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## Banks and Corporate Debt Market Development

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### No. 67

## Banks and Corporate Debt Market Development

Paul Dickie and Emma Xiaoqin Fan

April 2005

Asian Development Bank

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# **BANKS AND CORPORATE DEBT MARKET DEVELOPMENT**

**PAUL DICKIE AND EMMA XIAOQIN FAN**

April 2005

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## **FOREWORD**

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## **ABSTRACT**

This paper explores the factors associated with the development of corporate debt markets using panel data covering 30 countries from 1989 to 2002. The results support Rajan and Zingales's (2003) "interest group" theory of financial development that banks appear to oppose corporate debt market development as a potential force for their own disintermediation. The more concentrated the banking sector, the smaller the corporate bond market relative to the size of the economy. There is also evidence that the opening up of cross-border merger and acquisition activities and the presence of global corporations seem to weaken the influence of domestic banks. While outward-looking economic policies can reduce the power of domestic banks, the major countervailing force appears to be that committed governments recognizing corporate debt markets can enhance the resilience of their domestic economies.

## I. INTRODUCTION

Domestic bond markets are an important resource for firms seeking access to long-term local currency debt to reduce maturity and currency mismatches. This importance was highlighted by the fragility of economies during the Asian financial crisis. A widely accepted lesson to emerge from the crisis was that borrowers can face severe problems when they rely on short-term foreign currency funding. The lack of local currency debt markets was recognized as at least part of the reason why firms undertook short-term borrowing in international markets (Dornbusch 2002, Tornell 2002, Knight 1998, Summers 1999, Stone 2000). This inability to borrow long-term in domestic currency has been characterized as the “original sin” (Eichengreen and Hausmann 1999; Hausmann, Panizza, and Stein 2001).

Well-developed corporate debt markets have increasingly been seen as an integral part of resilient financial systems. Bank for International Settlements (BIS) statistics indicate that 80 percent of the debt securities outstanding in domestic debt markets, and 78 percent within international debt markets, had remaining maturities of more than one year at the end of 2000. By comparison, the maturity of international bank loans is predominantly short-term in nature, with only 34 percent of the outstanding loans being for a term of over one year. Given the widespread adoption of variable rate loans in the international market that allow longer duration loans without substantial interest rate risk, it is likely that the domestic bank loan markets have an even lower percentage of longer-term maturities. Clearly debt markets offer a spectrum of longer-term debt maturities.

Banks’ reluctance to provide long-term credits to corporations could be explained by an understandable hesitancy to widen the maturity mismatch on their own balance sheet, as banks’ funding is generally in the form of short-term deposits. While banks can partially meet corporate requirements for longer-term loans by rolling over short-term credits, this solution leaves projects with unmatched asset and liability maturities.

Since the Asian crisis, a growing number of emerging market economies have made efforts to develop local bond markets. Yet, at present, corporate debt markets still appear to be underdeveloped around the world. Less than one third of the over 100 countries with equity markets have corporate debt markets. Even where they exist, corporate debt markets average only one tenth the size of the corresponding equity markets. Most emerging market domestic corporate debt securities are plagued by a lack of issuance in primary markets and liquidity in secondary markets. This is in marked contrast to early capital market development in Europe and the United States (US) when debt markets dominated (Ferguson 2001, Sylla 1995).

Questions naturally arise as to what accounts for this lag in the development of local currency debt markets, and what lessons do previous experiences hold for policymakers seeking to create environments where bond markets can flourish. In an initial attempt to identify factors associated with debt market development, this paper examines the determinants for the development of corporate debt securities markets using BIS data from 1989 to 2002 for more than 30 countries.



This paper is particularly interested in exploring the relationship between banking sector structure and corporate bond market development. The central question the paper seeks to investigate is whether a highly concentrated banking sector impedes bond market development. The need to study the relationship is underpinned by the potential clash brought about by the fact that banks are active participants in corporate bond market activities, yet also potential opponents to bond market development due to the threat of disintermediation it may pose to the banking sector. A better understanding of the bank–corporate bond market relationship, along with other determinants of bond market development, can shed light on how best to provide appropriate policies to facilitate bond market development.

The results of this paper generally support the “interest group” theory proposed by Rajan and Zingales (2003) that emphasizes incumbents’ opposition to financial development because of the increased competition it introduces. It provides some evidence that banks, as the principal incumbents, have the tendency to oppose the development of corporate debt markets, given that debt market development can entail disintermediation for banks. The ability of banks to oppose bond market development is related to the structure of the banking sector. A more concentrated banking sector possesses more capacity to deter bond market development. The paper also provides some evidence that the opening up of cross-border merger and acquisition (M&A) activities and the presence of large global corporations seem to weaken the influence of domestic banks. But the most important countervailing influence is that of governments that support corporate debt market development.

