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SHOULD A MANDATORY SUBORDINATED DEBT POLICY BE INTRODUCED IN THE UNITED KINGDOM? EVIDENCE FROM THE ISSUANCE ACTIVITY OF BANKS AND BUILDING SOCIETIES

PAUL HAMALAINEN, BARRY HOWCROFT and MAXIMILIAN HALL*

Current research is beginning to question the role and effectiveness of traditional rules-based bank regulatory oversight in favor of incentive-compatible regulatory design and market discipline and, in particular, mandatory subordinated debt market discipline. However, research on the suitability of a mandatory subordinated debt policy (MSNDP) has focused primarily on the United States. The primary aims of this article, therefore, are to examine the market for subordinated debt (SND) issued by UK credit institutions and to assess the suitability of introducing an MSNDP into UK banking regulation. A further contribution of this article is that it explores SND issuance and its characteristics at a bank level and, uniquely, considers them in relation to regulatory, structural, and economic events that either are specific to the UK or otherwise affect international banks. The article compares the UK findings with research on SND markets in the United States and Europe and, in so doing, raises concerns over whether an MSNDP for the largest global credit institutions would be feasible. Although the focus of this study is the UK banking industry, the country-focused bank-level approach provides conclusions that might be relevant to other countries considering the implementation of an MSNDP.

I. INTRODUCTION

Given that current debates on the future direction of bank regulatory design question the role and effectiveness of rules-based financial regulatory oversight, in favor of incentive-compatible regulatory design and market discipline, the primary objective of this article is to assess the suitability of introducing a specific form of market discipline, namely, a

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mandatory subordinated debt policy (MSNDP), in UK banking.

Accordingly, the article analyzes UK credit institutions' subordinated debt (SND) issuance between January 1985 and December 2002 and relates this to the most frequently suggested MSNDP characteristics. Sironi (2001) is unique in exploring European (EU) banks' SND issues (covering 17 countries); however, his pan-EU country-level perspective clouds the potential richness of the conclusions. For example, he ignores building societies despite their ability to issue SND and their conversion to the same regulatory regime as UK banks. Moreover, his study indicates that over the data period, 21 UK banks have issued SND at an average of 10 issues per issuer; however, only data on the 10 largest are provided.

An important contribution of this article is that it explores SND issues and their characteristics at a bank level and, also uniquely, considers them in relation to regulatory, structural, and economic events that either are specific to

ABBREVIATIONS

MSNDP: Mandatory Subordinated Debt Policy
RWA: Risk-Weighted Assets
SND: Subordinated Debt

the UK or affect international banks. This approach raises, *inter alia*, the following issues: how have SND issues and their characteristics been affected by the introduction of the 1988 Basel Capital Accord and the Euro-currency?

As a result, a number of important considerations, underpinning the proposals for an MSNDP, are investigated, and their impact on market discipline in the UK context, and internationally, is examined. This raises a number of significant questions. For example, what, if at all, should be the scope and structure of an MSNDP? Although the focus of this study is the UK banking industry, the unique bank-level approach provides conclusions that may be equally relevant to other countries considering the introduction of an MSNDP.

The article is split into five sections. Section II surveys the literature concerning market discipline and explains the details underpinning proposals for mandatory SND market discipline. Sections III and IV examine the characteristics of UK credit institutions' SND issues over the period 1985–2002. In Section V, these characteristics are analyzed in relation to MSNDP proposals. Section VI provides a summary of the main findings and draws conclusions that, *inter alia*, relate to the implications for UK banks and bank regulation of implementing an MSNDP.

II. MANDATORY SND AND MARKET DISCIPLINE¹

A. *Regulating Bank Behavior*

An increasingly important issue in the supervision of credit institutions concerns the extent to which market investors can recognize and control bank risk taking (Bliss, 2001; Bliss and Flannery, 2001; Flannery, 2001; Hamalainen, Hall, and Howcroft, 2003). As the U.S. Department of the Treasury (1991) states: “In virtually all of the discussions of financial system reform, a key topic is whether and how increased market discipline can substitute for regulatory discipline to redress some of the moral hazard and efficiency problems in banking.” Recent proposals from the United States (2000) and the European Shadow Financial Regulatory Committees (1999 and 2000), as well as

1. Parts of this section summarize some key points and themes from Hamalainen (2004). Refer to that article for an expanded discussion.

significant research by the Board of Governors of the Federal Reserve System (2000) and Kwast et al. (1999), have raised the profile of market discipline (in particular, mandatory SND market discipline) as a suitable regulatory policy.²

Lane (1993) defines market discipline as follows: “financial markets providing signals that lead borrowers (in this case, banks) to behave in a manner consistent with their solvency.” Accordingly, market discipline can be signaled by all three classes of private bank stakeholders: depositors, debt holders, and equity holders. Excessive risk taking by deposit-taking institutions provides a classic example of the market disciplinary process. Faced by increasing costs and greater uncertainty, depositors can either demand a higher return or withdraw their deposits. The threat of action, therefore, imposes discipline by signaling to deposit-taking institutions the riskiness of their activities. Similarly, debt holders can demand a higher yield on bank debt, thereby increasing the cost of funds for riskier institutions. Likewise, equity holders can sell their shares, thereby putting downward pressure on share prices and placing management under increased scrutiny.

The literature discusses how there are two potential forms of market discipline: direct and indirect market discipline. Investors exert direct market discipline when a bank's cost of issuing a financial instrument increases or its ability to issue debt deteriorates with an increase in its risk profile. Indirect market discipline occurs when risk signals are used by interested parties to initiate disciplinary action on banks (Evanoff and Wall, 2001). For example, the regulatory authorities might use the secondary market prices of uninsured liabilities or a bank's inability to issue new uninsured debt as signals to conduct more frequent examinations of banks where these market measures of risk have increased.

Hamalainen (2004) discusses how SND holders, in contrast to other bank stakeholders, are

2. The international banking regulatory authorities themselves have reacted to calls to enhance market discipline with the “Third Pillar” of the new Basel Capital Accord focusing on market discipline (Basel Committee on Banking Supervision, 2005). However, this pillar solely concentrates on improving bank disclosure, and although adequate and timely disclosure is a necessary condition for effective market discipline, it is not a sufficient condition on its own. Equally important is to create investors who consider themselves at risk in the event of default, hence the proposals to introduce a mandatory SND requirement.

best placed to satisfy a two-stage framework for effective market discipline. As SND has no insurance, it is among the first to lose value in the event of bank failure. From a regulator's perspective, SND provides the same cushioning effect to the deposit insurance scheme as equity but without the risk-taking incentive of equity holders. Furthermore, compared to certificates of deposit, the relatively long maturity of SND limits the investor's ability to avoid sharing in the cost of failure. Under international banking regulations, credit institutions can already voluntarily issue SND and include it as part of their regulatory capital for solvency purposes.³ However, an MSNDP takes the argument one step further by suggesting that credit institutions must make regular and large issues of SND in the market. Regular calls on the debt market will provide mandatory SND investors with a significant governance mechanism that is, by its nature, infrequently applied by providers of equity finance.⁴ These would subject credit institutions to frequent monitoring and direct discipline signaling. From an indirect perspective, regular mandatory debt issuance may create a liquid, deep, and stable stock of securities in the secondary market, enhancing the quality of indirect discipline price information.

Therefore, the aim of mandatory SND proposals was to create a significantly large class of financially sophisticated and uninsured investors who will be subject to loss if a bank becomes insolvent. These investors, therefore, would have a substantial financial incentive to monitor, accurately assess, and price bank risk. It follows that they would signal and discipline bank risk taking and provide market signals to the regulatory authorities, thereby enhancing their disciplinary options.

3. In line with international capital adequacy regulations, UK banks can currently hold up to 100% of Tier 1 capital in the form of Tier 2 capital. Tier 2 capital is composed of two elements: Upper Tier 2 (reserves, provisions, and perpetual SND) and lower Tier 2 (term SND). Credit institutions can hold up to 50% of Tier 1 capital in the form of lower Tier 2 term SND. Furthermore, institutions can hold Tier 3 capital (term SND with a minimum original maturity of 2 yr) to meet trading book exposures. However, in the United Kingdom, total Tier 2 and Tier 3 capital must not exceed Tier 1 capital.

4. Data from the Basel Committee on Banking Supervision (2003) confirm that large UK banks undertook only nine equity issues during the period 1990–2001. In contrast, there were 270 issues of SND by large UK banks between 1989 and 2002.

B. Mandatory SND Proposals

Table 1 reproduces a table from Hamalainen (2004) summarizing mandatory SND proposals under key headings. A review of these proposals indicates a range of maturities from at least 1- and up to 5-yr initial term. The frequency of issuance ranges from semi-annual to quarterly issuance activity, with some proposals recommending the percentage of debt that should mature each period. Finally, to leave a significant proportion of SND holders constantly exposed to the costs of failure, the amount of outstanding SND should typically be between 2% and 5% of an institution's risk-weighted assets (RWA). In Section IV, these policy proposals are compared to the characteristics of UK credit institutions' SND.

Proponents of mandatory SND requirements recognize that there are limitations and costs attached to such a policy. Potential costs borne by banks may include costs associated with forced SND issuance, costs associated with a "second-best" capital structure, and costs associated with a possible reduction in funding options. The requirement to issue regular sizeable amounts of SND may impose an excessive regulatory burden on smaller banking organizations. Therefore, some SND proposals agree that small banks should be exempt. For large banks, a key concern is whether an MSNDP would adjust bank capital structures from the unconstrained optimum, including crowding out equity capital. SND and equity provide a buffer against unexpected losses. But fundamentally, a bank with an insufficient magnitude of equity capital would provide shareholders with the incentive to invest in excessively risky projects because the project risk will be borne primarily by debt holders and the deposit insurance scheme. Despite debt holders' appearing to provide bank market disciplinary effects that are superior to equity capital, it is in the interests of debt holders to ensure that the equity buffer does not become too low (European Shadow Financial Regulatory Committee, 2000). To ensure that an MSNDP does not force banks to lever themselves above the unconstrained optimum and crowd out other categories of funding, proponents of mandatory SND requirements recognize the need to restrict the level of SND that a bank would have to issue.

