisions³. Rather, the opportunity of a MSDP represents an underlying assumption of this study, the attention of which is entirely focused on the design of such a policy.

The empirical evidence presented in this paper shows three interesting results. First, the market for European banks' SND issues is a relatively concentrated one, with most of the supply coming from the largest banks. These institutions have significantly increased their SND issues since the introduction of the Capital Accord. They issue SND with an average frequency of twice a year and present an average ratio of outstanding subordinated debt to total assets slightly lower than 2%. Second, despite the wide variety of security structures, the large majority of European banks' SND issues are plain vanilla, ten year maturity, fixed interest rate, non-callable coupon bonds. Finally, while often

² See Flannery (1998) for a review of the U.S. empirical studies of this type and Sironi (2000) for the European banking industry.

listed in one or more European stock-exchanges for institutional investors needs, European banks SND are traded in a relatively illiquid secondary market, with few and infrequent large size transactions.

While the first two results are very similar to the ones observed for U.S. banks by the 1999 Federal Reserve Board Study Group on SND, some relevant differences between European and U.S. banks seem to exist as far as SND primary and secondary market functioning are concerned.

This empirical evidence has important policy implications for the evaluation of four main issues: (1) whether a MSDP should be mainly aimed at improving direct or indirect market discipline, (2) which banks should be subject to a MSDP, (3) the extent to which an internationally coordinated effort to harmonize the characteristics of an eventual MSDP is feasible, and (4) the “technical” design of a MSDP, with special reference to aspects such as minimum subordinated debt requirements, minimum frequency of issuance and security structures.

This paper proceeds as follows. Section 2 analyzes the main features of European banks SNDs issues since the introduction of the BIS Capital Accord in 1988 and provides information on the primary and secondary markets for such issues. Section 3 discusses the implications of this empirical evidence in terms of the design of a MSDP. Section 4 concludes.

2. EUROPEAN BANKS SND ISSUES: EMPIRICAL EVIDENCE

2.1. Data sources

Three main data sources have been used to collect information on European banks SND issues and subordinated debt outstanding: (1) Capital Data BondWare, (2) FitchIBCA BankScope, and (3) Moody’s Corporate Default. Capital Data reports information on the major debt and equity issues worldwide. As far as bonds are concerned, Capital Data Bondware provides information on both issuers (nationality, Moody’s and S&P current ratings, industry, etc.) and issues (currency, announcement and closing dates, maturity date, years to maturity, issue type, face value, coupon, etc.). The Capital Data Bondware database contains information on 1,803 major SND issues by 225 European banks during

³ See Bliss and Flannery (2000) and Covitz, Hancock and Kwast for this type of empirical studies.

the period from January 1988 to March 2000, amounting to a total of US\$ 252,520 million equivalent amount (face value).

FitchIBCA BankScope is a database with information on financial statements, shareholders and subsidiaries of over 10,000 banks worldwide. It has been used to collect information on European, U.S. and Japanese banks subordinated debt outstanding and other key balance sheet figures from 1992 to 1999.

European banks issue SND either directly or through wholly owned subsidiaries located in fiscal havens such as Luxembourg, the Cayman Islands, the Netherland Antilles, the Channel Islands and the Bahamas⁴. Information on the ultimate parent company for these issues has been collected from both FitchIBCA Bankscope and Moody's Corporate Default database. The latter is a complete history of Moody's long-term rating assignments for both U.S. and non-U.S. corporations and sovereign. It also contains information on obligors such as borrower names, locations, CUSIP identifiers, ultimate parent companies, bond issuance dates, original maturity dates, seniority, and coupon.

2.2. Issuers

European banks significantly increased the amount of their subordinated debt funding since the Basel Capital Accord became fully effective in 1992. Table 2 reports data on the dollar value of subordinated debt outstanding from 1993 to 1999 for major E.U., U.S., Japanese and Swiss banks. With almost U.S.\$ 240 billion of subordinated debt outstanding as at 1999 year end, European banks represent the largest issuers of SND, accounting for over 46% of the total amount of bank subordinated debt worldwide⁵. This is mostly the consequence of recent issues, with the amount of SND outstanding for European banks almost tripling during the six years from 1993 to 1999. Indeed, Japanese banks had a larger amount of subordinated debt outstanding than E.U. banks at the end of 1993.

This significant increase of SND issues by European banks is strictly related to the Basel Capital Accord rules that allow subordinated debt to qualify as a bank's tier 2 and, more recently, tier 3 capital. Indeed, regulatory issues are considered by European banks as the most relevant factor behind the decision to issue SND as this type of funding is generally

⁴ These issues account for almost 23% of total issues. See Table 10 for more data.

perceived as a more expensive alternative to senior debt and would not be issued without this kind of motivation. Some European interviewed banks report that they tend to issue SND only if their capital adequacy situation is such that an increase in subordinated debt would improve their BIS capital ratio⁶⁷.

Table 3 presents data on country averages of the ratio of subordinated debt to total assets (SD/TA) for banks with total assets in excess of U.S.\$ 50 billion. European Union banks present a lower ratio than Swiss, U.S. and Japanese banks at the end of 1999 (1.65% versus 2.00%, 2.42% and 3.14% respectively). This evidence, coupled with a continuous increase in the SD/TA ratio during the last three years, suggests that a further increase in SND issues by European banks is likely for the near future. The SD/TA is lowest for German and French banks (1.06% and 1.16% respectively) and highest for Irish and UK banks (3.10% and 2.22% respectively). However, all E.U. countries experienced an increase in their banks' SD/TA ratio during the last three years. While a clear explanation of this phenomenon is difficult to identify, three main reasons can be provided. First, the privatization of a large number of public banks in major European countries such as Italy and Spain led to a growing focus to shareholders value and, as a consequence, to an increasing attention on regulatory capital structure (tier 1 versus tier 2 capital). Indeed, the lowest 1999 average SD/TA ratios are the ones of French and German banks, a large number of which are still public. Second, European banks historically presented lower off-balance sheet activities than their U.S. counterparts. This is especially true for continental European banks and is in turn the consequence of the "banking oriented" – as opposed to "capital markets oriented" - nature of the European financial system. A lower development of investment banking activities such as securities underwriting and derivatives trading traditionally limited the growth of off-balance sheet assets for European banks. This in turn led to a lower ratio of risk-weighted assets (RWA) to total assets (TA). As shown by figure 3, in the mid-nineties this ratio was lower for continental European banks than for British, Irish, Japanese and U.S. ones. In a context where the SND issues are mostly driven by a regulatory rationale, this also led to a lower ratio of

⁵ Note that the 240 billion of SND outstanding is consistent with the total U.S.\$ 252 billion of SND issues completed during the 1988-2000:Q1 period considering the average ten year maturity of these issues.

⁶ This is the case if the total outstanding subordinated debt is lower than 50% of tier 1 capital. See Table 1.

SD/TA. Following this argument, the recent increase in the RWA/TA for French, German, Italian and Spanish banks represents one of the reasons behind the growth in the SD/TA ratio. Indeed, this ratio remains lowest for French and German banks, which also experience a lower RWA/TA ratio.

As European banks get more and more involved in investments banking activities, the ratio RWA/TA tends to increase and

The large number of major French and German is also reflected in the lower than average SND issue size of French and German banks compared to other European banks (Table 7).

Table 4 reports data on the top 50 European bank issuers of SND⁸. All major 50 issuers rank within the 73 largest European banks (banks with 1999 year end total assets of over U.S.\$ 50 billion) with the only exception of the French bank Credit National (Table 4 and Appendix 1). These top 50 issuers account for 73% of the total 1,803 SND issues completed during the 1988-2000:Q1 period and for 83.9% of the total U.S.\$ 252,520 million of issued amount.

A significant portion (26%) of the top 50 issuers of SND are public banks, i.e. banks which are either government owned or benefit from an explicit government guarantee. These banks have a clear advantage in issuing SND because the government guarantee generally gives them a top notch credit rating, allowing them to raise funds at cheaper rates than private-sector competitors⁹.

The average ratio between subordinated debt and risk-weighted assets (RWA) for the top 50 issuers is 5.19%. This apparently contradicts the above-mentioned regulatory rationale behind the SND issuance decision. Indeed, a maximum 50% of total Tier 1 capital is allowed to be computed as BIS capital, the latter being generally lower than 10% of RWA. However, total subordinated debt outstanding also includes SND issues with a

⁷ Fiscal considerations are not considered a significant underlying factor of the decision to issue SND as these are again compared to senior debt and both type of funding interest rate expenses are tax-deductable.

⁸ The ranking is based on the dollar amount of SND issued during the 1988-2000:Q1. An alternative criterium based on the number of issues would have produced similar results.

⁹ See Sironi (2000) for a quantification of this interest rate subsidy.

residual maturity of less than five years, which would only count as tier 2 capital for a limited portion of their total face value¹⁰.

The average frequency of issue for the top 50 issuers is twice a year, ranging from a maximum of four times for the largest banks to a minimum of 0.5 (one issue every two years) for the smallest ones.

2.3. Investors

Demand for European banks' SND comes both from retail and institutional investors. European banks raise subordinated debt in two main ways: (1) through their own distribution networks with private placements mainly targeted at private retail clients, and (2) through public issues targeted to institutional investors such as insurance companies, mutual and pension funds. The latter are generally larger size eurobond issues, underwritten and managed by large syndicates of international investment banks and listed in stock exchanges such as London and Luxembourg. Institutional investors also play a key role in secondary market transactions (see paragraph 2.6).

2.4. Securities

Tables 5, 6, 7 and 8 provide detailed information on the 1,803 SND issues. The characteristics of the average European bank subordinated debt issue are similar to the one issued by US bank holding companies (Board of Governors of the Federal Reserve System, 1999): a fixed rate, non-callable coupon bond with an average maturity of ten years and an average size of US\$ 240 million¹¹. Indeed, the large majority of the 1988-2000 issues are fixed-rate (74%), with only a small portion of them being zero-coupon (1.6%), convertible into floating rate (0.8%) or including warrants for equity or senior debt (0.5%). The remaining 26% of the issues are mostly represented by floating rate notes (24.8%) and convertibles (0.8%).

The average maturity of European banks' SND issues is 10.1 years, with 10 years representing the mode value not only for the whole sample but also for all but one country (Norway) and all years since 1992, when the Basel Capital Accord became

¹⁰ In addition to this, data on RWA were not available for many smaller banks. As larger banks often present above average SD/RWA ratios, this lack of data has the effect of overestimating the sample banks SD/RWA average ratio.

¹¹ This is the average face value for 1999 and 2000:Q1. The Federal Reserve Study Group on SND found the typical issue size for U.S. banks to be in the range of U.S.\$250 million to U.S.\$400 million.

effective. While SND with a maturity ranging from 2 to 100 years have been issued by European banks, the typical maturity ranges from 5 to 15 years (Figure 1). This is mostly driven by the Basel Capital Accord rules, requiring subordinated debt to be amortized on a straight line basis over the five years preceding the maturity in order to qualify as tier 2 capital (Table 1). Indeed, figure 2 shows that the maturity distribution of European banks' SND issues changed since the Basel Capital Accord came into effect (end 1992), with a significant increase in the number of issues with a maturity equal and in excess of 10 years. More recently, following the 1997 introduction of tier 3 capital, which allowed SND issues with maturity above 2 years to qualify as regulatory capital for market risk requirements purposes, shorter maturity SND have been issued by major European banks. Over 50% of the SND issues with a maturity of less than 5 years have been completed in the 1997-2000:Q1 period¹².