Section II of this paper discusses the relationship between banks and corporate debt market proposed in the existing literature. Section III explores possible influences on debt market development with a view to model specifications for the empirical analysis. Section IV describes the data and the methodology employed. Section V presents the results of the analysis, Section VI provides a brief examination of determinants of equity markets as a comparison of debt markets, and Section VII concludes with some policy implications.

## **II. RELATIONSHIP BETWEEN BANKS AND BOND MARKETS**

An important aspect of the development of bond markets is their impact on the banking system. Do bond markets take good lending business away from banks? If so, the quality of bank loans may deteriorate as banks lose better borrowers so that banks will naturally oppose bond market development. However, few theoretical and empirical studies have explored this question.

A recent study by Rajan and Zingales (2003) sheds some light on this question. Their interest group theory states that incumbents oppose financial development because it breeds competition. Because of their privileged access to finance in less developed financial systems, incumbents enjoy a positional rent that will be impaired by financial development. Permitting new competitors to enter can draw away profits, while at the same time the incumbent’s old skills also become redundant as new credit evaluation and risk management become necessary. Thus, financial development introduces competition, destroys the existing financial institution’s rents and relations, and renders the incumbents’ human capital obsolete. All these lead to lower profits for incumbent financial institutions. A central

assumption of this argument is the belief that financial development aids the entry of new firms, thus enhancing competition. Naturally, the incumbents' opposition to financial development will be stronger if they have more market power.

This theory suggests that banks with market power may attempt to stifle the development of corporate bond markets. This is because the development of corporate security markets may compete for good borrowers from banks, the quality of bank loans may drop, the task of risk management may become harder as loans become riskier, and existing human capital may need to be updated. Banks with strong market power will have a stronger tendency and larger capacity to oppose corporate bond market development.

While very few empirical studies directly explore the relationship between the banking sector structure and corporate debt market development, some studies do touch upon bank–corporate bond market relationships. Hawkins (2002) observed that highly rated companies issue more bonds than do lower rated companies. Diamond (1994) has noted that bank loans must bear higher intermediation costs associated with banks' branch networks and required capital. With the relative cost advantages of debt securities, corporations that seek cost savings and have good reputations to issue debt securities will tend to do so when a debt market is available. Also as outlined by Bolton and Freixas (2000), less financially secure firms prefer bank loans due to the greater flexibility in rescheduling, while the larger, creditworthy firms seek to tap the bond markets. Analyzing the determinants of the financing choice for a sample of 1,560 new debt financing undertakings by publicly traded firms, Denis and Mihov (2003) found that the choice of debt instrument is strongly linked to the credit history and current credit quality of the issuing firm. Firms with high credit quality exhibit a strong preference for public debt, while firms with credit ratings toward the middle of the spectrum borrow from banks, and those at the bottom of the credit rating spectrum borrow from nonbank private sources. These studies suggest that corporate bond markets compete with banks and can draw away good borrowers from banks.

The relationship between banks and corporate bond market developments are not unambiguous, however. Demircuc-Kunt and Huizinga (2001), using bank level data for a large number of developed and developing countries, show that for countries with underdeveloped financial systems, a move toward a more developed financial system reduces bank profitability and margins. However, controlling for both bank and market developments, the financial structure per se does not have an independent effect on bank performance. An empirical test conducted by Jiang and Law (2001) found bond issuance and bank lending are positively correlated both in countries of the Organisation for Economic Cooperation and Development and the emerging economies. Eichengreen and Luengnaruemitchai (2004) examined the relationship between the banking sector and bond market development along with other factors using information from 41 countries from BIS reports. They found that countries with competitive, well-capitalized banking systems have larger bond markets. These studies point to a complementary relationship between banks and bond market development.

The mixed results suggest a need for further research to explore the relationship between banks and corporate bond market development. This is especially so in light of the limited empirical literature on the relationship between banks and corporate debt market development in particular, and on the determinants of corporate debt market development in general. This study seeks to make some empirical attempt in this regard.

### **III. HYPOTHESIS AND MODEL SPECIFICATION**

The major relationship this paper concerns itself with is that between the banking sector structure and corporate bond market development. Based on interest group theory, we postulate a negative relationship between banking sector concentration and corporate bond market development. In measuring bond market development, we focus on an important variable: the size of the corporate bond market relative to the size of an economy. Size is not the only indication of bond market development, however. Other factors such as efficiency and liquidity are also important. Nevertheless, size is probably the most important indicator measuring bond market development. The major hypothesis is that the more concentrated the banking sector, the more power that banks can exercise, and the less likely it will be that corporate debt markets will grow.