TABLE 1
A Summary of Mandatory SND Proposals

Reference	Recognition Phase Criteria		Control Phase Criteria	
	Debt Maturity	Frequency of Issue	Debt Size	Additional Control Features
Horvitz (1984, 1987)	x	x	./ Discussed, but no specific details proposed	./ Discusses the control characteristics of debt holder covenants, but no specific details proposed
Benston et al. (1986)	./ Discussed, but no specific details proposed	./ Discussed, but no specific details proposed	./ 3–5% of deposits	./ Covenants to restrict risky banks' activities
Keehn (1989)	./ Subordinated bonds would have maturities of greater than 5 yr	./ Staggered to ensure debt maturity in any 1 yr is greater than 10% but less than 20% of issued subordinated debt	./ Minimum of 4% of subordinated debt to risk assets	./ Some debt is puttable ./ Progressively increased sanctions as a bank's performance deteriorates (similar to the prompt corrective action provisions of FDICIA)
Cooper and Fraser (1988)	./ Should not be long term	./ Rolled over at frequent intervals	./ 3% of deposits	./ Bonds would be puttable at 95% of par ./ Failure by the bank to repurchase within a prescribed period would trigger revocation of its charter
Wall (1989)	./ Minimum maturity of 90 d	./ Discussed, but no specific time period proposed	./ Minimum of 4–5% of RWA	./ Bonds would be puttable ./ Exercise of put would force a bank to raise new debt or sell assets to meet debt size criteria within 90 d; otherwise, it would be deemed insolvent ./ Restrictions on % of debt owned by insiders
Evanoff (1993)	./ Long enough to tie debt holders to the bank (e.g., 5 yr)	./ Semi-annual calls on the market	./ A significant proportion of total regulatory capital (e.g., 50%)	./ Progressively increased sanctions as a bank's performance deteriorates (similar to the prompt corrective action provisions of FDICIA) ./ Possible issue of puttable debt, the exercise of which would force a bank to raise new debt within 90 d; otherwise, it would be taken over by regulators
Calomiris (1997)	x	./ Discusses the rollover of overlapping generations of debt, but no specific time period proposed	./ 2% of nonreserve assets or 2% of RWA	./ Debt yield would be restricted to 50 basis points above a riskless rate ./ "Insiders" excluded from holding sub debt
Litan and Rauch (1997)	./ At least 1 yr	./ A fraction due in each quarter	./ Minimum of 1–2% of RWA	x
Bankers Round Table (1998)	x	x	./ Minimum of 2% of liabilities	x
Calomiris (1999)	./ 2 yr	./ 1/24th of the issue would mature each month	./ Minimum of 2% of risky assets	./ Debt rates would be capped at a spread above treasury rates
U.S. Shadow Financial Regulatory Committee (2000)	./ At least 1 yr	./ At least 10% of debt would have to mature in each quarter	./ Minimum of 2% of risky assets	./ Progressively increased sanctions as a bank's performance deteriorates (similar to the prompt corrective action provisions of FDICIA) ./ Debt must be sold at arm's length

Continued

TABLE 1
Continued

Reference	Recognition Phase Criteria		Control Phase Criteria	
	Debt Maturity	Frequency of Issue	Debt Size	Additional Control Features
Evanoff and Wall (2001)	./ 5 yr	./ Minimum two issues per year, with each issue at least 2 mo apart	./ Minimum of 3% of RWA	./ Tie debt yields to the "trip wires" under prompt corrective action such that progressively increased sanctions are imposed as a bank's performance deteriorates

Note: Key: ./, issue considered; x, issue not considered; FDICIA, Federal Deposit Insurance Corporation Insurance Act.
Source: Hamalainen (2004).

III. UK CREDIT INSTITUTIONS' SND ISSUES 1985–2002

Sironi (2001) illustrates that, at the end of 1999, SND issues by EU banks represented over 46% of the world's outstanding amount of bank SND. After France and Germany, the United Kingdom is one of the most active primary markets for credit institution SND in Europe, and in value terms, it is the largest market in Europe.⁵ Furthermore, 8 of the largest 23 EU banks by size of assets were United Kingdom owned (as at the end of 1999). An examination of one of the most active SND markets in Europe combined with a country-focused perspective, therefore, provides an authoritative insight into the influences on issuance activity and a unique approach to assessing the appropriateness of an MSNDP.

A. Methodology

The literature provides two approaches to examining credit institution SND issuance activity and characteristics. Covitz, Hancock, and Kwast (2004) estimate a probit model for the SND issuance decision by U.S. bank holding companies. They report that larger banking organizations are more likely to issue SND and those banks with poor supervisory ratings are less likely to issue SND during certain periods. An alternative approach is provided by Sironi (2001). He analyzes EU banks' SND issues using descriptive statistics to consider the design of an MSNDP.

The authors investigated the creation of a probit issuance model, but it proved fundamentally difficult to construct in the UK context for

two reasons. First, all previous studies applying this technique have been able to use quarterly accounting data. In the United Kingdom, these data can only be obtained on an annual basis, thereby severely restricting our sample size. Furthermore, combining a probit technique with annual data means that there would be insufficient examples of when a UK credit institution has not issued SND during a year. The second issue is that the United Kingdom does not have enough credit institutions to create sufficient data points in the model, which could have been a way of overcoming the annual data problem. Linked to this, it would be important to include the recessionary period 1989–1992 in a UK issuance decision model as this is the only time period that could provide some yearly data where individual banks have not issued SND. However, building societies have only been able to issue both perpetual and term SNDs like banks since mid-1991, and so it would be inappropriate to include building societies prior to this date as it was not a level playing field. Ignoring building societies for the 1989–1991 time period would simply compound an already problematic sample size issue.

Therefore, this study is in the spirit of the one conducted by Sironi (2001) in that it analyzes SND characteristics using descriptive statistics. However, it differs in two distinct ways. First, to answer the question posed in the title of the article, the SND data are compared with the desirable MSNDP characteristics proposed in the literature. Second, this study focuses on one country and explores SND issuance and its characteristics at the bank level. As a result, it raises concerns that credit institution SND issuance is not as similar in different countries as the existing literature suggests.

5. See Sironi (2001) for EU-wide data that cover the period 1988–2000.

B. Data Sources

The research covers all SND issues by UK credit institutions over the period 1985–2002. This period was selected to cover the introduction of the Basel Accord (at the end of 1989 in the United Kingdom) and also to capture a period of particular difficulty for UK credit institutions in the aftermath of the Latin American debt crisis and the domestic recession of the early 1990s. The details of the SND issues were obtained from the Bondware database, which was supported by balance sheet information from Bankscope and credit ratings information from Moody's.

C. Issuance Activity

Table 2 outlines the general characteristics of UK credit institutions' SND issues over the sample period 1985–2002. The total number of issues between January 1985 and December 2002 was 390, that is, an average of 22 per year. However, this hides periods of markedly different issuance activity. For example, there was a sharp increase in the number of SND issues after 1998 (average of 46 issues per year). Equally, between 1985 and 1998, the average value of SND issues was \$3,783 million per year. However, from 1999 onwards, this rises significantly, culminating in an average for the past 4 yr of \$19,115 million per year. No building societies issued SND until 1988 as they were restricted from doing so until the passing of the Building Societies Act 1986.⁶ Nevertheless, the period 1989–1992 indicates a period of reduced issuance activity both in the number of issues (average of 10 per year) and total value of issues (average of \$2,008 per year). The period 1993–1998 was fairly stable with the number of issues ranging from 14 to 26 per year and the value of issues ranging from \$3,332–\$7,320.

The large rise in issues after 1998 can be explained by a number of factors. The introduction of the euro in 1999, for example, appears to have had a significant influence on issuing activity. The Bank for International Settlements (2000) suggests that structural factors are the primary reason for the surge in euro-denominated debt in 1999, in particular the significant expansion in the investor base and the portfolio diversification opportunities presented

to investors. However, Table 3 also illustrates that the growth in sterling and U.S. dollar-denominated issues was equally spectacular. This suggests that it was favorable debt market conditions that prompted the large growth in SND issues by UK credit institutions after 1998. The period was marked by a reduction in the supply of government debt issuance, which led investors to search for highly rated issuers as substitutes for benchmark pricing.⁷ As a result, when yield spreads increased during this period, although the number of high-yield issues reduced, investors found high-quality corporate bonds a suitable substitute for the lack of government instruments (Bank for International Settlements, 2001). Moreover, the sharp correction in the equity markets from 2000 onwards has made the issuance of equity instruments less attractive and further encouraged the shift of excess funds into debt instruments. As a result, the private sector has probably responded to the new availability of funds by issuing record amounts of debt. In addition, the global economic slowdown and the consequent reduction in the demand for industrial working capital, combined with the historically low long-term yields, have encouraged borrowers to extend the maturity of their debt (Bank for International Settlements, 2002). Table 5 illustrates a significant rise in perpetual SND issues over the period 1999–2002, suggesting that such a policy was particularly evident in the United Kingdom.

The low SND issuance over the period 1989–1992 also appears to reflect the state of the debt market and the general economic climate during that period. The Bank of England (1991) stated at the time that “unfavourable market conditions allowed only a small number of SND issues to be eligible for inclusion in the capital base.” A tightening of monetary policy had led to historically high long-term interest rates. Moreover, the wholesale funding markets were nervous because of the Middle East conflict, the financial pressures on smaller UK banks following the closure of the Bank of Credit and Commerce International (BCCI) and British and Commonwealth Merchant Bank (Hall, 1999), and the UK's uncertain position with regard to the exchange rate mechanism (ERM). The severe domestic recession around this time also led to a period of low growth in new business

6. Five building societies brought issues to the market during that year, and four of them were in the group of the six largest societies as at the end of 1987.