Perpetual and callable issues represent 12.4% and 17.4% of the total SND issues respectively. A wide range of SND types are issued by European banks (collared, dual currency, reverse floaters, index-linked, etc.). However, these "irregular" securities only account for 15% of the total SND issues, the large majority (85%) being represented by "plain vanilla" issues.

Table 5 reports information on single country banks SND issues. Four interesting points emerge. First, the average maturity is relatively higher for UK (13.35 years), Austrian (12.74 years), and Dutch (11.46) banks and relatively lower for Finnish (7.13 years) Norwegian (7.39 years), and Belgian (7.76 years) banks. Second, the average issue amount is relatively higher for UK (\$315m), Spanish (\$247m), Dutch (\$235m), and Irish (\$200m) banks. These are also the European countries where the banking industry is more concentrated. German and French banks, which contributed for the highest number of issues in the period, both reported lower than average issue amounts. Third, perpetual SND, amounting to 12.4% of the total number of issues, are mostly issued by Irish (54.5%), UK (34%) and Spanish (35%) banks. This is partly a consequence of the previous aspect as perpetual issues have an average amount of US\$ 250 million, significantly above the global average. Finally, callable issues are relatively rare,

¹² Tier 3 capital was introduced by the BIS Amendment to the Capital Accord to Incorporate Market Risks in 1996, which became effective in 1997. See Basel Committee on Banking Supervision (1996).

accounting for only 17.4% of the total number of subordinated issues. They are issued relatively more frequently by Irish (50%), Portuguese (55%), Norwegian (44%), and UK (40%) banks.

An analysis by year of issue (Table 6) highlights four main interesting features concerning the evolution of European banks SND issues. First, the number of European banks SND issues has been increasing, although not continuously, from just above 100 in 1988 to over 200 in 1999. Second, the average maturity has been increasing from approximately eight years in the late eighties to over ten years in the late nineties (12.1 years for 1999). However, since 1992, when the Basel Capital Accord came into effect, ten years maturity issues have always been the most common ones. Third, the average issue amount has been steadily increasing from a value of under U.S.\$100 million in the late eighties to over U.S.\$200 million in 1999 and 2000. This, coupled with the increase in the number of issues, led to a significant increase in the yearly dollar amount of European banks SND issues, from under \$10 billion in the late eighties to over U.S.\$ 50 billion in the late nineties. Finally, the numbers of perpetual and callable issues have both been increasing over time. While almost non-existent in the late eighties and early nineties, they represented over 20% and 30% respectively of the total number of issues in the late nineties. This is most likely a consequence of the prevailing interest rate environment: the expected rate decreases of the early eighties made perpetual and callable issues very unattractive to investors and, as a consequence, very costly to issuers. On the other side, the increasing rate scenario of the late nineties favored these kinds of issues.

Finally, a breakdown by currency of denomination (Table 7) shows three interesting points. First, Luxembourg franc is the most commonly used currency, accounting for over 25% of the total issues. These are mostly plain vanilla, fixed-rate, small size eurobonds, a significant portion (61%) of which are then listed in the Luxembourg stock exchange for institutional investors needs. Second, most of the perpetual and callable SND issues are either U.S. dollar or pound sterling denominated issues, suggesting that U.S. and U.K. investors have an appetite for such issues while continental European investors prefer plain vanilla issues. Finally, Euro denominated issues, while accounting for only 15% of the total 1,803 SND issues completed by European banks in the 1988-

2000:Q1 period, represent the majority of more recent issues (over 75% of the 1999-2000:Q1 issues).

2.5. The primary market

Table 9 reports data on European banks SND issues by primary market type. Private placement issues, accounting for almost a third of the total number of SND issues, represent only 10.6% of their total U.S.\$ 252 billion face value. Their average size is significantly lower than the one of public issues. A large majority of the latter is represented by eurobond issues. These account for over 60% of the total number of SND issues and for over 64% of the total dollar value. The remaining 35% of the SND issues are divided between domestic ones (21%), foreign ones (17%) and global bonds (1%). Global bonds represent very large size issues, with an average face value of over 600 million U.S. dollars, similar to eurobonds in that they are offered for sale in many countries simultaneously but different from them in that they are registered securities held in common depositories such as Cedel or Euroclear. This enhance secondary market trading in local markets and between investors in different regions.

2.6. The secondary market

According to interviewed market participants¹³, the secondary market for European banks SND issues is an over the counter dealer market dominated by large banks and institutional investors. Indeed, while most of the SND issues are listed in at least one exchange for institutional investors' needs¹⁴, few transactions take place in such exchanges.

It is a relatively illiquid over the counter market, with few and infrequent large size transactions. Indeed, most SND trade infrequently and in large blocks, with wide bid-ask spreads and relatively uninformative dealers quotes. Bid-ask spreads are reported to be in the range of 5 to 10 basis points during normal times¹⁵ for large size SND issued by

¹³ Eight major banks from three major European countries (France, Italy and UK) were interviewed for this study. Six of them are both issuers of SND and market makers in the secondary market of European banks SND. Two of them are issuers only.

¹⁴ Table 11 reports data on market listings. Almost 80% of European banks SND issues are listed in at least one exchange. Most issues are listed either in Luxembourg (38.9%) or London (14.7%).

¹⁵ This is higher than the 2 to 5 basis points value reported by the Federal Reserve Study Group for U.S. bank SND issues. See Board of Governors of the Federal Reserve System (1999), p. 49.

major European banks¹⁶. However, spreads can significantly widen during market turbulence periods such as the one that followed the Russian default in August 1998 or other major events¹⁷. Liquidity is reported to be a function of two main factors: size and structure. Liquidity is higher for large size, plain-vanilla SND issued by major top rated European banks and almost non-existent for small size, irregular SND issues with options attached. Quoted prices by market makers do not generally represent a real commitment to buy or sell and are purely indicative¹⁸.

Investors in the secondary market of European banks' SND are mostly insurance companies, investment funds, pension funds and banks' asset management divisions. According to interviewed market participants, banks do not directly invest in other banks SND because of the capital adequacy rule requiring a bank to deduct the amount of these investments from its regulatory capital.

3. IMPLICATIONS FOR THE DESIGN OF A MANDATORY SUBORDINATED DEBT POLICY

Proposals to introduce a MSDP range from soft ones, aimed at complementing capital requirements, to more “radical” ones, aimed at replacing capital regulation. The latter generally focus on direct market discipline, the process whereby the expected cost of a bank funds is a direct function of its risk profile. On the other side, the “soft” proposals focus more on indirect market discipline. This can be defined as the process whereby the yields of a bank's risk-sensitive source of funds are used as a means for bank supervisors to improve their risk monitoring and controlling tasks. Proposals of this type range from more “discretionary” ones, where secondary market spreads of SND would be used by bank supervisors as market signals of the issuing banks' risk, to more “rigorous” ones, where changes in secondary market spreads would trigger regulatory actions such as prompt corrective actions (PCA).

¹⁶ Two interviewed market participants report bid-offer spreads in price terms, of approximately 30 to 60 cents. This is equivalent to an interest rate based spread of 4 to 8 basis points for a ten year fixed rate SND issue with a 5% annual coupon.

¹⁷ Liquidity crisis, default of comparable bonds and rating downgrades of similar issuers are generally mentioned by interviewed market participants as examples of these events.

¹⁸ One interviewee indicated that an exception to this rule is represented by grey market quotes published by lead banks of syndicated issues for subordinated eurobonds.

The 1999 Federal Reserve Study Group on SND carefully reviews the main proposals and classifies them into “three generations”¹⁹. First generation proposals were mostly made during the mid-eighties and were aimed at reinforcing direct market discipline by increasing a bank’s cost of funding rather than by affecting its ability to obtain funds²⁰. As such, they generally required banks to issue SND frequently, in order to keep their cost of capital in line with their evolving risk profile.

Second generation proposals were made during the late eighties and early nineties²¹. While still focused on the direct market discipline effect of subordinated debt, they emphasized the impact of a bank’s risk profile on its ability to issue SND rather than on its cost of funding. Under these proposals, banks would be required to issue SND either on a frequent basis or with a provision allowing investors to put the debt back to the issuing bank. The inability of a bank to issue SND would then be used both as a signal of its financial weakness and as a trigger for regulatory action.

Third generation proposals are identified with the ones drafted by Calomiris in the late nineties (1997 and 1999). These proposals would require banks to issue on a very frequent basis (monthly rollover) short term SND (two years maturity) with a cap on the rate that they would be allowed to pay. Banks that do not manage to issue at rates under the rate cap would be required to gradually reduce their assets. As with previous proposals, the focus is on direct market discipline imposed in the issuance market.

More recent proposals presented by both the U.S. and European Shadow Financial Regulatory Committees²², while not providing details concerning technical aspects such as SND security structures and frequency of issuance, emphasized the role of subordinated debt as a means of reinforcing indirect market discipline and reducing bank supervisors’ discretion in bank crisis management policies. Under this type of proposals, the distinction between tier 1 and tier 2 capital would be eliminated and banks would be subject to a simple leverage ratio that could be satisfied by both equity capital and subordinated debt.

¹⁹ See Board of Governors of the Federal Reserve System (1999).

²⁰ See Benston et al (1986).

²¹ These include Keehn (1988), Cooper and Fraser (1988), Wall (1989) and Evanoff (1993).

²² See European Shadow Financial Regulatory Committee (2000) and U.S. Shadow Financial Regulatory Committee (2000).

3.1. Direct or indirect market discipline?

In order to adequately design the technical features of a MSDP, a clear understanding of the main goal of such a policy is needed. This might appear as a trivial statement as no one would doubt that the basic goal of a MSDP is to improve bank market discipline. However, some key elements of a MSDP are affected by the choice between a direct market discipline oriented policy and an indirect market discipline oriented one. Direct market discipline to be effective requires a bank's expected cost of funds to be a direct function of its risk profile. This in turn requires that: (1) a significant portion of the bank's funding is in the form of uninsured risk-sensitive liabilities²³, and (2) the bank access the debt market frequently enough for its borrowing costs to adequately reflect its evolving risk profile. Condition (1) requires that no conjectural guarantees such as "too big to fail" ones are perceived by subordinated investors to be in place. Indeed, this represent a necessary condition for a MSDP to be effective. While this issue is not explicitly treated by this paper, it is worth noting that currently available empirical research (Sironi, 2000) concluded that TPTF policies were present in the European banking industry in the first half of the nineties and became weaker or vanished during the second part of the decade. A much stronger and significant impact was found for explicit government guarantees such as the ones enjoyed by the German Landesbank. These explicit guarantees led to a significant government subsidy in the form of a lower cost of SND issues, the value of which has been increasing over the nineties.

In addition to that, no standardization of the SND securities would be needed for direct market discipline purposes. Both fixed rate and floating rate SND would serve the purpose of reinforcing direct market discipline, just as different maturity SND would.

On the other side, indirect market discipline requires the yield of SND to be both easily observable and comparable between different issuing banks. Secondary market spreads are therefore more relevant and their relationship to the evolving risk profiles of the issuing bank is crucial for its effectiveness. A portion of a bank's funds should be in the form of a risk-sensitive financial instrument traded in a liquid secondary market. In order to allow the supervisory authorities to make reasonable comparisons between the spreads

²³ If subordinated debt represents a minor portion of a bank's total liabilities, the majority of which is in the form of non risk-sensitive instruments, the bank management might not respond to market signals.

of different banks SND, a high degree of standardization in the securities characteristics would be preferable, as this would also magnify secondary market liquidity. No significant amount or high frequency of issuance of SND is needed for the purpose of indirect market discipline²⁴.