The relationship between banks and corporate bond markets is examined along with other possible determinants of corporate bond market development discussed below.<sup>1</sup>

#### **A. Players**

##### **1. Global Corporations (+)**

It is generally observed that more creditworthy firms are more likely to tap bond markets. Such corporations can issue securities on a "name" or reputation basis to attract a high level of acceptance from investors. A viable group of issuers and investors will help to create market liquidity in both the primary and secondary markets. Due to network effects, the benefits to corporate bond investors will rise with the number of issuers (Gandal 2002). The market power of banks may thus be rivaled by global corporations with a high degree of name acceptance that have potential access to the debt markets.

However, even large and well-established corporations need to have an unassailable position to ensure a continued flow of banking services while undertaking a shift in financing from banks to the market. For example, it is normal practice to have a back-up line of credit from a bank for a commercial paper program in case the debt markets prove to be inaccessible when corporate credit is required. As such, a corporation undertaking a shift to a debt market still needs to have the cooperation of a bank. It is therefore unlikely that the role of banks will be totally offset.

##### **2. Government Commitments (+)**

Due to problems related to networks, asymmetric information, as well as the duopolistic structure of the banking systems, financial development often requires the government to play a role.

In the initial stage of bond market development, the government may need to take the lead in getting the process under way by bringing together key market players. Governments may also need to ensure that corporate bond markets are not held hostage by agencies such as commercial banks, central banks, and regulatory agencies such as securities and exchange commissions. Rajan

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<sup>1</sup> (+) indicates a positive relationship between a particular variable and bond market development, (-) refers to a negative relationship, and (?) denotes an undefined relationship.

and Zingales (2003) note the negative influence of commercial banks in Japan's post-World War II period when, with the support of the government, they colluded to sharply reduce corporations' access to debt markets.

The importance of governments is demonstrated by the experience of Republic of Korea (Korea) and Malaysia. Governments in these two countries made bond market development a priority and took steps to facilitate this. In Malaysia, the government directed the utilization of funds from the Malaysian Provident Fund by infrastructure providers. It created a national mortgage corporation (Camagas Berhad) in 1988 to securitize banks mortgage loans and develop the private bond market. Camagas bonds enjoyed favorable regulatory treatment, including being treated as liquid assets for the purpose of bank investments. The scheme acted as a catalyst for corporate debt market development. The Employee Provident Fund was actively encouraged to invest in corporate bonds to help finance the development of infrastructure and energy investments of domestic corporations. About half of the corporate bonds was guaranteed by banks to improve their market acceptability (Dalla 1995, Shirai 2001). In addition, the government promoted the development of the needed infrastructure for bond market development including bond rating agencies and made their ratings mandatory. By 2000, the corporate debt market amounted to 47 percent of GDP, having increased from 4 percent in 1989.

The development of the corporate bond market in Korea was more gradual and was initiated by the government with the Capital Market Promotion Act of 1968 that sought to promote both bond and equity financing. This was followed up in the early 1970s by the introduction of guaranteed corporate bonds to ease financial constraints in the face of a major economic downturn. The government ensured that virtually all the corporate bonds issued by the industrial conglomerates (*chaebols*) before the Asian crisis carried bank guarantees to increase their market acceptability, resulting in 85–90 percent of all corporate bonds being guaranteed by financial institutions (Dickie 1999). The corporate bond market grew rapidly in the 1980s and the early 1990s, owing to the relatively large number of reputable industrial conglomerates (*chaebols*) and the bond guarantee system. By the mid-1990s, the size of bond financing exceeded that from banks and accounted for 28 percent of external financing of corporations (Shiria 2001, Dickie 2000). In the post-Asian crisis period, large corporations have been reducing their reliance on banks by going to the capital markets for their financing, thus freeing up bank credit for smaller firms (Lim 2003).

While the nature and timing of government support differed in Malaysia and Korea, in both cases it was substantial and sustained. The relatively rapid development of bond markets in these two countries seems to suggest that government support is important for bond market development at the initial stage. However, caution must be exercised when designing types of government interventions, as ill-designed government measures may cause many problems.

### 3. Public Debt Market (+)

The government securities market is an important foundation for corporate bond markets. An active and liquid corporate bond market requires a benchmark yield curve on whose basis risky credit can be priced. The benchmark yield curve is typically constructed from a suite of outstanding treasury securities, requiring governments to issue a range of maturities on a regular schedule. Thus public debt plays an important role in providing the basis for the price discovery of corporate bonds.

This implies that a past history of fiscal deficits funded by the issuance of government securities as well as a liquid secondary market in government securities is a necessary condition for the development of corporate debt markets. Government debt markets also provide dealers with experience in trading fixed income securities, and a chance to earn profit and build credibility as an intermediary.