7. All UK credit institutions that have issued SND have current Moody's Financial Strength Ratings of C and above, with nearly all banks in the Category B.

TABLE 2
UK Credit Institutions' SND Issues by Year (1985–2002)

Year	No. of Issues	No. of Issuers	Average/ Issuer	Fixed-Rate Issues				Perpetual Issues				Callable Issues				Average First Call Date (yr)	SD (yr)
				No.	% of Total	Amount (\$m)	% of Total	No.	% of Total	Amount (\$m)	% of Total	No.	% of Total	Amount (\$m)	% of Total		
1985	15	9	1.67	0	0.0	0	0.0	13	86.7	6,190	92.6	15	100.0	6,685	100.0	5	1
1986	10	6	1.67	1	10.0	244	7.2	6	60.0	2,450	71.9	9	90.0	3,164	92.8	5	0
1987	4	3	1.33	2 ^a	66.6	847 ^a	75.2	0	0.0	0	0.0	2	50.0	546	42.9	6	6
1988	23	10	2.30	9	39.1	1,762	40.3	1	4.3	350	8.0	13	56.5	2,219	50.7	5	0
1989	13	8	1.63	2	15.4	288	10.3	4	30.8	1,501	53.9	9	69.2	2,351	84.5	5	0
1990	6	6	1.00	3	50.0	750	48.3	1	16.7	514	33.1	3	50.0	804	51.7	7	3
1991	9	7	1.29	5 ^a	62.5	1,235 ^a	87.5	0	0.0	0	0.0	4	44.4	676	46.6	5	4
1992	13	10	1.30	11	84.6	2,128	94.9	1	7.7	304	13.6	5	38.5	893	39.8	16	11
1993	24	13	1.85	21 ^a	91.3	4,523 ^a	92.8	9	37.5	2,091	39.7	11	45.8	3,049	58.0	11	7
1994	14	8	1.75	9 ^a	75.0	2,670 ^a	84.6	4	28.6	590	17.7	5	35.7	1,124	33.7	8	3
1995	18	8	2.25	13	72.2	3,068	79.2	8	44.4	1,425	36.8	7	38.9	1,074	27.7	11	7
1996	26	14	1.86	22	84.6	6,554	89.5	8	30.8	1,914	26.1	14	53.8	3,380	46.2	10	6
1997	17	11	1.55	11	64.7	3,446	66.8	7	41.2	1,971	38.2	11	64.7	3,241	62.8	10	6
1998	15	8	1.88	14	93.3	4,160	96.7	4	26.7	972	22.6	7	46.7	1,551	36.1	14	10
1999	54	15	3.60	40	74.1	16,456	80.0	19	35.2	6,229	30.3	28	51.9	8,979	43.7	10	8
2000	47	14	3.36	40	85.1	17,927	91.2	32	68.1	15,970	81.3	37	78.7	17,467	88.9	13	7
2001	39	12	3.25	36	92.3	15,784	96.2	25	64.1	10,420	63.5	27	69.2	11,552	70.4	15	9
2002	43	11	3.91	33	76.7	17,948	90.5	17	39.5	10,102	50.9	30	69.8	12,807	64.6	14	9
Total	390			235	70.6	90,515	72.4	159	40.8	62,993	48.7	237	60.8	81,562	63.0	10.7	7.7

Note: Average issues/yr 22.

^aData were not available for all issues in that year; hence, the percentages do not equate exactly with the total number (and value) of issues reported in this table.

TABLE 3
UK Credit Institutions' Annual SND Issues by Currency Denomination (1985–2002)

Year	No. of Issues	Amount (\$m)		Amount by currency (\$m equivalent) ^a													
		Amount	Mean	GBP	US\$	Yen	DM	FFR	LFR	DFL	LIT	Euro Currency Total	Euro	SFR	HKG\$	C\$	
1985	15	6,685	445.7	285 (2)	6,400 (13)	—	—	—	—	—	—	—	—	—	—	—	—
1986	10	3,408	340.8	582 (2)	2,450 (6)	244 (1)	132 (1)	—	—	—	—	132 (1)	—	—	—	—	—
1987	4	1,272	318.0	447 (1)	680 (2)	—	—	146 (1)	—	—	—	146 (1)	—	—	—	—	—
1988	23	4,376	190.3	2,747 (17)	1,450 (5)	—	179 (1)	—	—	—	—	179 (1)	—	—	—	—	—
1989	13	2,783	214.1	1,342 (6)	1,300 (5)	38 (1)	104 (1)	—	—	—	—	104 (1)	—	—	—	—	—
1990	6	1,554	259.0	1,286 (4)	250 (1)	—	—	—	18 (1)	—	—	18 (1)	—	—	—	—	—
1991	9	1,452	161.3	952 (8)	500 (1)	—	—	—	—	—	—	—	—	—	—	—	—
1992	13	2,242	172.5	2,007 (9)	75 (1)	—	—	—	47 (2)	113 (1)	—	160 (3)	—	—	—	—	—
1993	24	5,261	219.2	3,673 (19)	1,200 (4)	—	—	—	—	—	—	—	—	—	—	388 (1)	—
1994	14	3,332	238.0	2,056 (9)	1,100 (3)	—	—	—	—	—	—	—	—	102 (1)	—	—	75 (1)
1995	18	3,874	215.2	2,217 (13)	1,434 (4)	224 (1)	—	—	—	—	—	—	—	—	—	—	—
1996	26	7,320	281.5	4,600 (16)	2,150 (7)	340 (2)	230 (1)	—	—	—	—	230 (1)	—	—	—	—	—
1997	17	5,160	303.5	4,360 (15)	800 (2)	—	—	—	—	—	—	—	—	—	—	—	—
1998	15	4,300	286.7	1,263 (4)	950 (3)	63 (1)	964 (3)	328 (2)	—	—	140 (1)	1,432 (6)	592 (1)	—	—	—	—
1999	54	20,568	380.9	4,327 (17)	8,275 (19)	—	—	—	—	—	—	—	7,966 (18)	—	—	—	—
2000	47	19,654	418.2	7,761 (26)	8,275 (13)	—	—	—	—	—	—	—	3,617 (8)	—	—	—	—
2001	39	16,409	420.7	6,344 (22)	5,125 (9)	352 (1)	—	—	—	—	—	—	4,588 (7)	—	—	—	—
2002	43	19,830	461.2	8,250 (19)	6,800 (14)	—	—	—	—	—	—	—	4,779 (10)	—	—	—	—
Total	390	129,480	332.0	54,499 (209)	49,214 (112)	1,261 (7)	1,609 (7)	474 (3)	65 (3)	113 (1)	140 (1)	2,401 (15)	2,1542 (44)	102 (1)	388 (1)	75 (1)	—
Average issue size (by currency)				261	439	180	230	158	22	113	140	160	490	102	388	75	—

GBP, British pounds; DM, deutsche mark; FFR, French franc; LFR, Luxembourg franc; DFL, Dutch florin; LIT, Italian lira; SFR, Swiss franc; HKG, Hong Kong dollar; C, Canadian dollar.

^aIn parentheses are the number of issues in that currency during the year.

Source: Bondware.

Year	<5 Yr	5 Yr	5–10 Yr	10 Yr	10–15 Yr	15 Yr	15–20 Yr	20 Yr	>20 Yr	Perpetuals	Total	Average Initial Maturity ^b
1985	0	0	0	0	0	1	0	1	0	13	15	17.5
1986	0	0	0	2	1	1	0	0	0	6	10	11.75
1987	0	0	0	3	0	0	0	0	1	0	4	15.0
1988	0	0	0	16	1	2	0	1	2	1	23	12.38
1989	0	0	0	2	1	4	1	1	0	4	13	14.62
1990	0	1	1	2	0	1	0	0	0	1	6	9.4
1991	0	0	0	4	1	1	0	1	2	0	9	15.6
1992	0	0	1	7	0	1	1	0	2	1	13	13.83
1993	0	0	2	3	0	2	0	1	7	9	24	18.63
1994	0	0	0	6	0	3	0	0	1	4	14	12.6
1995	0	1	1	4	1	1	0	0	2	8	18	12.94
1996	0	0	0	7	1	6	1	0	3	8	26	14.47
1997	0	0	0	5	0	3	1	0	1	7	17	13.73
1998	2	0	0	4	1	1	0	0	3	4	15	13.01
1999	2	0	0	15	10	1	0	3	4	19	54	12.84
2000	0	0	0	6	4	1	1	1	2	32	47	12.87
2001	0	0	0	2	5	1	0	0	6	25	39	19.1
2002	0	0	0	9	8	3	1	3	2	17	43	13.76
Total	4 (1)	2 (1/2)	5 (1)	97 (25)	34 (9)	33 (9)	6 (2)	12 (3)	38 (10)	159(41)	390	14.03

^aIn parentheses is the percentage of the total number of issues.

^bExcluding perpetual issues.

Source: Bondware.

activity, a rise in bad debt problems, and pressure on profit margins, which led banks to focus on improving the efficiency of their operations. The Bank of England (1990) stated, “With income growth from traditional business ever more difficult to achieve, there was a continuing emphasis on cost control, and on less capital-intensive, fee-based income sources.” This, in turn, may have dampened the supply of new capital issues. The Bank of England (1990) also reported, “A number of banks have disposed of assets in order to improve their [capital] ratios.” A further explanation could be that in attempting to meet the Basel Accord convergence criteria, EU bank SND issues increased significantly from 1988 onwards. As a result, the stock of SND in the international capital markets could have caused an oversupply that may have deterred UK credit institutions, which were already meeting the Basel criteria, from issuing further debt.

A consequence of banks, appearing to access SND markets when conditions are favorable is that it may provide a bias in studies that examine

market discipline through primary market yield spread data.