In light of the scarce liquidity of European banks SND secondary market, a MSDP mainly aimed at reinforcing direct market discipline would be advisable. However, the use of issuance spreads by bank supervisors as market signals of a bank financial soundness, without any automatic link to PCA type regulatory actions, could also be beneficial, introducing an indirect market discipline goal in the design of a MSDP²⁵.

3.2. Which banks?

Most of the proposals to introduce a MSDP suggest that only large banks should be subject to such a policy. Indeed, SND are currently issued mostly, although not exclusively, by large banks with total assets in excess of U.S. \$ 50 billion. These banks account for over 83% of the total U.S.\$ 252 billion of SND issued by European banks during 1988-2000:Q1. This is not a sufficient condition for a MSDP to be limited to major banks. However, three additional arguments can be advanced. First, for a MSDP to be effective in improving direct market discipline, a minimum frequency of issue is required. If a bank issue subordinated debt only once every two year, its cost of funding would not adequately reflect the evolution of its risk profile. Table 4 shows that the frequency of issue is decreasing with the size of the issuing bank.

Second, for a MSDP to be effective in improving indirect market discipline, a minimum amount is required for each SND issue. Market participants report that the secondary market liquidity of an SND issue is a direct function of the issue amount and of the issuing bank size and “name”.

²⁴ An exception would arise if the secondary market liquidity of an individual issue is partly driven by how long it has been outstanding. In such a case, a higher frequency of issue would enhance indirect market discipline. However, I am not aware of any study providing empirical evidence on this relationship.

²⁵ Interviewed market participants tend to be skeptical about the reliability of secondary market spreads as signals of the issuing banks’ risk profiles for two main reasons. First, because, given the illiquidity of the market, spreads can be significantly affected by the decision to buy or sell of individual institutional investors. These could in turn be driven by reasons that are not directly related to the credit quality of the issuing bank, such as cash withdrawals for an investment fund. Second, because secondary market SND

Finally, the need to improve both types of market discipline would be particularly strong for those banks that choose to adopt an internal model approach (IMA) to capital requirements. A future capital adequacy regime based on banks' internal risk measurement models poses a major problem for bank supervisors. Given the shareholders' option-like payoff profile, banks experiencing significant unexpected losses and getting closer to their default point could find it convenient to adopt a gaming behavior by artificially reducing the internally produced risk measures while increasing their risk taking activities in an effort to replenish their equity capital. The growing independence of bank management in determining their capital adequacy must therefore be accompanied by an increasing role of market forces in monitoring banks' risk profiles. Both the U.S. and the European experience following the Basel 1996 Amendment to the Capital Accord²⁶ show that the largest banks are the most likely ones to choose this approach. Because of these reasons, a MSDP limited to those banks that choose an IMA, either in the form of an internal ratings based approach (IRA) to credit risk capital requirements or in the form of a IMA to market risk capital requirements, is considered appropriate. This solution could also represent a "transition period" during which no real obligation to satisfy a subordinated debt requirement would be in place, as banks would only face it in the event they choose for a IMA to capital standards.

3.3. How much?

Defining the amount of the appropriate required cushion of a MSDP requires to identify the relevant variable to which the subordinated debt requirement should be related. Most of the MSDP proposals drafted during the eighties, before the introduction of the 1988 Basel Capital Accord, were based either on bank liabilities or on bank deposits as the relevant variable²⁷. On the other side, most of the proposals advanced during the nineties are based either on total risky (non-reserve) assets or risk-weighted assets (RWA)²⁸. This evolution reflects both the belief that the required cushion should be directly related to a

spreads are considered to be driven more by short term market expectations than by the medium to long term "fundamentals" of the issuing banks.

²⁶ This amendment introduced the IMA alternative for market risk capital requirements purposes.

²⁷ Most of these proposals would require a minimum subordinated debt requirement ranging from 2% to 4% of total deposits or liabilities.

²⁸ Most of these proposals would require a minimum subordinated debt requirement ranging from 2% to 5% of risky or risk-weighted assets.

bank's risk profile, and the idea that a MSDP should complement the existing capital adequacy framework and, as such, be based on the same relevant variable.

While the capital adequacy risk-weighting scheme suffers from the well known problems that open the door to regulatory arbitrage transactions, RWA have two clear advantages with respect to other balance sheet variables. First, they take into account off-balance sheet items and the related credit risk profile. Second, they introduce a basic differentiation between different assets credit risk profiles²⁹. On the other side, relating the subordinated debt requirement to a bank's total RWA would create two main problems. First, it would confine the requirement to credit risk. This problem could be solved by including into the RWA variable the total exposure to market risk coming from the trading portfolio³⁰. Second, it would open the door to regulatory arbitrage opportunities. This problem would be less relevant than it currently is because of the lower cost of subordinated debt capital compared to equity capital.

An alternative to a minimum ratio of RWA would be a MSDP based on a minimum portion of a bank total capital at risk, as measured by an IMA. This alternative has two main advantages. First, it would not confine the subordinated debt requirement to credit risk, by taking into consideration other types of risks, most notably market risks. Second, it would provide a subordinated debt requirement which is better related to a bank global portfolio risk than the one resulting from the sum of single assets risk-weighted requirements. On the other side, this alternative suffers from the moral hazard problem outlined above. MSDP is especially needed as a means to counterweight the trend towards a greater reliance on banks internal models based equity capital requirements because of the potential risk of "gaming" behavior on the part of these banks.

²⁹ The U.S. Shadow Financial Regulatory Committee (2000) claims that using a simple leverage ratio based on total assets would be equivalent, if not better, than a RWA related one because of its simplicity. This argument fails to consider that a simple leverage ratio is equivalent to attributing an identical 100% risk weight to all assets, thereby imposing the same capital charge to a AAA rated government bond and an unsecured loan to a CCC rated company. While a standardized and static differentiation of asset classes would never completely eliminate regulatory arbitrage opportunities, it is clear that these opportunities are lower the higher is the number of the risk buckets and the more refined is the risk-weighting scheme.

³⁰ This in turn could be obtained in two alternative ways: (1) by multiplying the standard approach market risk capital requirement by 12.5 (the reciprocal of 8%), or (2) by adding the exposure of each single market risk factor such as the net open position in foreign currencies and the net open position in stocks for general equity risk.

In light of the above arguments, a MSDP based on a bank RWA related requirement is considered, on balance, a better alternative. Table 4 reports the ratio of total outstanding subordinated debt to RWA for the 50 major European bank issuers of subordinated debt. This typically ranges from a minimum of 2% to a maximum of 8%. This suggests that a minimum subordinated debt requirement of 3% to 4% of RWA, while forcing a minority of banks to increase their SND outstanding, would not significantly affect major European banks financial structure.

The Federal Reserve Board Study Group on SND suggests that a lower rate would be more appropriate³¹. This conclusion is based on two main arguments. First, given the current ratio of subordinated debt to RWA, an SND requirement in excess of 2 percent would have significant effects on the balance sheets of some banking organizations. Second, given many institutions preference for tier 1 over tier 2 capital, a high subordinated debt requirement could provide an incentive to substitute SND for equity capital, thereby weakening their overall capital structure.

A reply to these arguments could be based on the following three considerations. First, the total amount of a bank outstanding SND would qualify for subordinated debt requirement purposes, without any residual maturity restriction such as the five years one currently in place. This would make it easier for banks to comply. Second, once a MSDP is introduced for those banks opting for an IMA to capital requirement, the latter would most likely be based on equity, or tier 1, capital only. This in turn would reduce the risk of equity capital being substituted by subordinated debt. Finally, if the improvement of direct market discipline represents the main goal of a MSDP, then a significant amount of subordinated debt is needed for a bank's cost of funding to be affected.

3.4. How frequently?

Table 4 reports the average frequency of issue for the top 50 European bank issuers of SND. This ranges from a minimum of 0.5 (one issue every two years) for the smallest banks to a maximum of 4 to 5 times a year for the largest banks. However, these results are based on the 1988-2000 averages. As such, they include data from the late eighties and early nineties, when SND issues were less common and frequent for European banks (see Table 6). This evidence suggests that imposing a minimum frequency of issuance of

twice a year, while forcing a minority of large banks to issue SND more frequently than they currently do, would not significantly affect major European banks' practices. This is especially true if the introduction of a MSDP is limited to those banks that opt for an IMA to capital requirements, typically the largest banks.

Requiring a higher frequency of issuance, such as three or four times a year, would probably be beneficial as a means of reinforcing both direct market discipline and "issuance spreads based" indirect market discipline. On the other side, it could significantly increase banks' borrowing costs by forcing them to issue SND during periods of adverse capital markets conditions.

One additional argument against a high frequency of issuance requirement is based on the increase in banks' borrowing costs that would result as a consequence of lower average SND issues size³². Empirical evidence based on European banks SND issues completed during the 1991-2000:Q1 period does not support this argument. Indeed, the size of SND issues is not statistically significant in explaining the variability of primary market SND spreads with respect to a corresponding Treasury security³³. One could reply that the size of an SND issue could affect an SND issue secondary market spread. However, the issuing bank's borrowing cost is more directly related to the primary market spread.

3.5. What type of SND?

Finally, a MSDP could impose restrictions on the type of securities that qualify as subordinated debt. These restrictions could refer to elements such as maturity, interest rate type, call or put options, or special covenants. While reducing the flexibility of bank management decisions, such restrictions could reinforce both direct market discipline, by increasing SND investors incentives to monitor and control the issuing banks' risk taking activity, and indirect market discipline, by improving the comparability of SND spreads across banks and over time.

The cost-benefit analysis of such restrictions should therefore be based not only on their theoretical advantages from a market discipline point of view, but also on their impact on banks' prevailing practices. As far as the latter is concerned, the relatively high standardization of European banks' SND issues suggests that imposing such restrictions

³¹ See Board of Governors of the Federal Reserve System (1999), p. 65.

³² See Board of Governors of the Federal Reserve System (1999), p. 36.

would not significantly affect banks' practices. More specifically, restricting the type of qualifying SND to non-convertible, non-callable securities with a minimum maturity of five years, while not significantly reducing major banks' flexibility, would likely improve bank supervisors possibility to compare SND issuance spreads and facilitate indirect market discipline³⁴.

3.6. How would the capital adequacy framework be affected by a MSDP?

One final issue that must be evaluated when considering the introduction of a MSDP is the one related to the implications of such a policy for the current capital adequacy framework and, most notably, for the definition of capital. Subordinated debt currently qualifies, together with undisclosed reserves, revaluation reserves, general loan loss reserves and other hybrid debt capital instruments, as tier 2 capital. It also represents the only source of tier 3 capital (Table 1).

It is reasonable to assume that the introduction of a MSDP would eliminate the possibility for banks to rely on subordinated debt as a component of regulatory capital. This is considered, together with other changes in the definition of regulatory capital, especially appropriate for those banks that opt for an IMA to capital requirements. Indeed, much of the efforts to reform the capital adequacy framework are aimed at narrowing the gap between the way the banking industry and regulators measure the amount of capital a bank needs or, alternatively, its economic capital at risk. These efforts, in turn, are considered both as a means of improving the quantification of the amount of risk taken by banks, and as a way of reducing regulatory arbitrage incentives.