However, there have been some nascent developments in pricing corporate bond issues off the swap market that have the potential to provide a private benchmark (McCauley 2001). As such, the current dependence on government bond markets for pricing corporate issues may not be permanent. Moreover, large-scale issuance of government bonds could crowd out the issuance of private sector bonds so that the presence of a large public bond sector is not always correlated with a deeper or more active corporate debt market (Gallego and Loayza 2001).

#### **4. Institutional Investors (+)**

Financial institutions are often the biggest nongovernment debt purchasers in early stages. Diversified institutional investors composing pension funds, insurance companies, mutual funds, and other financial institutions need to hold long-term debt. They are key to the development of debt markets.

### **B. Institutions**

The importance of institutions for financial development has received major attention in recent years (La Porta et al. 1997).

#### **1. Legal System Origins (?)**

Substantial effort has gone into understanding how different legal origins affect financial development. Recent studies highlight the distinction between civil law-based continental European economies and common law-based Anglo-American economies. The French civil law system was intended to promote unified state power with codified legal traditions, while English derived common law systems were intended to protect individuals from the arbitrary actions of the crown and were built on the basis of case law by judges. LaPorta et al. (1998) suggest common law systems in the British tradition are more suited to promoting the development of financial markets because they offer stronger investor protection than the French civil law tradition. La Porta et al. (1997) and Claessens et al. (2000) showed that legal protection of outside investors is associated with larger and more effective stock markets. Beck, Demirguc-Kunt, and Levine (2003) have demonstrated that the English common law has been more adaptable and supportive of financial development relative to the French civil law. Rajan and Zingales (2001) however, argue when the government has the will, civil law countries have a greater ability to translate governmental policy into law because laws emanate from the center rather than evolving through judicial decisions. Private interests have a greater chance of seeing their agenda enacted in a civil law country. Given the mixed result, we do not attempt to postulate, *a priori*, the relationship between legal system origins and corporate bond market development.

## 2. Creditor Rights (+)

The protection of minority shareholders' rights is of particular importance for the development of equity markets. Creditor rights and the ability to ensure secured transactions may also be key to the development of debt markets. Shareholders have decision rights over the cash flow when the firm is solvent, but with the onset of financial distress, creditors can acquire those decision rights (Hart 2001). However such transfers of decision rights involve the judiciary in the implementation of defined creditor rights, bringing into play a host of variables such as a country's indices for creditors' rights, regulation of dispute resolution, and judicial efficiency. The influences of most of these variables were explored in La Porta et al. (1997 and 1998).

However, there are many arguments that would lead one to believe that such legal attributes are at least partially endogenous. For example, the development of corporate debt markets may result in enhancing dispute resolution and judicial efficiency through the resolution of commercial disputes (Pistor et al. 2003). In light of this likely endogeneity, the legal origin variable was used as an instrument to capture the legal environment that can be thought to be exogenous.

## C. Economic Interrelationships and Incentives

Information asymmetries associated with external financing provide important insights into debt financing choices (Myers and Majluf 1984). To avoid information asymmetries, firms tend to rely on internally generated capital. If there is a need for additional external capital, firms tend to rely on debt as opposed to equity, given the large information asymmetries associated with incremental equity issues—the trickle down approach to financing. This suggests that debt markets may be highly opportunistic in responding to spillovers of investment financing requirements in excess of retained earnings. Such spillovers emanate from M&A activity and higher economic growth requiring increased investment (De Bondt 2002; Domowitz, Glen, and Madhaven, 2001).

### 1. Mergers and Acquisitions (+)

Mergers and acquisitions in one year by foreign investors may invoke issuance of corporate bonds within the following year as a way to control local management's utilization of free cash flow in wasteful investments (Myers 2001). Thus, debt issuance can be concentrated in specific years due to surges in external financial requirements from cross-border M&A activity.

### 2. Per Capita Income (+)

Economic development and bond market development go hand in hand. The development of corporate debt markets can benefit economic growth through reduced costs of intermediation (Diamond 1994). At the same time, higher incomes can also positively influence bond market development by providing a broader investor base and the investments required to develop supportive institutions such as trading platforms, clearing and settlement systems, regulatory agencies, and credit rating



agencies. Given the likely endogeneity of income, a standard geographical measure, namely distance from the equator, is used in alternative regressions (Rodrik, Subramanian, and Trebbi 2002).

### **3. Defined Contribution Schemes (+)**

Recent developments in pension reforms have seen the appearance of defined contribution schemes (DCS), either mandatory or voluntary, to supplement or replace pay-as-you-go (PAYG) systems that are no longer financially viable due to the pressure of aging populations. Bustamante (1996) and Gallego and Loayza (2001) found that Chile's reforms to establish a mandatory DCS in the early 1980s had benefited the development of its equity markets. The presence of DCS creates long-term disbursed savings that may also create demand for corporate debt securities.