D. Maturity Characteristics

UK credit institutions typically issue perpetual debt or debt that has an initial maturity of just greater than 10 or 15 yr. In contrast, the issuance of SND with an initial maturity of less than 10 yr has been very infrequent over the sample period (Tables 4–6). These tables illustrate that perpetual debt issues are extremely frequent in the United Kingdom, representing 41% of all issues over the sample period and 49% of the total value of SND issues (Table 2). This is high compared to that of other EU countries.⁸

Table 5 breaks the issuance data into the periods of distinct issuance activity discussed above and highlights that, between 1985 and 1988, perpetual debt was significant along with 10-yr issues (both maturities representing 78% of

8. Sironi (2001) illustrates that, between 1988 and 2000, perpetual issues in France represented only 7% of all SND issues and in Germany 2% of all issues.

TABLE 5
SND Maturity Characteristics for Periods of Years

Year	<5 Yr	5 Yr	5-10 Yr	10 Yr	10-15 Yr	15 Yr	15-20 Yr	20 Yr	>20 Yr	Perpetuals	Total	Av.m
1985	0	0	0	0	0	1	0	1	0	13	15	
1986	0	0	0	2	1	1	0	0	0	6	10	
1987	0	0	0	3	0	0	0	0	1	0	4	
1988	0	0	0	16	1	2	0	1	2	1	23	
1985-1988	0 (0%)	0 (0%)	0 (0%)	21 (40%)	2 (4%)	4 (8%)	0 (0%)	2 (4%)	3 (6%)	20 (38%)	52	12.95
1989	0	0	0	2	1	4	1	1	0	4	13	
1990	0	1	1	2	0	1	0	0	0	1	6	
1991	0	0	0	4	1	1	0	1	2	0	9	
1992	0	0	1	7	0	1	1	0	2	1	13	
1989-1992	0 (0%)	1 (2%)	2 (5%)	15 (37%)	2 (5%)	7 (17%)	2 (5%)	2 (5%)	4 (10%)	6 (15%)	41	13.86
1993	0	0	2	3	0	2	0	1	7	9	24	
1994	0	0	0	6	0	3	0	0	1	4	14	
1995	0	1	1	4	1	1	0	0	2	8	18	
1996	0	0	0	7	1	6	1	0	3	8	26	
1997	0	0	0	5	0	3	1	0	1	7	17	
1998	2	0	0	4	1	1	0	0	3	4	15	
1993-1998	2 (2%)	1 (1%)	3 (3%)	29 (25%)	3 (3%)	16 (14%)	2 (2%)	1 (1%)	17 (15%)	40 (35%)	114	14.53
1999	2	0	0	15	10	1	0	3	4	19	54	
2000	0	0	0	6	4	1	1	1	2	32	47	
2001	0	0	0	2	5	1	0	0	6	25	39	
2002	0	0	0	9	8	3	1	3	2	17	43	
1999-2002	2 (1%)	0 (0%)	0 (0%)	32 (17%)	27 (15%)	6 (3%)	2 (1%)	7 (4%)	14 (8%)	93 (51%)	183	14.09
Total	4 (1%)	2 (1/2%)	5 (1%)	97 (25%)	34 (9%)	33 (9%)	6 (2%)	12 (3%)	38 (10%)	159 (41%)	390	14.03

Av.m, average initial maturity.
Source: Bondware.

all SND issues). The large number of perpetual debt issues in 1985 and 1986 reflect the fact that, as of May 1985, the Bank of England accepted floating rate perpetual debt as “primary capital” (Hall, 1999).⁹ However, when total SND issues waned (1989–1992), the proportion of perpetual debt dropped significantly, presumably in response to the historically high long-term interest rates discussed above. In contrast, 10-yr bonds remained important, and there was an increase in 15-yr benchmark bonds. However, when long-term interest rates began to fall, the period 1993–1998 saw perpetual debt, together with 10-yr bonds, becoming the most common maturities for SND issues. As total SND issues increased significantly during 1999–2002, the overriding preference was to take advantage of historically low long-term interest rates and issue perpetual debt (51% of all issues and 56% of the value of all issues were perpetuals). During this period, the issuance of 10- and 15-yr

benchmarks was replaced by debt with a maturity of between 10 and 15 yr.

Table 6 looks at the maturity characteristics of bonds issued pre and post the introduction of the Basel Capital Accord. The United Kingdom moved immediately to implement the Basel convergence agreement at the end of December 1989, and therefore the table has been divided to reflect domestic policy. This shows that there has been a movement post the Basel Accord to issue bonds across the maturity spectrum, but in general, the Basel Accord has had little effect on UK SND issues with nearly all still being equal to or in excess of 10 yr in maturity. The final columns in Tables 4–6 appear to confirm the apparent unimportance of the Basel Accord on UK SND maturities. They indicate that the average initial maturity of nonperpetual debt issues has not shifted significantly over the period 1985–2002. What is of note, however, is that the introduction of the Capital Adequacy Directive in 1996 has given rise to some shorter-dated issues (although they are still very small in number), which can be used as Tier 3 capital. The apparent unimportance of the Basel

9. It is clear from the data that, from May 1, 1985, all perpetual debt issues for the next 2 yr were floating rate issues.

Year										Average		
	<5 Yr	5 Yr	5-10 Yr	10 Yr	10-15 Yr	15 Yr	15-20 Yr	20 Yr	>20 Yr	Perpetuals	Total	Initial Maturity
1985	0	0	0	0	0	1	0	1	0	13	15	
1986	0	0	0	2	1	1	0	0	0	6	10	
1987	0	0	0	3	0	0	0	0	1	0	4	
1988	0	0	0	16	1	2	0	1	2	1	23	
1989	0	0	0	2	1	4	1	1	0	4	13	
1985-1989	0 (0%)	0 (0%)	0 (0%)	23 (35%)	3 (5%)	8 (12%)	1 (2%)	3 (5%)	3 (5%)	24 (37%)	65	13.32
1990	0	1	1	2	0	1	0	0	0	1	6	
1991	0	0	0	4	1	1	0	1	2	0	9	
1992	0	0	1	7	0	1	1	0	2	1	13	
1993	0	0	2	3	0	2	0	1	7	9	24	
1994	0	0	0	6	0	3	0	0	1	4	14	
1995	0	1	1	4	1	1	0	0	2	8	18	
1996	0	0	0	7	1	6	1	0	3	8	26	
1997	0	0	0	5	0	3	1	0	1	7	17	
1998	2	0	0	4	1	1	0	0	3	4	15	
1999	2	0	0	15	10	1	0	3	4	19	54	
2000	0	0	0	6	4	1	1	1	2	32	47	
2001	0	0	0	2	5	1	0	0	6	25	39	
2002	0	0	0	9	8	3	1	3	2	17	43	
1990-2002	4 (1%)	2 (1%)	5 (2%)	74 (23%)	31 (10%)	25 (8%)	5 (2%)	9 (3%)	35 (11%)	135 (42%)	325	14.19
Total	4 (1%)	2 (1/2%)	5 (1%)	97 (25%)	34 (9%)	33 (9%)	6 (2%)	12 (3%)	38 (10%)	159 (41%)	390	14.03

Source: Bondware.

Accord on UK SND maturities contrasts with the findings of Sironi (2001), who indicated that, since the Basel Accord came into effect, there has been a significant increase in the number of issues with a maturity equal to or in excess of 10 yr. A possible explanation for this is that the classification of capital under the Basel Accord did not represent a significant departure from the UK capital adequacy regime prior to the Accord.¹⁰ As a result, UK banks appear to have been issuing SND with sufficiently long maturities (before the 5-yr amortization rule would apply) for some time.

E. Issue Size

Between 1988 and 1996, the mean value of each issue was generally less than \$200 million in real terms, but since 1991, the mean value has been on a distinctly upward trend, reaching its highest value in 2002 (Table 7). Moreover, there was a high percentage of smaller issues between

1988 and 1995. From 1999 to 2002, the growth in the number of issues was accompanied by the first ever \$1 billion plus (in nominal terms) issue. Fourteen such large-scale issues occurred in this 4-yr period, and 11 of these were denominated in US\$ and 9 were perpetual bonds. The fact that demand for large issues had clearly increased in 1999 (the next-largest issue in nominal terms, at \$809 million, had been made 7 yr earlier in 1992) suggests that this was a period of strong investor demand for high-quality corporate SND. Table 7 illustrates how the rise in the number of debt issues from 1999 onwards was accompanied by a growth in large issues. Rather interesting are the low minimum issue sizes, in the years 1999-2002, which are all attributed to the entrance of smaller building societies into the SND market. This development provides further evidence that demand was high during this period.