A bank economic capital at risk is generally defined by industry practitioners as the total unexpected loss a bank can suffer during a pre-defined time horizon - generally one year - with a pre-determined confidence level. A bank with a total economic capital at risk of U.S.\$ 1 billion computed using a one year time horizon and a 99.9% confidence level should have a 0.1% probability of experiencing an unexpected loss in excess of that amount in the following year.

³³ See Sironi (2000).

³⁴ While most European banks' SND issues are fixed rate bonds, imposing a restriction on this element would seriously limit banks flexibility and, at the same time, not significantly increase spreads comparability.

A key aspect of this definition of a bank's economic capital at risk is that it restricts the role of capital reserves to the unexpected component of the bank's total future losses, the expected component being covered by other types of reserves, such as loan loss reserves for credit risk. This distinction is crucial for the definition of the amount of capital a banking organization has available. Indeed, once an IMA is made available to the banking industry as an alternative to standardized capital requirements, then a similar logic as the one underlying internal risk measurement models should apply to the definition of capital. This would in turn require to restrict the regulatory definition of capital to tier 1.

4. CONCLUSIONS

This study has attempted to describe the main characteristics of European banks' SND issues, to examine the functioning of both the primary and secondary markets of these securities, and to critically discuss the implications of this empirical evidence for the design of a MSDP. No attempt has been made to provide empirical evidence to support the benefits of such a policy. Rather, the opportunity of a MSDP has been taken for granted by this study, the attention of which has been entirely focused on the design of such a policy.

Three main conclusions stand out from our analysis. First, the market for European banks' SND issues is a relatively concentrated one, with most of the supply coming from the largest banks. These institutions have significantly increased their SND issues since the introduction of the Capital Accord. They issue SND with an average frequency of twice a year and present an average ratio of outstanding subordinated debt to total assets slightly lower than 2%. Second, despite the wide variety of security structures, the large majority of European banks' SND issues are plain vanilla, ten year maturity, fixed interest rate, non-callable coupon bonds. These characteristics are similar to the ones found by the 1999 Federal Reserve Study Group on SND for U.S. banks³⁵. Third, while often listed in one or more European stock-exchanges for institutional investors needs, European banks SND are traded in a relatively illiquid secondary market, with few and infrequent large size transactions.

³⁵ Table 13 provides a comparison between European and U.S. banks' issues of SND.

These conclusions have important implications for the design of a MSDP. First, the introduction of such a policy should be limited to the largest banks. The possibility of restricting the subordinated debt requirement to those banks that opt for an IMA to capital standards, rather than to banks with a minimum size, could represent an ideal way of achieving this objective. This would also allow a transition period without any real obligation for banks, during which bank supervisors could evaluate the impact and implications of such a policy.

Second, a MSDP should be mainly aimed at improving direct rather than indirect market discipline. As such, it should be based on a relatively high subordinated debt requirement, accompanied by a minimum frequency of issuance requirement.

Finally, given the many similarities between major European and U.S. banks' SND issuance practices and security structures, an internationally coordinated effort to harmonize the characteristics of a MSDP is considered both feasible and important. Indeed, most of the recent work to improve bank capital regulation has been carried out with an international focus through the Basel Committee. This is because of two main reasons. First, independent national regulations are considered increasingly incompatible with the global nature of the activities of major banks, to which most of the recent and currently undergoing efforts to reform the capital adequacy framework are addressed. Second, any independent attempt by single national authorities to modify the existing capital adequacy framework would inevitably affect the relative competitiveness of large international banks, thereby violating the "level the playing field" principle. Both these arguments apply to the eventual introduction of a MSDP.

REFERENCES

- Basel Committee on Banking Supervision, 1988, "International Convergence of Capital Measurement and Capital Standards", July.
- Benston, G., R.A. Eisenbeis, P.M. Horvitz, E. Kane and G.C. Kaufman, 1986, *Perspectives on Safe and Sound Banking*, MIT Press: Cambridge, MA.
- Bliss, Robert R. and Mark J. Flannery, 2000, *Market Discipline in the Governance of U.S. Bank Holding Companies: Monitoring vs. Influencing*, Working Paper Series 2000-03, Federal Reserve Bank of Chicago.
- Board of Governors of the Federal Reserve System, 1999, "Using Subordinated Debt as an Instrument of Market Discipline", Study Group on Subordinated Notes and Debentures of the Federal Reserve System, *Staff Study* 172.
- Calomiris, Charles W., 1997, *The Postmodern Bank Safety Net: Lessons from Developed and Developing Countries*, Washington, D.C., American Enterprise Institute.
- Calomiris, Charles W., 1999, "Building an incentive-compatible safety-net", *Journal of Banking & Finance* 23, 1499-1519.
- Cooper, K., and D. R. Fraser, 1998, "The Rising Cost of Bank Failures: A Proposed Solution", *Journal of Retail Banking*, vol. 10, pp. 5-12.
- Covitz, Daniel M., Diana Hancock and Myron Kwast, 2000, *Mandatory Subordinated Debt: Would Banks Face More Market Discipline?*, Board of Governors of the Federal Reserve System, unpublished paper.
- European Shadow Financial Regulatory Committee, 2000, *Internal Ratings Capital Standards and Subordinated Debt*, Statement No. 7, Brussels, 7 February.
- Evanoff, D.D., 1993, "Preferred Sources of Market Discipline", *Yale Journal on Regulation*, vol. 10, pp. 347-67.
- Flannery, Mark J., 1998, "Using Market Information in prudential Bank Supervision: a Review of the U.S. Empirical Evidence", *Journal of Money, Credit and Banking*, 30, 273-305.
- Keehn, S., 1988, *Banking on the Balance: Powers and the Safety Net: A Proposal*, Federal Reserve Bank of Chicago.
- Sironi, Andrea, 2000, *Testing for Market Discipline in the European Banking Industry: Evidence from Subordinated Debt Issues*, paper presented at a Federal Reserve Board seminar, Washington, July 12.
- U.S. Shadow Financial Regulatory Committee, 2000, *Reforming Bank Capital Regulation*, Statement No. 160, The AEI Press, American Enterprise Institute, March.
- Wall, L.D., 1989, "A Plan for Reducing Future Deposit Insurance Losses: Puttable Subordinated Debt", Federal Reserve of Atlanta, *Economic Review*, vol. 74, pp. 2-17.

Table 1 – Definition of Capital within the Basel Capital Accord

Capital Component	Condition	Requirement
TIER 1		Minimum 4 percent of total risk-weighted assets
Paid-up share capital/common stock		
Perpetual non-cumulative preference shares/stock		
Disclosed reserves (share premiums, retained profit, legal reserves, fund for general banking risks, other general funds/reserves)	General funds/reserves must meet the following criteria: 1) allocations must be made out of post-tax retained earnings or out of pre-tax earnings adjusted for all potential liabilities, 2) funds and movements into or out of them must be disclosed separately in the banks accounts, 3) the funds must be available to a bank to meet losses for unrestricted and immediate use as soon as they occur, 4) losses cannot be charged directly to the funds but must be taken through the P&L account	
UPPER TIER 2		Maximum 100 percent of tier 1 capital
Undisclosed Reserves	1) Passed through the profit and loss account. 2) Not encumbered by any provision or other known liability. 3) Freely and immediately available to meet unforeseen future losses. 4) Accepted by the bank's supervisory authorities.	
Asset Revaluation Reserves	Asset revaluation reserves that take the form of latent gains on unrealised securities are subject to a discount of 55% on the difference between historic book value and market value.	
General provisions/general loan-loss reserves	Only if held against presently unidentified losses. Where they include amounts reflecting lower valuations of asset or latent but unidentified losses present in the balance-sheet, the amount of such provisions or reserves will be limited to 1.25 percent points of weighted risk assets	
Hybrid debt capital instruments (cumulative preference shares, perpetual subordinated debt)	1) Unsecured, subordinated and fully paid-up. 2) Not redeemable at the initiative of the holder or without the prior consent of the supervisory authority. 3) Available to participate in losses without the bank being obliged to cease trading. 4) Must allow service obligations to be deferred where the profitability of the bank would not support payment.	
LOWER TIER 2		
Subordinated term debt	Minimum original term to maturity of over five years. Subject to amortization (20 percent discount every year if maturity less than five years).	Maximum 50 percent of tier 1 capital
TIER 3		
Subordinated term debt	1) Can only be used to cover market risk capital requirement from the trading book. 2) Minimum original maturity of over two years. 3) Must contain interest payments and principal repayment deferral provisions, which can be exercised if the minimum capital adequacy ratio is breached.	Maximum 250% of tier 1 capital for market risks
DEDUCTIONS		
Goodwill		Deducted from tier 1
Investments in unconsolidated banking and financial subsidiaries		Deducted from total capital
Holdings of other banks' capital	Deduction is at the discretion of national supervisory authorities	Deducted from total capital

Source: Basel Committee on Banking Supervision (1988) and following amendments.

Table 2. Total Subordinated Debt Outstanding (US\$bn)
Major Banks (Banks with Total Assets in excess of US\$ 50bn as at 12/99)

	1993	1994	1995	1996	1997	1998	1999
EU	85.746	106.642	129.101	148.182	173.295	202.492	239.948
JAPAN (*)	94.453	104.407	134.396	132.853	131.704	139.054	166.742
USA	31.984	36.467	44.912	59.311	66.013	87.178	88.493
SWI	8.534	9.733	13.533	14.584	16.754	21.747	21.013
TOTAL	220.716	257.248	321.942	354.929	387.766	450.470	516.195

(*) Year end March 1999. Source: FitchIBCA.

Table 3. Average Ratio Subordinated Debt/Total Assets
Major Banks (Banks with Total Assets in excess of US\$ 50bn as at 12/99)

Country	1999	1998	1997	1996
AUSTRIA	2.22%	2.38%	2.11%	1.61%
BELGIUM	2.05%	2.05%	1.98%	1.85%
DENMARK	1.88%	1.61%	1.39%	0.49%
FRANCE	1.16%	1.23%	1.06%	1.07%
GERMANY	1.06%	0.94%	1.00%	0.81%
IRELAND	3.10%	1.73%	1.96%	1.90%
ITALY	1.69%	1.23%	0.99%	1.01%
NETHERLANDS	1.34%	1.30%	1.37%	1.43%
SPAIN	1.90%	1.51%	1.32%	1.33%
SWEDEN	1.56%	1.69%	1.75%	1.87%
UNITED KINGDOM	2.22%	1.43%	1.43%	1.52%
Total EU	1.65%	1.37%	1.33%	1.26%
SWITZERLAND	2.00%	1.98%	1.56%	1.45%
USA	2.42%	2.47%	2.36%	2.54%
JAPAN (*)	3.14%	2.95%	2.48%	2.12%

(*) Year end March 1999. Source: FitchIBCA.