### **4. Corporate Tax Rate (?)**

The tradeoff theory states that reliance on debt financing is dependent on the tax deductibility of interest payments in line with Miller's (1977) gains-to-leverage thesis, but that it is also limited by the costs of potential financial distresses as debt levels rise (Myers 2001). MacKie-Mason (1990), utilizing a probit model, found that companies with low marginal tax rates were more willing to issue equity. While the relationship between low tax rates and equity may be unequivocal, it is not obvious that greater issuance of debt securities will be associated with higher corporate tax rates.

## **IV. DATA AND METHODOLOGY**

The limited availability of internationally comparable information on debt securities has been a major constraint in determining the factors associated with debt market development. The data on domestic debt securities from the BIS is only available since 1989 for a gradually increasing number of countries. While the data do not cover all countries issuing debt securities, they do cover the large markets. Data on domestic issuers are segregated into public sector, financial institutions, and corporate issuers, the latter being the focus of this study.

We test the importance of the factors outlined above using annual data for 34 countries/regions<sup>2</sup> from 1989 to 2002. The dependent variable is corporate bond market capitalization as a share of gross domestic product (GDP) obtained from the BIS database. Data for public debt is also from BIS. Data on equity market capitalization for these years is from the Emerging Stock Markets and the International Finance Corporation. The variable on bank concentration, as measured by the share of the assets of the top three banks to total banking sector assets, is taken from Demirguc-Kunt and Levine (2001). The bank concentration ratios for People's Republic of China (PRC) and Taipei, China

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<sup>2</sup> These countries and regions are: Australia; Austria; Belgium; Brazil; Canada; Chile; PRC; Denmark; Finland; France; Germany; Greece; Hong Kong, China; Hungary; Iceland; India; Ireland; Italy; Japan; Korea; Malaysia; Mexico; Netherlands; Norway; New Zealand; Portugal; Singapore; Spain; Sweden; Switzerland; Taipei, China; Turkey; United Kingdom; and United States.

are estimated from national data. Data for GDP per capita, real economic growth, and private sector credit come from *International Financial Statistics* (IFS). Institutional investors are defined as the financial assets of institutional investors as a percentage of GDP and data is extracted from Datastream and the OECD database.

Information on legal and institutional variables is from La Porta et al. (1997) and subsequent papers. Dummy variables were constructed for creditors rights and legal system origins. In addition to the two institutional variables utilized, a large number of alternative variables, including accounting standards, creditor rights, and judicial efficiency were also considered but not included due to their lower explanatory power. The geographical instrument, country latitude, reflects the latitude of the country's capital city, and is normalized between zero and one with the capital farthest from the equator set at one. Corporate tax rates are from Deloitte Australia (personal communication) for the year 2000.

Merger and acquisition data come from the 2003 *World Investment Report* and reflect cross-border M&A from the economy of the seller as a share of each economy's GDP. The number of global corporations is taken from the Global 500 compilation (*Fortune Magazine* 1989-2002). In the generalized least squares (GLS) estimation, after some tests, the volume of M&A activity relative to GDP is lagged by one year to reflect the time necessary to put into place debt and equity financing.

Dummy variables are constructed for the defined contribution scheme. Relative to the PAYG scheme, one dummy variable is constructed for mandatory savings schemes in Chile, Denmark, Iceland, Malaysia, and Singapore throughout the period; and the Netherlands and Mexico from 1997 to 2002. Hungary; Hong Kong, China; and Australia comprise the dummy variables for 1998 through 2002. Another dummy variable is set up for countries that have had voluntary defined contribution schemes such as Canada, Ireland, Japan, United Kingdom, and United States for all years. The value for all other countries is assigned as zero (OECD 2000).

Government support refers to countries that used substantial government influence to promote corporate debt markets. Only two countries, Korea and Malaysia are deemed to fall into this group, and thus a dummy variable is used for these two countries. The definitions and sources of the variables are shown in Table 1.