F. Currency of Issue

The preferred currency of issue has clearly been sterling and U.S. dollars throughout the

10. See Hall (1999) for details on the UK capital adequacy assessment regime prior to the Basel Accord.

TABLE 7
Analysis of Dispersion of Issue Size of UK Credit Institutions' SND in Real Terms (1985–2002)

Year	Amount (\$m)					Number of Issues Between (\$m)										No. of Issues
	Total	Mean	Minimum	Maximum	SD	<100	100–199	200–299	300–399	400–499	500–599	600–699	700–799	800–899		
1985	6,547	436	93	737	179	1	1	1	4	5	1	—	2	—	15	
1986	3,283	328	128	722	189	—	3	3	2	—	1	—	1	—	10	
1987	1,167	292	137	409	122	—	1	1	1	1	—	—	—	—	4	
1988	3,902	170	62	438	94	7	11	2	2	1	—	—	—	—	23	
1989	2,361	182	33	463	155	7	1	2	1	2	—	—	—	—	13	
1990	1,240	207	15	418	169	2	2	—	1	1	—	—	—	—	6	
1991	1,124	125	32	389	115	5	2	1	1	—	—	—	—	—	9	
1992	1,686	130	13	609	157	7	4	1	—	—	—	1	—	—	13	
1993	3,847	160	53	366	82	6	10	7	1	—	—	—	—	—	24	
1994	2,378	170	11	429	127	4	6	1	2	1	—	—	—	—	14	
1995	2,676	149	54	515	103	4	10	3	—	—	1	—	—	—	18	
1996	4,923	189	102	414	88	—	16	5	4	1	—	—	—	—	26	
1997	3,400	200	107	329	78	—	10	3	4	—	—	—	—	—	17	
1998	2,784	186	41	380	97	2	8	2	3	—	—	—	—	—	15	
1999	13,018	241	5	828	178	14	10	12	9	5	—	3	—	1	54	
2000	12,072	257	15	831	185	9	14	12	4	2	2	2	1	1	47	
2001	9,766	250	21	713	176	10	6	11	3	3	5	—	1	—	39	
2002	11,602	270	13	816	198	12	6	9	5	6	3	1	—	1	43	
Total	87,776	225	5	828	164	90	121	76	47	28	13	7	5	3	390	

Source: Bondware.

sample period (Table 3). The advent of the Euro gave rise to a number of issues in displaced domestic EU currencies during 1998. However, the introduction of the euro in 1999 subsequently led to its becoming the third most important currency of issue for UK SND issues. In 1999, euro issues even outstripped those issued in sterling, but from 2000 onwards, the supply of euro issues has fallen behind those issued in sterling and dollars. This suggests that, perhaps, the 1999 increase in Euro issues reflected the novelty value of the currency. However, as the euro weakened against sterling, its attractiveness as a base currency for SND issues declined. As previously discussed, it is important to note that the sudden rise in SND issues in 1999 cannot be solely attributed to the introduction of the euro, as both sterling and dollar issues rose significantly at this time.

It is also interesting to note that, although the number of euro issues declined, Table 3 indicates that the average size of issues denominated in dollars and euros are generally much larger than their sterling SND counterparts.¹¹ This suggests that they are probably easier to sell in large amounts compared to their sterling equivalent.

G. Fixed-Rate Issues

The percentage of fixed-rate issues, shown in Table 2, illustrates a clear trend toward this type of finance from 1992 onwards. This transition coincided with the general expectation, around that time, that future interest rates would come down as a result of the anti-inflationary policies of the monetary authorities. Furthermore, from 1992 onwards, the percentage of fixed-rate debt typically remained between 70% and 90% of total issues.

H. Callable Issues

UK credit institutions frequently attach call features to their SND, and this has been particularly true for issues since 2000. The sample period average of 61% is broadly in line with Sironi's (2001) observation that UK credit institutions are one of the highest issuers of callable SND in Europe. This finding is probably not that surprising given the high proportion of perpetual debt issues made in the United Kingdom. It is

11. For the period 1999–2002, the average issue size is \$317 million for sterling-denominated issues, \$518 million for U.S. dollar ones, and \$487 million for euro ones.

also interesting to note that about 90% of perpetual debt issues have callable features, whereas for nonperpetual debt, the figure is 40%. The average first call date over the sample period is 10 yr, but the standard deviation highlights significant variation. In any year, the first call date typically ranges from 5 to 25 yr. Table 2 also highlights how the average first call date has lengthened over time from 5 to 14 yr.¹²

I. Convertible Issues

The Bondware data analyzed in this article exclude convertible SND issues but, in line with Sironi's (2001) observations for the whole EU SND market, the United Kingdom has witnessed only 22 convertible SND issues over the period 1985–2002, representing only 5% of all issues.

J. Spread at Launch

This information is only available for issues since 1991, and of the 258 fixed-rate issues during that time, information on primary spreads is available for 205 of them (80%). The evidence is presented in Table 8 and highlights an average spread over comparable treasury instruments of 150 basis points, with a standard deviation of 70 basis points. Even during the exceptional issuance period 1998–2002, the average spread at launch was 176 basis points and the standard deviation was 73 basis points. To impose a penalty on highly risky banks, Calomiris (1997) suggested that qualifying debt should not exceed a yield spread of 50 basis points. In the UK context, such a policy would have resulted in only five issues being unpenalized between 1991 and 2002.¹³ Equally, the variability of UK spreads suggests that imposing and determining an optimal rate cap for qualifying SND would be difficult.

K. Issue Method

The type of market issue can provide some indication as to whether the market for UK

12. An area for further research is the frequency with which issues are called and whether they are immediately replaced with new debt issues.

13. Four of the five issues occur in the years 1996–1998, which Table 5 illustrates is a period of markedly reduced issuance spreads. We ascribe the lower spreads in these years to general market conditions as Sironi (2001) shows a similar, although less pronounced, pattern for EU banks' SND.

TABLE 8

Spread at Launch Characteristics by Year
(1991–2002)^a

Year	No. of Issues	Spread at Launch (Basis Points)				
		Mean	Median	Maximum	Minimum	SD
1991	4	163	166	185	135	19
1992	7	138	152	235	37	57
1993	20	145	140	280	90	37
1994	8	126	100	240	63	64
1995	10	134	140	230	62	56
1996	19	90	91	185	11	34
1997	10	99	85	225	55	46
1999	28	141	146	240	72	43
2000	37	245	240	415	112	66
2001	27	165	150	288	87	56
2002	23	124	109	225	70	40
Total	205	150	135	415	11	71

^aThese data are only available for 205 fixed-rate issues and only for issues after 1990.

Source: Bondware.

SND would be able to support a suitable MSNDP. Although both public and private placing of SND issues may provide suitable direct discipline,¹⁴ public issuance is viewed as a necessary condition to create suitable depth in secondary markets and, therefore, the potential for successful indirect market discipline (Basel Committee on Banking Supervision, 2003).¹⁵ As Table 9 indicates, the average issue size of public issues far outweighs that for private placements. Similarly, the majority of SND issues (94%) are public and the dollar value of these issues represents 97% of total SND value. The vast majority of these public issues are Eurobonds, with 79% of all SND issues being euro – public issues. These percentages far exceed those presented by Sironi (2001). As such, they serve to highlight the existence

14. The price at which a public issue is taken to market should provide a strong indication of investors' perceived risks for that issuer; however, with private placements, it is less certain if sufficient scrutiny of the issuer takes place.

15. It must be remembered that, although large public issues raise the opportunity for liquid secondary markets, if bond investors simply "buy and hold" SND in their portfolios, such issues will be illiquid and therefore result in misleading secondary market signals. Therefore, it is important to understand investors' motivations for purchasing SND (both in public issues and in private placements) and whether they regularly monitor institutions' risk taking and, thus, reflect this in secondary prices. The authors are currently researching this behavioral aspect to market discipline.

TABLE 9

UK Credit Institutions' SND Issues by Issue Method (1985–2002)

Issue Method	No. of Issues	% of Total	Total		Average Issue Size
			Amount (\$m)	% of Total	
Domestic – Public Issue	15	3.8	1,827	1.4	121.8
Euro – Public Issue	309	79.2	101,829	78.6	329.5
Foreign – Public Issue	29	7.4	13,063	10.1	450.4
Global – Public	13	3.3	9,212	7.1	708.6
	366	93.7	125,931	97.3	344.1
Domestic – Private Placement	1	0.3	81	0.1	81.0
Placement					
Foreign – Private Placement	6	1.5	1,595	1.2	265.8
	24	6.2	3,551	2.7	148.0
Total	390	100.0	129,482	100.0	332.0

Source: Bondware.

of structural differences across the EU SND markets and suggest that some countries' bank issues may be better placed to support price-based indirect market discipline than others.

IV. BANK AND BUILDING SOCIETIES' INDIVIDUAL ISSUANCE

A. Activity

Unlike other studies on EU market discipline, this article has purposefully incorporated two types of domestic credit institutions to assess whether the market for SND is sufficiently deep to include issues from both types of institutions in an MSNDP. As financial regulatory policy in the UK converges for both forms of credit institutions, it is important to see if an MSNDP could affect the level playing field.

The 390 SND issues by UK credit institutions over the sample period relate to 34 different issuers (pre-mergers), of which 21 were (and some still are) building societies. By the end of 2002, mergers and takeovers had reduced the number of issuers to 23, of which 12 were banks. This means that 11 of the 65 currently registered building societies have issued SND.

A brief examination reveals that 10 of these have assets in excess of £1,000 million and 7 represent the largest UK building societies. With regard to the banks, an examination of the 94 UK-owned banks (as at March 2001) reveals that 11 SND issuers were in the top 12 banks, as measured by total assets, and all 12 were among the 15 largest banks in the United Kingdom. This concentration of SND issuance highlights that a lot of smaller UK banks and building societies do not issue SND, and so an MSNDP would have to be restricted to the larger UK credit institutions. The question, however, is whether such a policy would be appropriate for even these institutions.

Some commentators have suggested that because banks issue more SND than the 25% of capital that is permitted for capital adequacy purposes under the Basel Accord, a mandatory issuance policy structured on current capital ratios should not constrain banks' funding possibilities. However, they fail to recognize that only term SND is limited to 25% of regulatory capital. Perpetual SND can be included, for capital adequacy purposes, up to a maximum of 50% of regulatory capital. This is important because this article has already stressed how perpetual SND forms a significant proportion of UK issues. Therefore, although column 7 in Table A1 suggests that all large UK banks have outstanding SND in excess of 25% of regulatory capital, it is all likely to be included for regulatory capital purposes. Consequently, regulatory capital regulations may be having a larger influence on the type of SND being issued than is currently recognized in the literature. For example, 51% of all SND issues in the growth period of 1999–2002 were perpetual issues, and these represented 56% of the total value of issues during this 4-yr period.