Table 4 – European Banks: 50 Major Issuers of SNDs (1988-2000:Q1)

Rank	Issuer	N. of issues		Amount (US\$ m)		Issuing Bank (U.S.\$ m)				
		Total	Avg. Year	Total	Avg. issue	Tot. Assets	Total RWA	Total SD	SD/TA	SD/RWA
1	ABN AMRO Bank NV	38	3.1	11,567	304	504,122	251,910	11,039	2.19%	4.38%
2	National Westminster Bank	26	2.1	11,067	426	285,979	156,571	12,153	4.25%	7.76%
3	Lloyds TSB Group	30	2.4	10,540	351	240,957	136,342	5,156	2.14%	3.78%
4	Banco Santander C.H.A.	39	3.2	10,145	260	255,549	163,796	8,117	3.18%	4.96%
5	Credit Suisse Group (*)	62	5.1	9,517	153	475,018	146,815	12,031	2.53%	8.19%
6	Union Bank of Switzerland	45	3.7	9,455	210	610,365	210,240	8,982	1.47%	4.27%
7	HSBC Holdings Plc	29	2.4	9,202	317	599,777	302,598	12,188	2.03%	4.03%
8	Banca Intesa (**)	50	4.1	8,585	172	312,170	112,281	8,832	2.83%	7.87%
9	Abbaye National plc	22	1.8	8,082	367	263,183	122,880	5,294	2.01%	4.31%
10	Societe Generale	52	4.2	7,514	145	407,478	NA	6,479	1.59%	NA
11	Bayerische HypoVereinsbank	49	4.0	7,134	146	483,981	252,996	9,401	1.94%	3.72%
12	Royal Bank of Scotland Group	25	2.0	7,130	285	143,898	93,614	3,311	2.30%	3.54%
13	Dresdner Bank AG	35	2.9	6,271	179	397,026	202,152	8,049	2.03%	3.98%
14	Barclays Bank plc	22	1.8	6,141	279	397,660	186,860	4,590	1.15%	2.46%
15	Banco Bilbao Vizcaya Arg. (**)	23	1.9	5,839	254	236,256	132,403	3,312	1.40%	2.50%
16	Commerzbank AG	51	4.2	5,176	101	370,279	187,493	5,871	1.59%	3.13%
17	Halifax plc	17	1.4	5,134	302	222,148	102,810	3,876	1.74%	3.77%
18	Deutsche Bank AG	22	1.8	4,686	213	807,339	293,776	11,053	1.37%	3.76%
19	ING Groep	21	1.7	4,611	220	495,092	181,540	7,974	1.61%	4.39%
20	BNP Paribas (**)	41	3.3	4,299	105	701,787	214,670	10,005	1.43%	4.66%
21	MeritaNordbanken Group	40	3.3	3,901	98	104,457	76,270	3,064	2.93%	4.02%
22	Almanij Kredietbank Group (*)	46	3.8	3,827	83	198,213	NA	5,327	2.69%	NA
23	Bank of Scotland	15	1.2	3,772	251	143,898	74,560	3,248	2.26%	4.36%
24	Fortis Banque S.A.(*)	49	4.0	3,359	69	323,538	156,152	7,142	1.43%	2.96%
25	Credit Agricole (*)	49	4.0	3,236	66	440,506	NA	4,626	1.05%	NA
26	Bayerische Landesbank GZ	21	1.7	3,049	145	263,290	NA	3,965	1.51%	NA
27	Westdeutsche Landesb.GZ (*)	16	1.3	2,898	181	403,890	NA	4,371	1.08%	NA
28	Groupe Banques Pop. (*)	36	2.9	2,858	79	92,189	NA	3,084	3.35%	NA
29	San Paolo IMI (*)	22	1.8	2,812	128	140,467	97,393	1,512	1.08%	1.55%
30	Skandinaviska Enskilda Bank	23	1.9	2,278	99	86,301	38,726	914	1.06%	2.36%
31	Credit Lyonnais SA	26	2.1	2,201	85	173,342	121,466	4,005	2.31%	3.30%
32	Den Danske Bank A/S	10	0.8	2,104	210	98,958	58,027	3,021	3.05%	5.21%
33	Bankgesellschaft Berlin AG (*)	14	1.1	2,048	146	217,785	NA	2,477	1.14%	NA
34	Swedbank	22	1.8	2,043	93	101,285	54,298	3,080	3.04%	5.67%
35	Dexia Group	41	3.3	2,014	49	245,082	68,956	3,121	1.27%	4.53%
36	Bank of Ireland (***)	6	0.5	1,888	315	54,507	33,466	874	1.60%	2.61%
37	Bank Austria	21	1.7	1,812	86	140,267	82,461	3,632	2.59%	4.40%
38	Allied Irish Banks plc	8	0.7	1,660	208	65,396	49,406	1,989	3.04%	4.02%
39	Woolwich Plc	9	0.7	1,598	178	53,332	26,114	1,361	2.55%	5.21%
40	Landesbank Baden-Wurt. (*)	6	0.5	1,427	238	250,317	NA	3,794	1.52%	NA
41	Norddeutsche Landesb. GZ (*)	21	1.7	1,275	61	169,109	NA	1,829	1.08%	NA
42	Credit Mut. Centre Est Eur. (*)	23	1.9	1,199	52	168,059	NA	2,636	1.57%	NA
43	Banque Generale du Lux. (*)	21	1.7	1,019	49	35,685	NA	630	1.77%	NA
44	Credit National (***)	8	0.7	978	122	55,080	NA	1,435	2.60%	NA
45	Unicredito Italiano	6	0.5	874	146	169,708	104,332	1,412	0.83%	1.35%
46	Landesbank Hessen-Thur. GZ	7	0.6	847	121	113,678	NA	897	0.79%	NA
47	DG Bank Deutsche Genos. (*)	11	0.9	782	71	256,926	NA	2,531	0.99%	NA
48	IKB Deutsche Industriebank(*)	10	0.8	743	74	29,667	NA	507	1.71%	NA
49	Credit Commercial de France	16	1.3	646	40	69,452	NA	697	1.00%	NA
50	Landesb. Schleswig-Hol.GZ(*)	13	1.1	616	47	113,919	53,706	1,317	2.15%	4.56%
	Total	1315	2.1	211,860	161	12,988,369	4,547,081	236,213	1.82%	5.19%

(*) Year end 1998, (*) Pro-forma statements after merger, (***) Year-end 2/99. Grey shadow indicates public bank. Source: FitchIBCA and Capital Data BondWare