**TABLE 1**  
**VARIABLE DEFINITIONS AND SOURCES OF DATA**

VARIABLES	DEFINITION	NATURE	SOURCE OF INFORMATION
CDEBT	Corporate debt outstanding as a percentage of GDP	Dependent variable	BIS
ACS	Accounting standard	Independent variable	La Porta et al. (1997) and subsequent papers
JSE	Judicial system efficiency	Independent variable	La Porta et al. (1997) and subsequent papers
CRD1, CRD2, CRD3*	Creditor rights	Dummy variables	La Porta et al. (1997) and subsequent papers
LSD1, LSD2, LSD3*	Legal system origin	Dummy variables	La Porta et al. (1997) and subsequent papers
GOVKM	Administrative support	Dummy variable for Korea and Malaysia	
CTAX	Corporate tax rate	Independent variable	Deloitte
BCONCT	Bank concentration ratio; share of the assets of the top three banks to total banking sector assets	Independent variable	Demirguc-Kunt and Levine (2001); national sources for PRC and Taipei, China
LATITUD	Latitude of the county's capital city	Independent variable	
FORTUN	Number of Global 500 corporations		<i>Fortune</i> magazine
DCSD1, DCSD2	Mandatory savings schemes, voluntary savings schemes, PAYG, and others	Dummy variables	OECD (2000) and other sources
GDEBT	Government domestic debt securities as a percentage of GDP	Independent variable	BIS
MKTCAP	Market capitalization of listed companies (% of GDP)	Independent variable	Emerging Stock Markets, International Finance Corporation
GDPP	GDP per capita	Independent variable	<i>International Financial Statistics</i>
GDPG	Real GDP growth rates	Independent variable	<i>International Financial Statistics</i>
INST	Financial assets of institutional investors as a percentage of GDP	Independent variable	OECD, Datastream
MA	Cross-border merger and acquisition	Independent variable	<i>World Investment Report</i>

The analysis uses the panel dataset to take account of the differing interest group incentives and institutional determinants for debt market development. The fixed effects or least squares dummy variables approach is inappropriate in this case as this method requires that there is within cross section variance in all variables for at least some of the cross sections. Equations are estimated using panel GLS with correction for heteroskedasticity and panel-specific autocorrelation.

## V. RESULTS

The central hypothesis of this paper is that a highly concentrated banking sector could more effectively protect itself from disintermediation caused by bond market development. The results support this hypothesis in that bank concentration is significantly negatively correlated with bond market development. The finding thus provides support for Rajan and Zingales's (2003) interest group theory of financial development. Banks oppose their own disintermediation that would occur with corporate debt market development. The power of the banks to resist disintermediation is related to their market power. The more concentrated the banking sector, the more negative this association appears to be. The results are presented in Table 2 below.

**TABLE 2**  
**REGRESSION RESULTS**

VARIABLES	COEFFICIENT	T-VALUE
LSDA	1.679	1.320
GovKM	13.466	5.03**
Ctax	-0.040	-0.559
BCONCT	-6.928	-2.01*
latitud	0.491	0.182
fortun	0.031	1.97*
DCSD1	-0.547	-0.653
DCSD2	1.445	2.14*
GDEBT	0.020	1.480
GDPG	-0.161	-3.39**
INST	0.037	6.51**
MA(-1)	0.207	3.39**
Constant	6.173	2.02*
R-squared	0.39	
Wald (joint): Chi <sup>2</sup> (12)	182.8	

\* means significant at the 5% level.

\*\* means significant at the 1% level.

Note: The dependent variable is corporate debt securities/GDP (CDEBT); t-ratios in brackets.

The US experience seems to confirm this observation. The US has one of the lowest bank concentration ratios, where the top three banks only constitute about 19 percent of total bank assets, while the ratios of corporate debt market to GDP average a relatively high level of 24 percent of GDP in 2000. Roe (1994) argues that the fragmentation of the financial system in the US as a result of a populist fear of large banks led to government placing restraints on the functional scope and geographical expansion of commercial banks, and to a multifarious financial system involving a large role for capital markets in general and debt markets in particular. By contrast the corresponding bank concentration of the top three banks in the United Kingdom was 89 percent, while its corporate debt market to GDP averaged less than 6 percent in 2000.

The results also confirm that outstanding corporate debt securities as a percentage of GDP are associated with a number of opportunistic elements. The presence of mandatory DCS schemes has a highly significant correctional effect on mandatory schemes. The important influence of mandatory DCS schemes on capital market development was first noted in Chile after their introduction in the early 1980s. The beneficial effects have been subsequently evident in most of countries where such schemes have been introduced to tackle the problem of rising financial burdens on the current generations from the PAYG pension plans in line with aging populations. The availability of long-term savings related to such schemes can contribute to corporate debt market development. For a similar reason, the importance of institutional investors is reflected in the positive and significant correlation with corporate bond market development.

Other elements such as the volume of M&A activity as a share of GDP have also produced the positive signs expected. M&A activity often involves the utilization of high levels of debt in order to control local management that had been prone to overinvest, especially in newly privatized state-owned enterprises. As noted by Myers (2001), this utilization of debt to finance M&A activity provides a solution to Jensen's (1986) free cash flow problem. As the financing is arranged by international purchasers, there is a higher probability that debt markets will be accessed as there may be no relationships with local banks.