Table A1 provides a list of the largest UK banks and building societies as at the end of 2002 together with SND issuance data and key balance sheet information. Although all 10 large banks have reasonable amounts of SND outstanding when compared to RWA,¹⁶ Table A1 highlights a concentration of SND issuance among the six largest credit institutions. These six institutions issued 312 of the 390 issues made over the sample period, that is, 80% of

all issues. The dominance of these institutions is further emphasized by the fact that their issues represented 88% of the total value of SND issues over the sample period. Moreover, these six financial institutions were the only issuers to average at least two SND issues per year. The averages in Table A1 fail to illustrate that two smaller banks (Standard Chartered and Northern Rock) have issued debt with some regularity during the period 1999–2002 and could, therefore, be considered under an MSNDP. However, institutions of similar size (Nationwide, Alliance & Leicester, and Bradford & Bingley) have quite different issuing patterns, which suggests that the imposition of an MSNDP on either Standard Chartered or Northern Rock may put them at a competitive disadvantage during difficult trading conditions in the bond market (Table A2).

The smaller institutions issue debt with such irregularity that it would be inappropriate to require them to follow an MSNDP. This is in line with proposals by the U.S. Shadow Financial Regulatory Committee (2000) and Wall (1989) to exempt small banks from a mandatory debt requirement. Their infrequent issuance during the recent period of demand for corporate debt suggests that an MSNDP would impose excessive regulatory costs by causing them to significantly shift funding patterns away from the optimum. As a result, it appears that only the six largest credit institutions, which are all banks, would be appropriate for inclusion in an MSNDP in the United Kingdom.

The high issuance numbers for the six largest banks could, however, be misleading because they have all been created from mergers and acquisitions over the sample period. Therefore, the average issues per year reflect the activities of more than one institution. Table A2 reveals far lower issuance activity when the analysis focuses on the constituents. Nevertheless, this does not detract from the fact that, going forward, only six UK banks are large enough to regularly issue SND and, therefore, be included in an MSNDP. An MSNDP requirement for at least four issues per year would also require these institutions to make smaller and more regular issues.

Table A2 indicates that the issuance activities of the six largest credit institutions fluctuated significantly over the sample period. This fluctuation appears to be related to debt market conditions; the highest issuance activity for all six institutions was during the period 1999–2002,

16. This compares with the findings from the Basel Committee on Banking Supervision (2003) of an average of 3.5% for German banks, 3.0% for American banks, and 1.5% for Japanese banks.

when bond market conditions were favorable. During this period, these institutions made at least four issues per year. In contrast, the difficult trading conditions of the early 1990s coincided with a period of low annual issuance when large credit institutions averaged only 1.3 issues per year. Covitz, Hancock, and Kwast (2000) and Calomiris and Powell (2001) suggest that riskier banks are less likely to issue SND, especially during periods of banking stress. Although this article does not attempt to relate SND issuance activity to measures of bank risk, it is clear that banks are less likely to issue debt during periods of market and bank stress. Therefore, an MSNDP with a regular issuance requirement would force banks to issue debt during inopportune periods to enable the market to price bank risks through direct market discipline.

B. Banks, Building Societies, and Conversion to Public Limited Company Status

A significant and unique characteristic in the UK financial market has been the conversion of 10 building societies to banks over the past 14 yr. As this development has affected the data and its interpretation, this section investigates whether there are any special effects or trends that can be attributable to PLC conversion. Equally, this section analyzes the SND issuance data for those institutions that have converted to see if there are any discerning trends.

Table 10 supports the earlier discussion and reveals that banks have made the overwhelming number of issues. For example, the frequency of issuance by banks numbers around two per year, whereas building societies average about one per year. The decrease in building society issues after 1997 reflects the relatively large number of PLC conversions; however, this hides the trend for smaller building societies to enter the market for SND. Accordingly, Table 11 shows how the number of issues by building societies that have not converted has risen in the past 4 yr. Continuing on the same theme, Table 12 illustrates the SND issuance activity by traditional banks, that is, those that were banks at the commencement of the sample period. This highlights that it is not just the conversion to PLC status that has raised the number of bank SND issues because it is clear that traditional banks have also raised their debt issuance since 1999.

Three converted credit institutions provide sufficient data to examine the trends and differences in SND issues between building societies and banks. They are the Halifax, the Northern Rock, and the Alliance & Leicester, which all converted in 1997 (Table 13). To control for the effect of larger issuance sizes after 1998, data for the largest UK building society, the Nationwide, have been included in the table.

It is interesting to note that all issues made when they were building societies were denominated in sterling (and this is still true for Nationwide), whereas, following conversion, the banks have made issues in euros, yen, and U.S. dollars. The number of perpetual issues has risen post conversion, but this is also true for the Nationwide, once again confirming the move toward perpetual issues by all UK credit institutions. Table 13 shows that issue sizes have also risen post conversion, but again, the rise in issue sizes at the Nationwide suggests that this is a country-specific trend. As a result, it appears

TABLE 10
UK Bank and Building Society SND Issues by Year

Year	Bank Issues ^a	Average/ Issuer	Building Society Issues ^a	Average/ Issuer	Total Issues
1985	15 (9)	1.66	0 (0)	0	15
1986	10 (6)	1.66	0 (0)	0	10
1987	4 (3)	1.33	0 (0)	0	4
1988	14 (5)	2.80	9 (5)	1.8	23
1989	9 (4)	2.25	4 (4)	1.00	13
1990	3 (3)	1.00	3 (3)	1.00	6
1991	5 (4)	1.25	4 (3)	1.33	9
1992	7 (4)	1.75	6 (6)	1.00	13
1993	15 (6)	2.50	9 (7)	1.29	24
1994	12 (6)	2.00	2 (2)	1.00	14
1995	17 (7)	2.43	1 (1)	1.00	18
1996	19 (8)	2.38	7 (6)	1.12	26
1997	12 (7)	1.71	5 (4)	1.25	17
1998	14 (7)	2.00	1 (1)	1.00	15
1999	49 (11)	4.45	5 (4)	1.25	54
2000	43 (11)	3.91	4 (3)	1.33	47
2001	36 (10 ^b)	3.6	3 (2)	1.5	39
2002	40 (8)	5.00	3 (3)	1.00	43
Total	324		66		390

^aIn parentheses is the number of different issuers during the year.

^bDuring this year, Bank of Scotland, Halifax PLC, and the merged entity HBOS PLC all issued SND. For the purposes of this table, this has been counted as involving only two issuers.

TABLE 11
SND Issues by Building Societies That Have Not Converted to PLC Status

Year	Number of Conversions to PLC Status ^a	Nonconverted Building Societies ^b	Total Issues by Building Societies ^b (Table 9)
1988	0	2 (1)	9 (5)
1989	1	1 (1)	4 (4)
1990	0	1 (1)	3 (3)
1991	0	0 (0)	4 (3)
1992	0	2 (2)	6 (6)
1993	0	2 (1)	9 (7)
1994	0	2 (2)	2 (2)
1995	1	0 (0)	1 (1)
1996	1	1 (1)	7 (6)
1997	5	1 (1)	5 (4)
1998	0	0 (0)	1 (1)
1999	1	5 (4)	5 (4)
2000	1	3 (2)	4 (3)
2001	0	3 (2)	3 (2)
2002	0	3 (3)	3 (3)
Total	10	26	66

^aIncluding those building societies acquired by banks.

^bIn parentheses is the number of different issuers during the year.

Source: Bondware.

that conversion is not creating any discernable changes in issuance characteristics, apart from a rise in non-sterling-denominated issuance. This probably reflects the fact that building societies have some restrictions on their overseas operations.

V. IMPLICATIONS FOR MANDATORY SND PROPOSALS

A. Scope of an MSNDP in the United Kingdom

The evidence from Section III highlights significant issuer concentration in the market for UK SND. The largest seven institutions were responsible for 92% of the total value of SND issues over the sample period and had 90% of the outstanding SND on their books at the end of 2002. To encourage sufficient investor monitoring and ensure that the level of SND is related to a bank's risk profile, mandatory SND proposals (Table 1) suggest a level of outstanding SND of between 2% and 5% of RWA. The 10 largest banks in the United Kingdom all satisfy this condition, suggesting that SND already forms an integral portion of bank funding (Table A1). However, a key feature of an MSNDP is the requirement for regular issues of between two and four per year. Although eight banks have recently met this requirement, Tables A1 and A2

indicate that only the six largest banks have met this requirement over the sample period. Nevertheless, it should be remembered that mergers and acquisitions have enabled these six institutions to grow sufficiently to be able to meet this requirement. This suggests that it is only recently they have found themselves in a position to make sufficient regular calls on the market. It is also interesting to note that each of these six banks had assets in excess of \$250 billion at the end of 2002, whereas the seventh largest bank had an asset base that was less than half of that. Therefore, imposing an MSNDP exclusively on the six largest banks suggests that it will not significantly influence the competitive playing field within the UK banking industry, which is desirable, yet would cover around 85% of UK banking assets.

B. How Often Should Banks Be Required to Issue SND?

Issuance activity by UK credit institutions appears to reflect bond market conditions, bank profitability, and the general economic climate. In addition, the type of SND issued varies with market conditions. The introduction of the Basel Accord appears to have had no identifiable impact because UK banks were already

TABLE 12
SND Issues by Banks That Were Classified as Banks as at January 1, 1985

Year	Total Issues by Banks as at January 1, 1985 ^a	Average/Issuer	Total Issues by Banks ^a (Table 9)
1985	15 (9)	1.66	15 (9)
1986	10 (6)	1.66	10 (6)
1987	4 (3)	1.33	4 (3)
1988	14 (5)	2.80	14 (5)
1989	9 (4)	2.25	9 (4)
1990	3 (3)	1.00	3 (3)
1991	4 (3)	1.33	5 (4)
1992	3 (3)	1.00	7 (4)
1993	13 (5)	2.6	15 (6)
1994	8 (5)	1.6	12 (6)
1995	14 (6)	2.33	17 (7)
1996	16 (7)	2.29	19 (8)
1997	11 (6)	1.83	12 (7)
1998	12 (6)	2.00	14 (7)
1999	34 (8)	4.25	49 (11)
2000	32 (7)	4.57	43 (11)
2001	28 (6 ^b)	4.66	36 (10 ^b)
2002	29 (5)	5.8	40 (8)
Total	259		324

^aIn parentheses is the number of different issuers during the year.