Figure 1

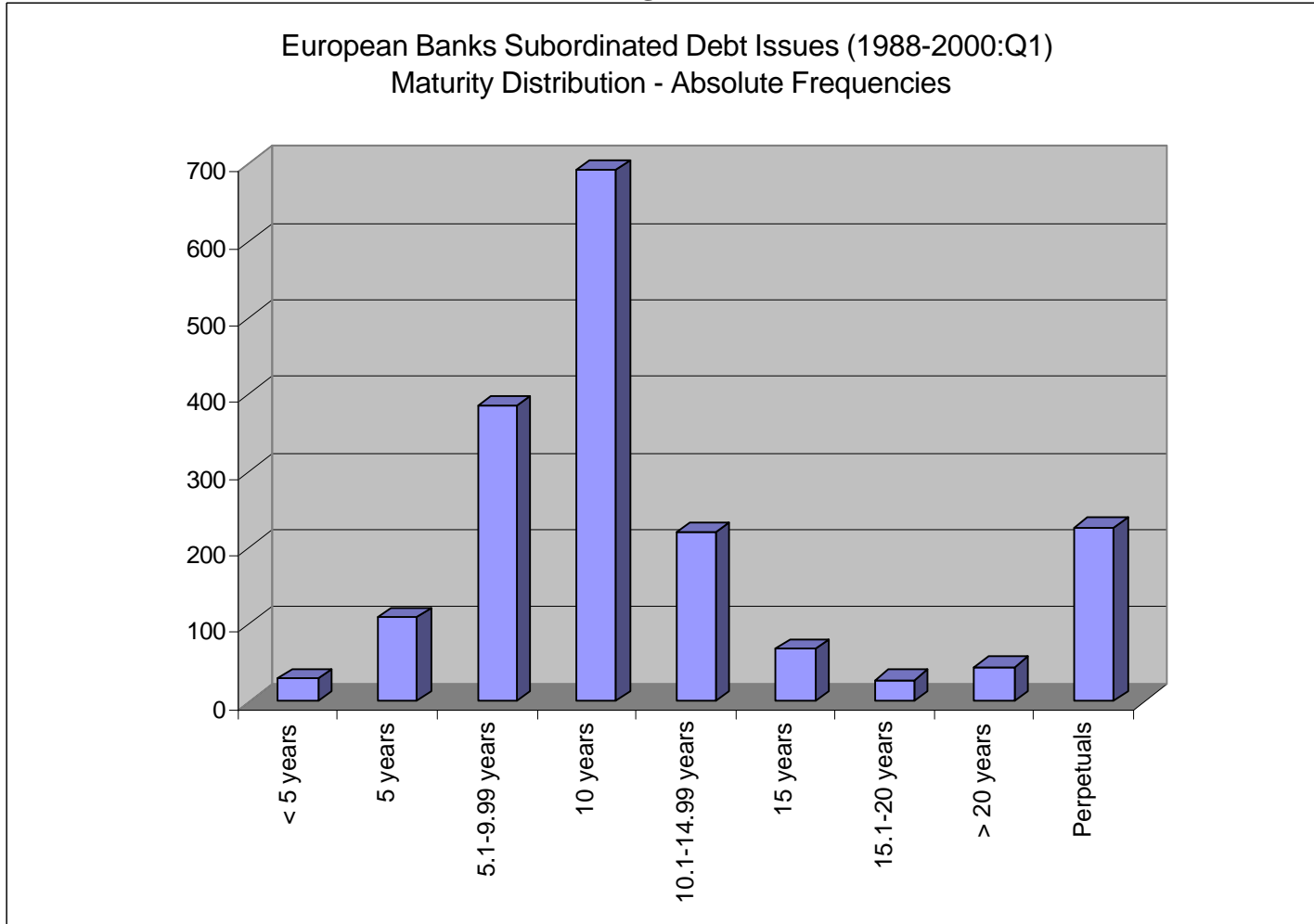


Figure 2

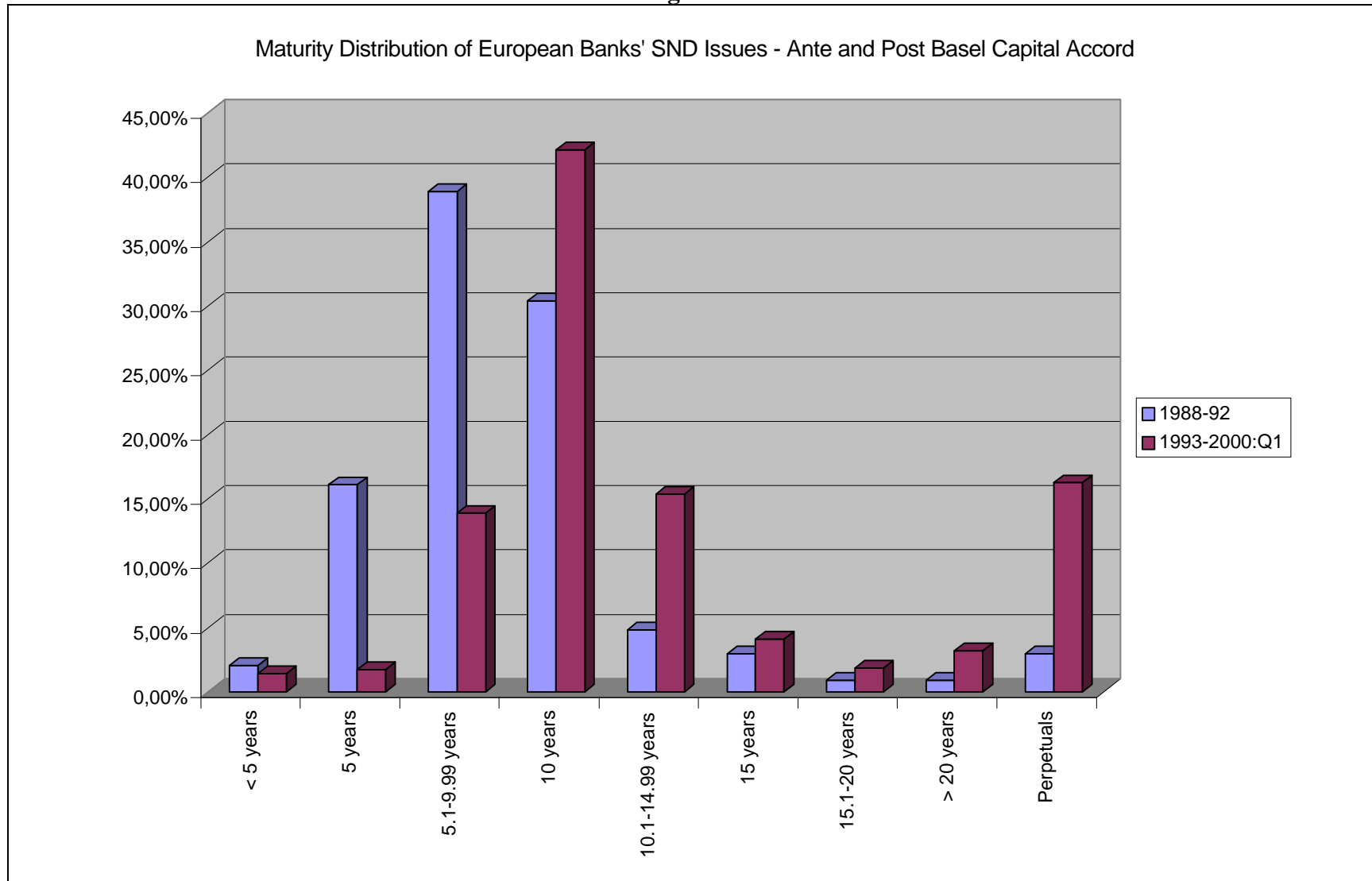
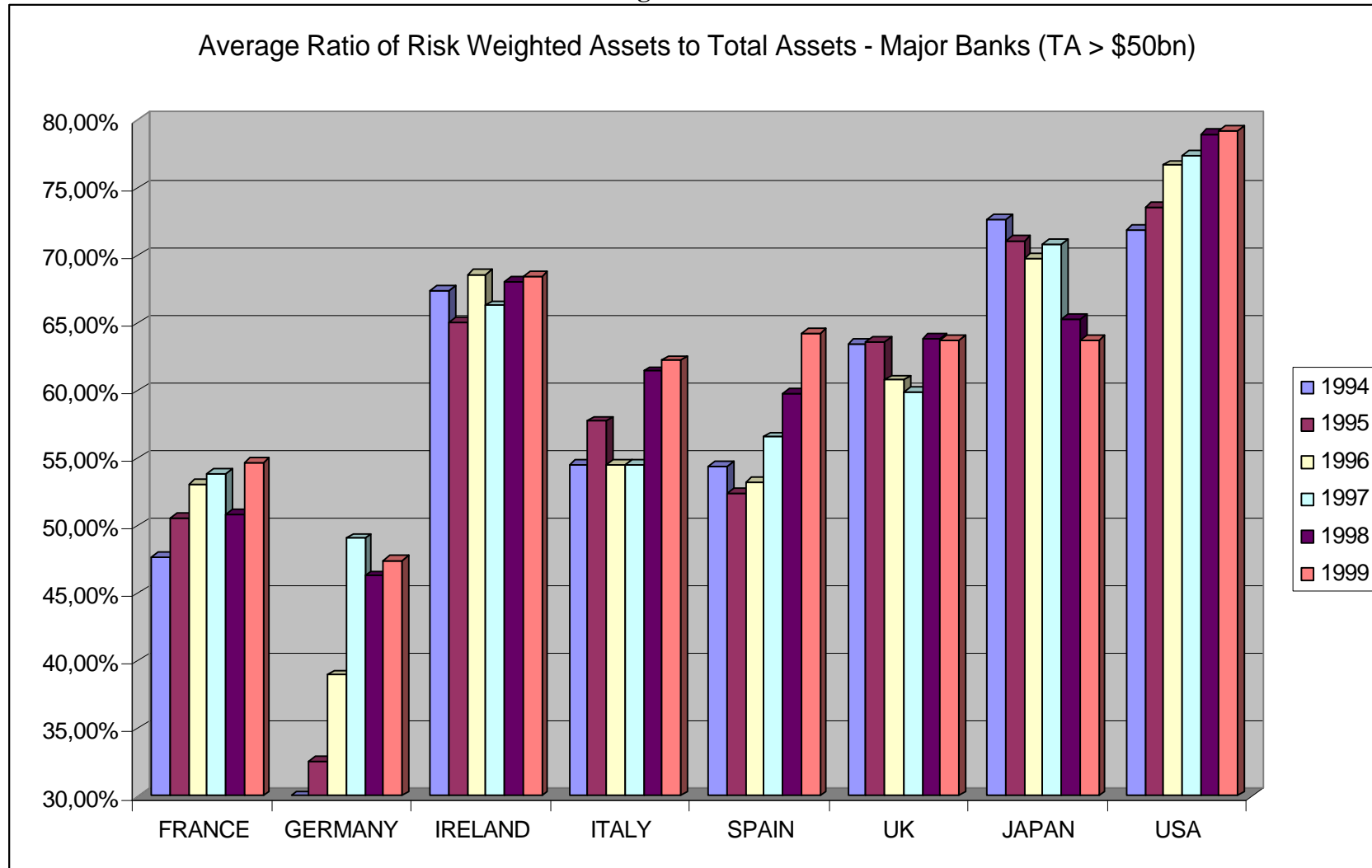


Figure 3



Year end March 1999 for Japanese banks. Source: FitchIBCA.

Table 5 - European banks SND issues by country (1988-1Q:2000)

				Maturity (*)					Amount (USD mln)					Fixed Rate Issues		Perpetual Issues		Callable Issues	
Country	N. of Issues	N. of Issuers	N. of Issues per Issuer	Mean	Mode	Min	Max	St. Dev.	Total	Mean	Min	Max	St. Dev.	N.	% of Total	N.	% of Total	N.	% of Total
AUS	68	13	5.2	12.74	10	4	30	5.4	3,892	57.2	3.02	700	92.6	44	64.7	4	5.88	15	22.1
BEL	136	8	17.0	7.76	10	3	29.5	3.7	8,619	63.4	1.84	600	92.9	127	93.4	21	15.44	19	13.9
DEN	40	11	3.6	8.02	10	5	12	2.1	4,205	105.1	3.78	300	89.2	19	47.5	0	0.00	14	35.0
FIN	50	5	10.0	7.13	10	5	10	1.9	5,312	106.2	7.87	300	84.8	36	72.0	9	18.00	15	30.0
FRA	338	34	9.9	9.60	10	2.8	15	2.2	27,931	82.6	1.30	800	98.3	274	81.1	24	7.10	34	10.1
GER	331	31	10.7	11.00	10	2	40.5	5.5	39,842	120.4	5.26	1255	141.4	253	76.4	5	1.51	11	3.3
UK	209	21	10.0	13.35	10	2.1	31	6.2	65,801	315.1	17.60	1308	215.1	151	72.2	71	33.97	83	39.7
GRE	2	1	2.0	10.00	10	10	10	0.0	181	90.4	98.54	182	59.1	0	0.0	0	0.00	2	100.0
IRE	22	6	3.7	11.01	10	10	15	1.6	4,404	200.2	22.47	588	139.6	9	40.9	12	54.55	11	50.0
ITA	122	19	6.4	8.34	10	2	15	2.7	18,639	152.8	8.51	630	121.1	51	41.8	5	4.10	18	14.7
LUX	72	12	6.0	8.37	10	5	15	2.0	4,183	58.1	7.05	300	42.9	65	90.3	2	2.78	2	2.8
NL	78	12	6.5	11.46	10	2	100	11.0	18,295	234.6	5.55	1250	242.3	65	83.3	4	5.13	5	6.4
NOR	36	9	4.0	7.39	5	5	12	2.5	1,975	54.9	7.69	150	45.8	20	55.5	4	11.11	16	44.4
POR	20	10	2.0	10.00	10	10	10	0.0	2,134	106.7	11.05	295	76.0	2	10.0	7	35.00	11	55.0
SPA	80	10	8.0	10.54	10	5	30	3.5	19,772	247.2	16.52	1135	216.2	55	68.7	28	35.00	29	36.25
SWE	64	9	7.1	8.25	10	4.2	15	2.9	6,502	101.6	8.34	500	108.4	39	60.9	17	26.56	17	26.6
SWI	135	14	9.6	10.63	10	3	30	3.7	20,833	154.3	1.11	500	99.9	122	90.4	11	8.15	12	8.9
Total	1803	225	8.0	10.10	10	2	100	4.9	252,520	140.1	1.11	1308	160.1	1,332	73.9	224	12.42	314	17.4

(*) Excluding perpetual issues. Source: Capital Data BondWare.

Table 6 - European banks SND issues by year (1988-1Q:2000)

Year	N. of Issues	Maturity (*)					Amount (USD mln)					Fixed Rate Issues		Perpetual Issues		Callable Issues	
		Mean	Mode	Min	Max	Std. Dev.	Total	Mean	Min	Max	St. Dev.	N.	% of Total	N.	% of Total	N.	% of Total
1988	107	8.0	5.0	4.0	25.3	4.0	8,897	83.1	7.5	500.0	100.6	93	86.92%	1	0.93%	0	0.00%
1989	52	8.1	6.0	5.0	20.0	3.7	4,838	93.0	7.1	551.3	140.0	39	75.00%	6	11.54%	0	0.00%
1990	112	7.3	7.0	3.0	15.0	2.5	6,296	56.2	5.8	487.3	87.0	91	81.25%	3	2.68%	0	0.00%
1991	128	7.7	7.0	5.0	30.0	3.4	8,162	63.8	7.1	750.0	102.9	120	93.75%	3	2.34%	0	0.00%
1992	141	9.8	10.0	2.8	21.8	2.2	15,260	108.2	8.9	809.0	109.5	104	73.76%	3	2.13%	0	0.00%
1993	190	11.4	10.0	5.0	100.0	7.9	22,649	119.2	8.9	1255.8	123.1	117	61.58%	18	9.47%	24	12.63%
1994	160	10.1	10.0	4.0	30.0	3.3	13,454	84.1	1.3	596.7	92.4	115	71.88%	13	8.13%	26	16.25%
1995	158	10.8	10.0	3.0	30.0	4.4	22,978	145.4	10.1	1000.0	127.8	112	70.89%	14	8.86%	27	17.09%
1996	151	11.1	10.0	2.0	30.0	4.5	25,685	170.1	18.6	800.0	134.1	100	66.23%	32	21.19%	57	37.75%
1997	157	10.6	10.0	5.0	24.3	2.5	27,638	176.0	1.1	750.0	136.7	107	68.15%	34	21.66%	51	32.48%
1998	142	10.6	10.0	2.0	30.0	3.5	24,238	170.7	3.3	831.7	153.3	110	77.46%	28	19.72%	38	26.76%
1999	236	12.1	10.0	2.0	40.5	7.2	55,713	236.1	1.8	1308.2	249.9	170	72.03%	53	22.46%	76	32.20%
2000 Q1	64	10.3	10.0	2.0	20.0	3.1	15,296	239.0	3.0	1000.0	237.3	53	82.81%	12	18.75%	11	17.19%
N.A.	5	na	na	na	na	na	1,418	283.6	174.3	433.0	127.8	1	20.00%	4	80.00%	4	80.00%
TOTAL	1803	10.10	10.0	2.0	100.0	4.9	252,520	140.1	1.1	1308.2	160.3	1,332	73.88%	224	12.42%	314	17.42%

(*) Excluding perpetual issues. Source: Capital Data BondWare.