The importance of the presence of large global companies as measured by the number of Global Fortune 500 countries is also confirmed by the results. This variable is significant and positive. Large corporations that can issue securities on a "name" or reputation basis provide the key issuers for corporate debt markets. As an optional form of external finance, corporate debt securities issuance responds to unexpected investment requirements that exceed internal cash flows of mainly the larger, creditworthy corporations. In this sense it is also not surprising that the presence of Global 500 corporations within the economy appears to contribute to the development of debt markets, perhaps through overcoming the network effects associated with the development of such markets or in providing a countervailing influence to the banks within the financial sector. Clearly, outward-looking economic policies are supportive of corporate debt market development.

Government debt markets are also positively related to corporate debt market development. Government support for corporate debt market development is captured by the dummy variables for Korea and Malaysia, which shows that government support is associated with corporate debt market development.

Institutional determinants such as accounting standards, creditor rights, and judicial efficiency were used in regressions. However, as noted by Pistor et al. (2003), improvements in the law often come about in response to the challenges posed by the growth of financial sectors. Also, less developed

countries have volatile investment environments and heavy government involvement in commercial activity. Often they have weak creditor rights, inadequate transparency, and poor corporate governance. In light of these problems of endogeneity and the correlation between income and the institutional determinants, the legal origin variables are used as an instrumental variable. The English legal origin was found to be positively correlated with corporate debt market development. This is consistent with La Porta et al. (1997 and 1998) who assert that countries with market-based financial systems are much more likely to have English common law origins.

The latitude of the concerned country is utilized as an instrument variable for the exogenous component of income and income-related institutional development. The instrument variable was insignificant. This suggests that income level may not be highly correlated to bond market development.

The sign of the real growth rate of GDP is unexpectedly negative. One reason for this may be that, as investment needs outstrip internal financing during economic expansions, the first recourse for external debt is often to the banks under available credit lines. However, as interest rates fall in the subsequent trough of the economic cycle with the decline in real growth rates, refinancing decisions are undertaken and large-scale bond financing may be implemented at the lower interest rates to reduce bank debt. The effect of corporate tax is also insignificant, suggesting corporate tax rate is not a major factor affecting bond market development.

## VI. EQUITY MARKET DEVELOPMENT

To further explore the intrinsic idiosyncrasy of bond market development, the same set of variables is utilized to examine equity market development in the same countries. The intention is mainly to reflect the markedly different associations that these variables have relative to different segments of the financial system. This exercise demonstrates that debt and equity markets are not subject to the same developmental associations.

An important contrast is found with respect to the impact of bank concentration. In the case of equity markets, a higher level of bank concentration ratio is positively related to equity market development. As banks do not generally provide equity financing, there is no conflict of interest in contrast to debt financing that could potentially replace bank credit. Indeed, banks may see equity market listings as a positive development for corporate creditworthiness, given the additional governance oversight provided. The relationship between equity market development and banking sector concentration supports the interest group theory from a different angle.

Another interesting difference is that higher corporate tax rates that were not related to corporate debt market developments are significantly and negatively related to equity market development in line with MacKie-Mason's (1990) findings. The results also show that English legal origin is significant and highly positive, in a result also obtained by La Porta et al. (1997). The volume of M&A activity is significant and positively correlated to equity market development, as for corporate debt market development. However, the importance of the global company is insignificant, suggesting that the presence of large, well-known companies may not be as important a factor as in the case of bond market development. Latitude is negatively related to equity market development, suggesting that countries that are further away from the equator, which tend to be more developed and have higher per capita income, also tend to have more developed equity markets. GDP growth is also positively related to equity market capitalization, as expected.

**TABLE 3**  
**REGRESSION RESULTS**

VARIABLES	COEFFICIENT	T-VALUE T
LSDA	21.616	1.530
GovKM	-12.005	-0.413
Ctax	-4.730	-6.030**
BCONCT	110.110	*2.890**
latitud	-184.431	-5.990**
fortun	0.151	0.845
DCSD1	-24.664	-2.340*
DCSD2	-2.762	-0.315
GDEBT	0.373	2.210*
GDPG	2.736	4.520**
INST	0.870	12.300**
MA(-1)	1.954	2.480*
Constant	181.703	5.290
R-squared	0.572	
Wald (joint): Chi <sup>2</sup> (12)	362.6	

\* means variables are significant at the 5% level

\*\* means variables are significant at the 1% level.

Note: The dependent is equity market capitalization/GDP (MKTCAT); t-ratios in brackets.

## VII. CONCLUSIONS AND POLICY IMPLICATIONS

This study is an initial attempt to reflect factors that are associated with the development of corporate debt markets. It particularly seeks to explore the relationship between banking sector structure and corporate bond market development. The results support Rajan and Zingales' (2003) interest group theory of financial development. The study provides some evidence that banks oppose corporate debt market development because of the disintermediation they would suffer as a result. Banks are likely to resist the development of debt markets as they have the potential of providing competition across a full range of debt maturities including, for example, long-term corporate bond debt as well as short-term commercial paper debt. Thus, there is competition between banks and bond markets in providing external finance. Banks are a key interest group in the development of corporate debt markets due to the effects the latter have on their disintermediation, as corporate bonds can be viewed as a loan substitute. In some circumstances, highly concentrated banking systems may succeed in depriving bonds of market development.