^bDuring this year, Bank of Scotland, Halifax PLC, and the merged entity HBOS PLC all issued SND. For the purposes of column 4, this has been counted as involving only two issuers and for the purposes of column 2 treated as only involving one issuer.

Source: Bondware.

satisfying similar capital adequacy requirements. Although all six large banks issued SND at an average of between two and four times a year, issuance activity varied significantly over the sample period. The post-1999 era, for example, has witnessed a period of unprecedented issuance activity because cheap funding could be obtained (between four and nine issues per year). However, this was previously offset by a period of markedly reduced calls on the market, especially during the difficult trading conditions of 1989–1992 (between one and two issues per year). This suggests that requiring banks to issue three times per year may provide a suitable hurdle without imposing excessive regulatory costs. This would enable investors to regularly price bank risks into new SND issues and provide the regulatory authorities with an additional insight into bank condition. In fact, with the literature beginning to question the quality of bank-specific information in debt prices (Delianedis and Geske, 2001; Longstaff, 2002), maybe the informational power of an MSNDP lies in the quantity-based

signals arising from whether banks can regularly issue SND.

C. How Much Should Banks Be Required to Issue?

As previously suggested, the largest UK banks would satisfy an MSNDP requirement for outstanding SND capital that lay between 2% and 5% percent of RWA. Looking at current SND levels (Table A1) and given the extremely large SND issues in the past 4 yr, it appears that an initial minimum of 2.5% of RWA is appropriate. Over time, this could rise in steps up to a minimum 3.5%. This is in line with current voluntary SND amounts held on banks' balance sheets. As such, it indicates that an MSNDP would not force banks to lever themselves above the unconstrained optimum and crowd out other funding sources. The extremely high levels of Tier 1 capital recorded by UK banks (Table A1) confirm that these voluntary SND amounts are in no way restricting equity sources of funding to the minimum. The average size of each issue is

TABLE 13
SND Issues by Selected Building Societies That Have Become Banks (1985–2002)

Credit Institution	As a Building Society			As a Bank			Value/Issue % Increase
	No. of Issues	Value (\$m)	Value/Issue (\$m)	No. of Issues	Value (\$m)	Value/Issue (\$m)	
Alliance & Leicester (converted April 21, 1997)	5	1,096	219.2	2	514	257.0	17.2
Halifax (converted June 2, 1997)	9	2,694	299.3	7	3,177	453.9	51.6
Northern Rock (converted October 1, 1997)	4	415	103.75	11	2,835	257.7	148.4
During period ending 31/12/97			From period commencing 01/01/98				
Nationwide (still a building society)	7	1,195	170.7	2	479	239.5	40.3

Source: Bondware.

in the region of \$300–\$400 million, which compares favorably with U.S. findings of between \$250 million and \$400 million (Board of Governors of the Federal Reserve System, 2000) and is larger than the EU average of \$250 million (Sironi, 2001). As a result, each issue should be at least \$300 million in value.

D. What Form Should the SND Take?

Section II indicates that the current issues of UK credit institutions are, primarily, fixed-rate perpetual debt. The long maturity of UK issues easily exceeds the extreme MSNDP requirement for debt with an initial maturity of 5 yr. However, in line with most MSNDP proposals, it can be argued that the average initial maturity of UK SND, of 14 yr, is too long to provide suitable market discipline monitoring and signaling. EU and U.S. data indicate average SND maturities that also easily exceed 5 yr. Therefore, requiring banks to issue SND with a maximum maturity of 5 yr will conflict with capital adequacy regulations¹⁷ and cause banks to alter funding strategies from the unconstrained optimum, and as a result, the maturity characteristic of MSNDP proposals should be reviewed. On the other hand, it is argued that capital adequacy regulations requiring banks to amortize debt by 20% each year over the past 5 yr have encouraged banks to issue debt with greater maturities. Therefore, if this requirement were removed, banks might issue shorter maturities.

Other features associated with UK debt issues are that they typically have call features attached to them, which contrast with desired MSNDP characteristics (Evanoff and Wall, 2001). Also, the debt is almost always publicly issued, which raises the potential for both direct and indirect market discipline. Taking into account the large average issue size, this suggests that the secondary market undoubtedly has the potential to be liquid.

These SND characteristics contrast with the findings of studies on the U.S. SND market (Board of Governors of the Federal Reserve System, 2000) and the EU findings of Sironi (2001), where 10-yr maturity fixed-rate debt with non-callable features predominates.¹⁸ As a result, the harmonization of an international MSNDP may

17. To tie in with capital adequacy requirements, a minimum initial maturity of 5 yr would be preferable.

18. The UK's unique preference for perpetual debt is an area for further research.

prove more difficult than previously envisaged, even if the policy was restricted to the largest global credit institutions. The standardization of SND features is desirable because it would make it easier for market participants and the regulatory authorities to perform comparative analyses and to decipher the market signals of bank risk.

VI. CONCLUSIONS

This article has examined the main characteristics of UK credit institutions' SND issues and assessed the implications with reference to the literature on the design of an MSNDP. Uniquely, the article has adopted a bank-level approach to investigate and explain particular nuances in the UK market for SND.

The key findings can now be summarized. Although several banks and building societies issue SND, the market for UK credit institution SND is highly concentrated among the six largest banks. The typical bank SND is fixed-rate perpetual debt with call options attached, and banks typically have between 2% and 3% of outstanding debt to RWA. These characteristics differ significantly to EU and U.S. bank data, which record 10-yr, fixed-rate noncallable bonds as the most common type. Equally, in contrast to other EU countries, the introduction of the Basel Accord appears to have had little effect on the maturity characteristics of UK SND.

The question posed by the article at the outset was should an MSNDP be introduced in the United Kingdom? The answer to this is framed around two policy considerations: domestic and international implementation of such a policy; and, given the costs, would an MSNDP enhance direct and/or indirect market discipline?

At a domestic level, an MSNDP should be implemented but restricted to the six largest banks in the United Kingdom. A policy of at least three issues per year with at least 2.5% outstanding SND to RWA (rising to 3.5%) would not prove overly burdensome for these banks nor constrain alternative funding sources while at the same time enhancing quantity-based direct and indirect market discipline signals. Although the largest banks are currently issuing SND at a rate of more than three times per year, history indicates that issuance can soon dry up in difficult market and economic conditions unless a mandatory policy is in force. Furthermore, as the six largest banks are significantly

larger than the rest, imposing an MSNDP exclusively on them suggests that it will not influence the competitive playing field within the UK banking industry. The large proportion of public issues raises the potential for a liquid secondary market and hence suitable, price-based indirect market discipline. However, further research on this aspect of market discipline is necessary.

MSNDP proposals suggest initial maturities on qualifying SND of no more than 5 yr. A concern is that UK credit institutions voluntarily issue SND that easily exceeds this requirement. This is in part because of the 5-yr amortization rule in the Basel Capital Accord. The extremely long average maturity of UK SND suggests that initial maturities would still exceed 5 yr if the 5-yr amortization rule was scrapped. A standardized form of qualifying SND is essential in creating directly comparable securities for monitoring secondary market yields across issuers and over time. Therefore, a price-based indirect discipline MSNDP would force UK institutions to significantly alter their debt funding mix and so is not desirable. However, standardizing SND maturities is not as critical in implementing quantity-based direct market discipline. Here, mandatory issuance becomes the overriding policy tool. If a bank is considered risky, then investors are unlikely to subscribe funding, unless it is at a considerable above-peer average cost to the bank, and then, this is likely to become market news. Regular SND issuance would mean that credit institutions are frequently scrutinized by potential investors. Furthermore, the requirement that credit institutions make regular SND issues would prevent them from constantly issuing extremely long maturity debt to cover the 3.5% of RWA requirement because existing investors would become uncomfortable at the rise in leverage ratios. Retaining the current Basel Capital Accord rules on qualifying SND would ensure that maturities of less than 5 yr would be unlikely. Therefore, in the presence of a direct market discipline policy that contains no maximum initial maturity requirement, by default, institutions will continue to issue across the maturity spectrum. Furthermore, as the article has shown, individual institutions have a tendency to follow each other in issuing debt with similar maturities depending on market conditions. For example, the period 1998–2002 has seen UK banks taking advantage of low long bond yields to issue

APPENDIX

TABLE A1

SND Issues by the Largest UK Banks and Building Societies (by Total Assets) as at End of 2002