Table 7 - European banks SND issues by currency (1988-1Q:2000)

	N. of Issues	Avg. Maturity (*)	Amount (USD mln)		Fixed Rate Issues		Perpetual Issues		Callable Issues	
			Total	Avg. per Issue	Number	% of Total	Number	% of Total	Number	% of Total
DFL	48	10.1	8,815	183.6	48	100.0%	5	10.4%	5	10.4%
DKR	14	9.1	822	58.7	13	92.9%	1	7.1%	1	7.1%
DM	70	9.5	12,553	179.3	50	71.4%	8	11.4%	12	17.1%
ESC	17	9.8	1,088	64.0	1	5.9%	0	0.0%	8	47.1%
EURO/ECU	276	11.2	56,356	204.2	205	74.3%	53	19.2%	61	22.1%
FFR	109	10.6	10,745	98.6	95	87.2%	8	7.3%	14	12.8%
LFR	459	7.5	12,745	27.8	458	99.8%	0	0.0%	0	0.0%
LIT	38	8.4	6,972	183.5	12	31.6%	1	2.6%	11	28.9%
PTA	9	11.0	867	96.3	8	88.9%	0	0.0%	0	0.0%
SCH	24	15.7	430	17.9	17	70.8%	1	4.2%	10	41.7%
SFR	116	10.3	12,772	110.1	114	98.3%	1	0.9%	2	1.7%
STG	148	14.1	36,443	246.2	115	77.7%	50	33.8%	47	31.8%
USD	406	11.1	87,001	214.3	143	35.2%	91	22.4%	136	33.5%
YEN	46	13.1	2,582	56.1	44	95.7%	3	6.5%	5	10.9%
Others	23	9.5	2,329	101.3	9	39.1%	2	8.7%	2	8.7%
TOTAL	1803	10.1	252,520	140.1	1,332	0.7	224	12.4%	314	17.4%

(*) Excluding perpetual issues. Source: Capital Data BondWare.

Table 8 - European banks SND issues by type (1988-1Q:2000)

Interest Rate Type	Number	% of Total	Other Features	Number	% of Total
Fixed Rate	1289	71.5	Irregular	277	15.36
Floating Rate Notes	448	24.8	Collared	96	5.32
Fixed Rate Zero Coupon	29	1.6	Hybrid	82	4.55
Convertible	15	0.8	Preference Shares	75	4.16
Fixed Rate + Warrant for Equity	8	0.4	Euro-Fungible	30	1.66
Fixed Rate Convertible Into Floating	6	0.3	Variable/Auction Rate	25	1.39
Floating Rate Note Extendible	3	0.2	Dual Currency	24	1.33
Floating Rate Convertible Into Fixed	2	0.1	Repackaging	14	0.78
Fixed Rate + Warrant for Debt	2	0.1	Tap	15	0.83
Convertible Preference Shares	1	0.1	Reverse Floating Rate Notes	9	0.50
			Index Linked	5	0.28
			Asset Back	4	0.22
			Currency Linked	3	0.17
Total	1803	100.0	Plain Vanilla	1526	84.63

Source: Capital Data BondWare.

Table 9 - European Banks Subordinated Debt Issues by Market Type

Market Type	Number of Issues	% of Total	Total Amount	% of Total	Average Amount
Domestic – Private Placement	98	5.44	7,542	2.99	77.0
Domestic – Public Issue	288	15.97	28,946	11.46	100.5
Euro – Private Placement	291	16.14	13,161	5.21	45.2
Euro – Public Issue	800	44.37	158,029	62.58	197.5
Foreign – Private Placement	193	10.70	6,054	2.40	31.4
Foreign – Public Issue	120	6.66	30,745	12.18	256.2
Global – Public Issue	13	0.72	8,044	3.19	618.8
Total	1803	100	252,520	100	140.1

Source: Capital Data BondWare.

Table 10 – European Banks Issues of SNDs in Fiscal Havens

	Number of Issues	% of Total 1988-2000:Q1 issues
Luxembourg	237	13.14
Cayman Islands	80	4.44
Netherland Antilles	49	2.72
Channel Islands	23	1.28
Bahamas	13	0.72
Hong Kong	12	0.67
Total	414	22.96

Source: Capital Data BondWare.

Table 11 – European Banks SD Issues by Market Listings

Market	Number of issues	% of Total
Luxembourg	702	38.94%
London	265	14.70%
Paris	148	8.21%
Zurich	88	4.88%
Geneva	74	4.10%
Basle	72	3.99%
Frankfurt	68	3.77%
Amsterdam	67	3.72%
Berne	25	1.39%
Lausanne	24	1.33%
Vienna	24	1.33%
AIAF	20	1.11%
Schweizer Borse	15	0.83%
Lisbon	14	0.78%
New York	12	0.67%
Dusseldorf	11	0.61%
Milan	11	0.61%
Dublin	4	0.22%
Munich	3	0.17%
Singapore	3	0.17%
Copenhagen	2	0.11%
Hong Kong	2	0.11%
Madrid	2	0.11%
Brussels	1	0.06%
Total Number of Listed Issues	1416	78.54%
of which listed in more markets	137	
Unquoted	387	21.46%
Total	1803	100.00%

Source: Capital Data BondWare.

Table 12 – European Banks SND Issues by Market Type (1988-1Q:2000)

		Listings									
		London	% of Total	Lux.	% of Total	Other Markets	% of Total	Unquoted	% of Total	Total N. of Issues	%
Domestic	Private Placement	1	1.02	7	7.1	38	38.8	52	53.1	98	100
	Public Issue	11	3.8	22	7.6	243	84.4	12	4.2	288	100
Euro	Private Placement	12	4.1	246	84.5	1	0.3	32	11.0	291	100
	Public Issue	229	28.6	418	52.2	118	14.7	35	4.4	800	100
Foreign	Private Placement	1	0.5	1	0.5	1	0.5	190	98.4	193	100
	Public Issue	6	5.0	2	1.7	48	40.0	64	53.3	120	100
Global	Public Issue	5	38.5	6	46.1	0	0.0	2	15.4	13	100
	Total	265	14.7	702	38.9	449	24.9	387	21.5	1803	100

Source: Capital Data BondWare.

Table 13 – A comparison of European and U.S. Banks SND Issues

SND ISSUES		AREA	EUROPE	USA
Issuers	Which Banks?		Mostly large banks with total assets in excess of U.S.\$ 50 bn	Mostly large banks with total assets in excess of U.S.\$ 50 bn
	Which legal entity?		Mostly issued by banks directly. Often (23%) by subsidiaries located in tax havens	Mostly issued at the BHC level. Minority issued by banks directly
	How much?		Avg. ratio sub. Debt over total assets for major banks: 1.65%	Avg. ratio sub. debt over total assets for major banks: 2.42%
	How often?		Average number of issues per year: 2.1 (50 largest issuers)	Average number of issues per year: 2 (largest BHCs)
Investors			Mostly institutional investors. Minority of retail investors	Mostly institutional investors. Minority of retail investors
Securities	Average amount		Average U.S.\$ 240 m (1999 estimate). Mostly between U.S.\$ 50 m to U.S.\$ 1000 m	Mostly between U.S.\$ 250 m to U.S.\$ 400 m (1998 estimate)
	Maturity		Average 10 years. Mostly between 5 to 15 years. Minority (12.4%) of perpetual issues	Average 10 years. Minority of perpetual issues
	Interest rate		Mostly fixed rate coupon issues	Mostly fixed rate coupon issues
	Currency		Mostly (75%) Euro denominated since 1999	Mostly U.S.\$ denominated
	Callable		Minority (17%) callable issues	More common in the past. Currently a minority
	Other features		Minority (15%) irregular issues including wide range of types. Mostly plain vanilla issues	Mostly plain vanilla issues
Primary market			Mostly (60%) eurobond issues. Mostly (67%) public issues. More recently, global bonds have been issued.	Mostly domestic issues. Registered securities. Frequent use of shelf registration
Secondary market			Relatively illiquid, spreads in the range of 5-10 b.p. in normal times. Listed in stock exchanges for institutional investors needs	Relatively liquid, spreads in the range of 2-5 b.p. in normal times

Source: FitchIBCA, Federal Reserve Board (1999), Capital Data BondWare, Interviews to market participants.

APPENDIX 1
Total Subordinated Debt Outstanding (US\$) - Major International Banks
(Banks with Total Assets in excess of US\$ 50bn)