Corporate debt markets can only develop in an environment where the natural resistance of banks can be overcome. Substantial progress in developing local currency corporate debt markets may not be possible without addressing issues associated with the position of incumbent banks in the financial sector. Banks have often been supported by central banks or other government agencies that have the power to approve bond issues. Rajan and Zingales (2003) note that in an earlier period Japanese banks withheld the access of corporations to the bond market in Japan through their control of the Bond Committee. The Committee was formalized in 1933 and determined which companies could issue bonds, on what terms, and when. Partly due to the influence of the committee, the Japanese bond market shrank. In 1929, the liability side of large Japanese company balance sheets consisted of 26 percent bonds and 17 percent of bank debt. By 1943, the percentage of bonds had fallen to 6 percent, while that of bank debt rose to 47 percent.

Several factors can countervail the power of banks. Sustained governmental support can result in major gains for the development of such markets. This is not only historically evident in the US, but also in the rapid development of corporate debt markets in Korea and Malaysia that occurred during the 1990s. While the nature of the support varied between the two countries, both governments provided support to ensure that an adequate level of infrastructure was present for the debt markets, intervened to support the funding of specific issues, and leaned on the banks to guarantee most of the bond issues. With these governmental programs in place, the corporate debt market in Malaysia rose from 4.4 percent of GDP in 1989 to 47.7 percent in 2000; while in Korea, the corporate debt market rose from 11.1 percent of GDP in 1989 to 26.0 percent in 2000.

The Korean and Malaysian experience shows that governmental support can substantially overcome the influence of commercial banks. However, there are also risks to the integrity of the markets from such government intervention. For example, the widespread utilization of banks to guarantee corporate bonds in Korea and Malaysia may have had a negative impact on the creditworthiness of those banks during the Asian crisis. The relative importance and risks of governmental actions to developing corporate debt markets is a subject warranting further research.

The active involvement of banks in the development of debt markets is perhaps a good way to overcome their opposition to bond market development without the risks of administrative directions from the governments concerned. One of the potential approaches to enlist commercial bank support for corporate debt market development is to encourage them to lead the effort in niche markets. For example, mortgage-backed securities allow banks to fully participate in debt market development through mortgage origination fees. Further, securitization of mortgages takes these longer-term loans off banks' balance sheets and reduces their maturity mismatches. Such approaches may lessen bank opposition to the development of debt markets. This secondary mortgage market approach to soliciting the cooperation of banks originated in Malaysia and is now being implemented in Hong Kong, China. At the shorter end of the market, banks have usefully participated in the securitization of receivables, such as those that originate from their credit card issuance.

The development in securitization of mortgage and consumer credits blurs the traditional distinction between intermediation through a bank, which typically acquires long-term nonmarketable loans held on the balance sheets until maturity, and that through capital markets where assets trade in secondary markets (Turner 2002). These developments suggest that the bank-bond market development relationship

needs to be viewed in a dynamic sense. While banks may oppose the development of bond markets initially, this relationship may evolve and change over time.

In the long run, banks can survive only if they adapt and learn to play a major role in capital markets. Over time, banks can evolve as issuers, investors, and intermediaries of bond markets. For example, in Indonesia banks hold the majority of corporate bonds. This used to be the case in Argentina, Brazil, Chile, and Malaysia as well. Some banks derive more profit from such activities and less from lending. For this reason, it is important to have healthy banks as potential contributors to a sound bond market, while a bond market may improve the health of banks by improving market discipline (Hawkins 2002). This suggests that a complementary relationship between banks and corporate debt market development may come into being.

Outward-looking economic policies will also help bring pressures to develop debt markets in order to reduce capital costs and associated risks. This is highlighted though the impact of cross-border M&A activity on their development. Corporate debt securities issuance responds to unexpected investment requirements that exceed internal cash flows of larger, creditworthy corporations. In this sense it is also not surprising that the presence of Global 500 corporations within the economy appears to contribute to the development of debt markets, perhaps through overcoming the network effects associated with the development of such markets or in providing a countervailing influence to the banks within the financial sector.

Defined contribution saving schemes also benefit corporate debt market development, most likely due to the long-term and distributed nature of the savings that are generated. This is a beneficial spillover from solving the deficiencies of the pay-as-you-go pension systems under pressures of aging populations. Not surprisingly, the development of institutional investors also benefits bond market development.

It is also important to note that different factors have different impacts on corporate debt markets and equity markets respectively, so that caution needs to be exercised in making assumptions about different components of the financial system.

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