Institution	Total Assets (\$m)	Total RWA (\$m)	Outstanding SND (\$m)	SND/RWA (%)	Regulatory Capital	SND/Regulatory Capital (%)	Capital/Solvency Ratio (%)	Tier 1 Ratio (%)	No. of Issues		Amount (\$m)	
									Total	Average/Yr	Total	Average/Issue
1 HSBC	748,890	431,805	14,831	3.4	57,430	26	13.3	9.0	42	2.3	18,621	443.4
2 Royal Bank of Scotland	649,377	375,812	12,235	3.3	43,970	28	11.7	7.3	74	4.1	29,782	402.5
3 Barclays	637,833	279,563	7,898	2.8	35,784	22	12.8	8.2	55	3.1	19,171	348.6
4 HBOS	512,148	302,631	9,171	3.0	31,474	29	10.4	7.9	51	2.8	15,826	310.3
5 Lloyds TSB	334,288	197,239	7,530	3.8	18,935	40	9.6	7.8	49	2.7	17,811	363.5
6 Abbey National	284,107	126,345	5,617	4.4	14,656	38	11.6	9.2	41	2.7	12,876	314.0
7 Standard Chartered	113,010	74,434	3,602	4.8	10,793	33	14.5	8.6	14	0.8	5,256	375.4
8 Nationwide BS	103,963	N/A	736	N/A	N/A	N/A	11.7	9.6	9	0.6	1,674	186.0
9 Allian & Leicester	66,485	32,175	983	3.1	3,668	27	11.4	8.5	7	0.5	1,610	230.0
10 Northern Rock	52,650	28,025	1,772	6.3	4,512	39	16.1	9.3	15	1.0	3,251	216.7
11 Bradford & Bingley	41,442	21,176	1,092	5.2	3,007	36	14.2	9.6	6	0.4	1,296	216.0
12 Britannia BS	30,096	N/A	399	N/A	N/A	N/A	14.3	11.2	4	0.3	573	143.3
13 Yorkshire BS ^a	20,029	15,725	100	0.6	1,258	8	13.9	12.0	2	0.1	122	61.0
14 Egg bank	17,029	8,023	325	4.1	1,051	31	13.1	9.8	0	N/A	N/A	N/A
15 Portman BS	16,719	N/A	130	N/A	N/A	N/A	13.3	N/A	2	0.1	197	98.5
16 Co-operative bank	14,343	N/A	100	N/A	N/A	N/A	14.1	10.6	4	0.2	435	108.8
17 Coventry BS	12,988	N/A	35	N/A	N/A	N/A	12.7	11.1	1	0.1	22	22.0
18 Standard Life Bank	12,577	N/A	230	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
19 Chelsea BS	10,813	N/A	130	N/A	N/A	N/A	16.3	N/A	3	0.2	224	74.7
20 Skipton BS	10,808	N/A	57	N/A	N/A	N/A	12.3	10.3	2	0.1	41	20.5
21 3i group	7,827	N/A	51	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
22 Leeds & Holbeck	7,814	N/A	0	N/A	N/A	N/A	13.2	N/A	0	N/A	N/A	N/A
23 NM Rothschild	7,269	N/A	0	N/A	N/A	N/A	N/A	N/A	2	0.1	387	193.5
Others												
Cheshire BS	4,124	N/A	29	N/A	N/A	N/A	N/A	N/A	1	0.1	15	15.0
Nottingham BS	2,921	N/A	0	N/A	N/A	N/A	N/A	N/A	1	0.1	36	36.0
Scarborough BS	2,066	N/A	15	N/A	N/A	N/A	14	N/A	1	0.1	24	24.0
Manchester BS	557	N/A	4	N/A	N/A	N/A	6.9	N/A	1	0.1	8	8.0
Hambros	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	0.2	36	18.0
SG Warburg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	0.1	188	188.0
Total	3,722,173		67,090						390	21.7	129,482	332.0

Note: BS, building society; N/A, not applicable or not available.

^aAs at end of 2001.

Sources: Bankscope, Bondware, and company accounts.

TABLE A2
SND Issues by the 11 Largest UK Banks and Building Societies (1985–2002)

Institution	Number of Issues/Value (\$m) per Period																			
	No. of Issues		Amount (\$m)		1985–1988				1989–1992				1993–1998				1999–2002			
	Total	Average Yr	Total	Average Issue	No.	Average Value /Yr	Average/ (\$m)	Average/ Yr	No.	Average/ Yr	Value (\$m)	Average/ Yr	No.	Average/ Yr	Value (\$m)	Average/ Yr	No.	Average/ Yr	Value (\$m)	Average/ Yr
1 HSBC	34	1.9	16,289	479.1	3	0.8	1,053	263.3	1	0.3	809	202.3	14	2.3	4,385	730.8	16	4.0	10,041	2,510.3
<i>Midland Bank</i>	8	1.1	2,332	291.5	6	1.5	2,190	547.5	2	0.5	142	47.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42	2.3	18,621	443.4	9	2.3	3,243	810.8	3	0.8	951	237.8	14	2.3	4,385	730.8	16	4.0	10,041	2,510.3
2 Royal Bank of Scotland	44	2.4	17,565	399.2	3	0.8	768	192.0	1	0.3	250	62.5	13	2.2	2,940	490.0	27	6.8	13,607	3,401.8
<i>Natwest bank</i>	30	2.0	12,217	407.2	9	2.3	3,329	832.3	8	2.0	2,506	626.5	4	0.7	1,960	326.7	9	2.3	4,421	4,421.0
Total	74	4.1	29,782	402.5	12	3.0	4,097	1024.3	9	2.3	2,756	689.0	17	2.8	4,900	816.7	36	9.0	18,028	4,507.0
3 Barclays	46	2.6	17,573	382.0	5	1.3	2,441	610.3	3	0.8	1,071	267.8	14	2.3	3,253	542.2	24	6.0	10,808	2,702.0
<i>Woolwich</i>	9	0.8	1,598	177.6	0	0.0	0	0.0	3	0.8	268	67.0	5	0.8	1,067	177.8	1	0.3	262	262.0
Total	55	3.1	19,171	348.6	5	1.3	2,441	610.3	6	1.5	1,339	334.8	19	3.2	4,320	720.0	25	6.3	11,070	2,767.5
4 HBOS	6	6.0	3,745	624.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	1.5	3,745	936.3
<i>Bank of Scotland Halifax + Leeds Permanent BS + Birmingham</i>	22	1.3	5,524	251.1	1	0.3	250	62.5	1	0.3	300	75.0	11	1.8	2,205	367.5	9	2.3	2,770	923.3
<i>Midshires</i>	23	1.6	6,557	285.1	5	1.3	816	816.0	2	0.5	254	63.5	8	1.3	2,310	385.0	8	2.0	3,177	1,059.0
Total	51	2.8	15,826	310.3	6	1.5	1,066	266.5	3	0.8	554	138.5	19	3.2	4,515	752.5	23	5.8	9,692	2,423.0
5 Lloyds TSB	29	4.1	12,572	433.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	1.0	1,997	665.7	23	5.8	10,575	2,643.8
<i>Cheltenham & Gloucester</i>	3	0.4	122	40.7	0	0.0	0	0.0	3	0.8	122	30.5	0	0.0	0	0.0	N/A	N/A	N/A	N/A
<i>Lloyds Bank</i>	15	1.4	4,782	318.8	9	2.3	2,917	729.3	0	0.0	0	0.0	6	1.0	1,865	621.7	N/A	N/A	N/A	N/A
<i>TSB Bank</i>	2	0.2	335	167.5	1	0.3	173	43.3	1	0.3	163	40.8	0	0.0	0	0.0	N/A	N/A	N/A	N/A
Total	49	2.7	17,811	363.5	10	2.5	3,090	772.5	4	1.0	285	71.3	12	2.0	3,862	643.7	23	5.8	10,575	2,643.8
6 Abbey National	40	2.2	12,694	317.4	0	0.0	0	0.0	5	1.3	660	165.0	14	2.3	4,403	733.8	21	5.3	7,631	1,907.8
<i>National & Provincial</i>	1	0.1	182	182.0	0	0.0	0	0.0	1	0.3	182	45.5	0	0.0	0	0.0	N/A	N/A	N/A	N/A
Total	41	2.7	12,876	314.0	0	0.0	0	0.0	6	1.5	842	210.5	14	2.3	4,403	733.8	21	5.3	7,631	1,907.8

continued

TABLE A2
Continued

Insitution	Number of Issues/Value (\$m) per period																			
	No. of Issues		Amount (\$m)		1985-1988				1989-1992				1993-1998				1999-2002			
	Average	Total	Average	Total	Average	Value	Average/	No.	Yr	Value	Average/	No.	Yr	Value	Average/	No.	Yr	Value	Average/	No.
7 Standard Chartered	0.8	5,256	375.4	4	1.0	1,009	252.3	0	0.0	0	0.0	2	0.3	353	117.7	8	2.0	3,894	973.5	
8 Nationwide BS	0.6	1,674	186.0	2	2.0	345	86.3	3	0.8	554	138.5	2	0.3	296	98.7	2	0.5	479	119.8	
9 Alliance & Leicester	0.5	1,610	230.0	1	1.0	84	84.2	2	0.5	593	148.3	2	0.3	419	139.7	2	0.5	514	128.5	
10 Northern Rock	1.5	3,251	216.7	1	1.0	70	17.5	1	0.3	40	10.0	2	0.3	305	101.7	11	2.8	2,835	708.8	
11 Bradford & Bingley	0.4	1,296	216.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.5	562	187.3	3	0.8	735	183.8	

Note: BS, building society; N/A, not applicable.

Source: Bondware.

an unprecedented amount of perpetual maturity debt. Therefore, investors will have the capacity to compare yields to similar recent issues and decide whether to refrain from investing or request a higher yield. Again, if funding can only be provided at a considerable above-peer average cost to the bank, then this is likely to become market news.

Therefore, from a cost-benefit perspective, a UK MSNDP should be restricted to primary market direct discipline. Debt issuance compels disclosure to the market about an institution's current condition and prospects. Regular calls on the debt market will provide mandatory SND investors with a significant governance mechanism, subjecting credit institutions to frequent monitoring and scrutiny and direct discipline signaling. Extending the policy to include indirect discipline through standardized mandatory SND would impose substantial funding constraints on UK credit institutions and therefore should not be implemented.

With globalization of banking activities and banking regulation becoming increasingly international in scope, it is essential to consider the implementation of an MSNDP from an international perspective. UK banks make relatively large issues, comparable in size with U.S. and EU banks. However, analyzing the market for SND at a bank level and purely focusing on one country provide evidence of SND characteristics unique to the United Kingdom. Therefore, the harmonization of standardized mandatory SND across countries may prove far more difficult than articles such as Sironi (2001) envisage. A global MSNDP would force some countries' banks to significantly alter their funding structures from the unconstrained optimum and so distort the international level playing field. Consistent with the UK policy recommendation developed above, maybe, country-specific direct discipline MSNDPs would be the most appropriate policy direction. National banking supervisors would set minimum issue sizes and minimum issue frequencies for their internationally active credit institutions. Again, a regular issuance requirement would be the key policy tool. Credit institutions could continue to issue debt appropriate to their market and circumstances, but mandatory issuance would subject them to frequent monitoring and scrutiny and provide direct market discipline signals of bank condition to the national supervisory authorities.

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