Country	Bank	1999	1998	1997	1996	1995	1994	1993
AT	Bank Austria AG (includes Creditanstalt)(**)	3.193	3.632	2.973	2.408	2.054	2.078	825
	Erste Bank der Oesterreichischen Sparkassen AG (**)	1.312	1.312	986	830	0	0	0
	Total	4.505	4.944	3.960	3.238	2.054	2.078	825
BEL	Fortis (includes ASLK-CGER and Generale Bank) (**)	7.142	7.142	6.065	5.239	5.674	4.188	3.183
	Group Dexia (Combined)	3.121	3.116	2.937	2.629	2.623	NA	NA
	Almanij (includes KBC Bank)	5.274	5.327	4.745	4.074	3.446	2.883	1.960
	Crédit Communal de Belgique (**)	2.122	2.122	1.961	1.639	1.629	1.351	1.023
	Bank Brussel Lambert - BBL-Banque Bruxelles Lambert s.a./n.v. - BBL	2.450	2.570	2.118	1.960	1.766	1.360	1.103
	Groupe Arcofin (includes Artesia Banking Corporation)(**)	1.721	1.721	1.485	542	526	430	231
	Total	21.830	21.999	19.310	16.082	15.664	10.212	7.500
DEN	Den Danske Bank	3.021	2.608	2.694	304	315	303	370
	Unidanmark Group (The)	1.111	833	0	100	100	92	251
	Kapital Holding (includes Realkredit Danmark)	957	858	439	505	541	493	443
	Total	5.089	4.299	3.134	909	956	889	1.064
FIN	Merita NordBanken Group	3.064	1.307	1.330	1.697	1.809	1.244	1.164
FRA	BNP+Paribas	9.736	11.141	9.445	10.280	10.183	9.939	9.630
	Crédit Agricole CA	4.626	4.707	4.161	4.259	3.429	3.155	2.610
	Société Générale	6.479	7.184	6.808	6.129	5.574	4.355	4.166
	Groupe Caisse d'Épargne (**)	142	142	35	40	42	39	NA
	Groupe Banques Populaires (includes Natexis) (**)	3.084	3.084	1.554	1.707	1.733	NA	NA
	Crédit Lyonnais	4.005	5.695	5.589	6.517	7.451	7.342	5.962
	Groupe Caisse des Dépôts (**)	5	5	4	0	2	18	5
	Credit Mutuel Centre Est Europe (**)	2.636	2.636	34	39	NA	NA	NA
	Dexia Crédit Local de France (**)	994	994	977	990	992	877	702
	Crédit Industriel et Commercial - CIC	1.466	1.614	1.428	1.675	1.642	1.330	1.019
	Crédit Commercial de France	697	1.024	802	1.018	1.181	1.104	1.259
	Total	33.871	38.227	30.837	32.654	32.229	28.159	25.354
	GER	Deutsche Bank AG (IAS)	11.053	6.072	5.712	4.969	3.906	3.561
Bayerische Hypo-und Vereinsbank (IAS)		9.401	7.430	5.610	6.081	6.068	4.475	3.938
Westdeutsche Landesbank Girozentrale WestLB (**)		4.371	4.371	3.257	2.754	2.653	2.614	2.067
Dresdner Bank AG (IAS)		8.049	5.956	5.498	NA	NA	NA	NA
Commerzbank AG (IAS)		5.871	4.198	4.062	NA	NA	NA	NA
Bayerische Landesbank Girozentrale (**)		3.965	3.965	3.131	3.203	2.779	1.786	1.426
Deutsche Genossenschaftsbank DG BANK (IAS) (**)		2.531	2.531	2.965	327	290	NA	NA
Landesbank Baden-Wuerttemberg (includes SudWestdeutsche Landesbank) (**)		3.794	3.794	3.571	1.908	854	845	552
Bankgesellschaft Berlin AG (**)		2.477	2.477	1.414	227	199	167	NA
Norddeutsche Landesbank Girozentrale NORD/LB (**)		1.829	1.829	1.517	1.374	1.177	816	534
DePfa Deutsche Pfandbrief Bank AG (**)		542	542	487	496	488	452	398
Landesbank Schleswig-Holstein Girozentrale - LB Kiel (**)		1.317	1.317	1.214	819	621	610	59
Landesbank Hessen-Thuringen Girozentrale - HELABA (**)		897	897	711	714	627	604	423
Deutsche Siedlungs- und Landesrentenbank - DSL Bank (**)		315	315	305	315	312	297	208

	Landesbank Rheinland-Pfalz Girozentrale (**)	569	569	467	424	490	282	240
	Hamburgische Landesbank - Girozentrale	988	898	696	641	NA	NA	NA
	BHW Holdings AG (**)	257	257	238	246	7	NA	NA
	DGZ - DekaBank Deutsche Kommunalbank (**)	190	190	177	203	55	51	46
	BHF-BANK AG (IAS) (**)	261	261	244	NA	NA	NA	NA
	Total	58.677	47.871	41.278	24.702	20.527	16.559	9.890
IRE	Allied Irish Banks plc	1.989	1.136	1.129	794	650	664	756
	Bank of Ireland (3/2000)	1.922	874	904	581	269	428	267
	Total	3.911	2.010	2.033	1.375	920	1.092	1.023
ITA	Banca Intesa (includes BCI)	8.832	6.215	3.858	4.207	1.676	1.632	1.422
	UniCredito Italiano SpA	1.412	1.490	1.683	NA	NA	NA	NA
	San Paolo IMI	1.512	1.774	2.021	2.357	2.137	1.450	1.010
	Banca di Roma	2.506	1.538	1.429	1.588	1.442	501	200
	Banca Monte dei Paschi di Siena SpA (Gruppo)	1.146	564	318	423	300	56	45
	Banca Nazionale del Lavoro SpA - BNL	1.970	1.900	933	1.047	1.248	926	839
	Total	17.379	13.481	10.243	9.621	6.803	4.566	3.515
JNP(*)	Bank of Tokyo - Mitsubishi	18.291	15.874	14.545	15.577	18.022	13.582	12.477
	Fuji Bank Ltd.	20.704	12.940	13.952	12.206	12.794	10.395	9.564
	Sumitomo Bank Ltd	14.079	13.220	12.874	13.074	14.051	10.198	9.276
	Dai-Ichi Kangyo Bank Ltd DKB	13.946	11.549	12.500	11.694	12.001	9.691	8.839
	Sanwa Bank Ltd	13.865	13.341	12.558	12.517	11.841	9.959	9.150
	Sakura Bank Limited (The)	13.432	13.115	12.602	11.953	12.253	9.899	9.241
	Industrial Bank of Japan Ltd	11.987	10.786	7.774	8.609	7.577	6.581	5.690
	Tokai Bank Ltd.	8.304	7.702	6.937	6.759	7.838	6.676	5.605
	Asahi Bank Ltd	8.620	7.284	6.210	6.291	5.572	4.356	3.873
	Long Term Credit Bank of Japan Ltd. LTCB	8.890	8.273	8.534	8.417	7.612	5.202	4.670
	Mitsubishi Trust and Banking Corporation (The)	3.940	2.835	2.534	2.250	1.362	871	798
	Sumitomo Trust & Banking Company Ltd	4.110	3.870	2.003	1.587	1.552	1.081	1.016
	Daiwa Bank Ltd	4.322	4.185	3.491	4.291	4.777	3.124	2.664
	Nippon Credit Bank Ltd (The)	2.308	2.391	3.782	4.584	5.549	3.603	3.251
	Mitsui Trust & Banking Company Limited (The)	3.449	1.908	1.193	1.223	1.231	485	430
	Toyo Trust and Banking Co., Ltd	2.561	2.388	1.674	1.398	971	881	816
	Bank of Yokohama, Ltd (The)	4.528	2.472	2.401	2.699	2.321	1.806	1.648
	Yasuda Trust & Banking Co. (The)	3.303	3.045	2.270	2.529	1.680	1.276	1.226
	Chiba Bank Ltd.	987	NA	NA	NA	NA	NA	NA
	Chuo Trust & Banking Co., Ltd (The)	1.214	NA	NA	1.110	1.119	969	859
	Joyo Bank Ltd.	456	NA	NA	NA	NA	NA	NA
	Hokuriku Bank Ltd.	1.571	NA	1.407	1.355	1.447	1.300	1.043
	Hokkaido Takushoku Bank Ltd (**)	1.874	1.874	2.464	2.729	2.825	2.474	2.316
Total	166.742	139.054	131.704	132.853	134.396	104.407	94.453	
NET	ABN Amro Holding NV	11.039	10.477	9.965	8.780	7.293	6.098	5.318
	ING Group	7.974	8.233	5.132	4.782	3.825	3.216	2.664
	Rabobank Group	60	81	60	22	17	16	0
	Total	19.073	18.791	15.157	13.583	11.135	9.330	7.982
SPA	Banco Santander Central Hispano (Proforma)	8.117	7.241	6.642	6.449	5.470	3.807	2.281
	Banco Bilbao Vizcaya Argentaria SA (Proforma)	3.312	3.474	3.468	3.389	2.477	1.009	666
	Caja de Ahorros y Pensiones de Barcelona, LA CAIXA	1.541	617	590	682	737	679	629

	Caja Madrid	470	538	40	46	49	46	42
	Total	13.442	11.871	10.739	10.566	8.733	5.541	3.619
SWE	Svenska Handelsbanken	2.412	2.870	2.949	1.790	1.926	1.625	1.344
	Foereningssparbanken - Swedbank	3.080	1.075	980	1.158	1.444	1.509	1.356
	Skandinaviska Enskilda Banken	914	1.023	1.288	1.483	1.688	1.986	2.279
	Nordbanken AB (1999 included in Merita)	0	1.056	855	990	1.125	1.299	1.454
	Total	6.406	6.023	6.073	5.421	6.184	6.419	6.433
SWI	UBS AG (IAS)	8.982	9.716	5.323	4.634	4.847	2.631	2.856
	Credit Suisse Group (**)	12.031	12.031	11.431	9.950	8.686	7.102	5.678
	Total	21.013	21.747	16.754	14.584	13.533	9.733	8.534
UK	HSBC Holdings Plc	12.188	7.597	7.281	7.144	5.836	5.388	4.931
	Barclays Bank Plc	4.590	3.314	2.100	2.465	2.576	2.630	3.349
	National Westminster Bank Plc - NatWest	12.153	4.668	4.606	4.337	4.008	4.209	4.208
	Abbey National Plc	5.294	3.996	3.053	2.990	2.793	2.375	1.286
	Lloyds TSB Group plc	5.156	4.164	4.455	4.304	3.568	3.636	1.757
	Halifax PLC	3.876	2.630	2.697	2.620	NA	NA	NA
	Bank of Scotland	3.248	1.092	1.178	1.328	1.370	1.061	861
	Royal Bank of Scotland plc (The)	3.311	2.694	2.325	1.504	1.327	668	414
	Standard Chartered Plc	1.523	363	362	530	609	588	570
	Woolwich Plc	1.361	1.150	1.144	1.111	NA	NA	NA
	Total	52.700	31.668	29.200	28.334	22.088	20.554	17.376
USA	Citigroup	8.773	7.777	7.026	7.162	6.842	6.531	6.186
	Bank of America Corporation (for 1993-97 includes data of Nationsbank Texas)	16.036	16.479	7.571	6.854	5.230	3.637	3.238
	Chase Manhattan Corporation (The)	8.689	8.484	8.197	8.498	3.260	2.989	2.520
	Bank One Corporation (includes First Chicago NBD Corp.)	7.337	7.339	6.760	5.747	4.939	2.604	2.498
	J.P. Morgan & Co. Incorporated	6.130	5.114	5.675	4.261	4.077	3.875	3.047
	First Union Corporation	6.723	9.526	5.298	4.295	3.115	2.212	1.767
	Wells Fargo & Company	2.587	2.719	2.199	2.550	1.066	1.260	1.515
	Fleet Boston Financial Corporation (for 1993-98 includes data of BankBoston Corp)	6.681	6.080	4.069	3.479	2.929	2.574	2.080
	Suntrust Banks, Inc.	1.377	1.377	950	850	200	200	109
	HSBC USAs Inc.	3.428	622	622	747	324	324	324
	National City Corporation	3.180	1.951	1.585	1.660	1.063	591	348
	KeyCorp	2.703	2.710	2.130	2.134	1.107	890	597
	US Bancorp	2.950	3.057	2.057	1.257	1.132	732	532
	PNC Financial Services Group.	2.227	1.581	1.496	1.155	1.460	746	547
	Bank of New York Company, Inc. (The)	2.726	1.984	1.746	1.746	1.762	1.694	1.395
	Bankers Trust Corporation	3.460	3.959	3.668	2.653	2.252	1.943	2.089
	Wachovia Corporation	2.290	2.768	1.473	1.322	1.328	831	584
	ABN AMRO North America, Inc.	1.096	896	741	484	362	361	269
	State Street Corporation	2	2	3	3	3	3	4
	California Federal Bank, a Federal Savings Bank	99	105	98	54	55	64	64
	Republic New York Corporation (absorbed by HSBC in 12/99)	0	2.646	2.650	2.400	2.406	2.406	2.272
Total	88.493	87.178	66.013	59.311	44.912	36.467	31.984	

(*) Year-end March 31 data for Japanese Banks are reported. (**) 1998 data reported for 1999 when 1999 not available.