

CAPITAL STRUCTURE AS A MECHANISM
OF CONTROL:
A COMPARISON OF FINANCIAL SYSTEMS

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Abstract

This paper presents data on capital structure in the corporate sectors of six countries and relates the observed differences to the industrial finance system. Two distinct models of financial systems are identified and their properties analyzed based on the incomplete contracting literature. The theoretical framework suggests and the data presented confirms that the different dimensions of capital structure - gearing levels, the degree of concentration of holdings as well as the degree of homogeneity of shareholders and creditors - are strongly interrelated.

Debt/equity ratios are found to be higher and ownership of debt and equity more concentrated in countries where commercial banks dominate corporate finance and often hold control blocks of equity. These differences in capital structure have implications for, among other things, how problem firms are reorganized. The article suggests that the degree of government regulation of commercial banks' equity holdings and involvement in firm reorganizations has been important in determining the observed patterns.

1. INTRODUCTION

A firm's capital structure can be viewed as describing the allocation of risk and control among investors. By capital structure we refer not only to the ratio of debt to equity, but also to the relative importance of different debt and equity instruments as well as to the degree of concentration and the homogeneity of holdings of these instruments. Casual observation indicates that capital structure varies substantially across capitalist countries. Yet, our understanding of these differences and their implications is limited. Why are creditors (shareholders) in some countries willing to extend (accept) credit far beyond levels considered viable in other countries? Why has ownership of debt and equity become widely dispersed in a few countries, while holdings of these instruments remain much more concentrated in most countries? What effects, if any, do these differences in capital structure have for real decisions?

This paper compares capital structure in six capitalist economies. We classify these countries into market- and bank-oriented financial systems. The features distinguishing the two types of systems are interpreted using the incomplete contracting literature. We find higher gearing ratios and more concentrated ownership of both debt and equity in bank-oriented financial

systems. The higher debt levels indicate a greater likelihood of insolvency, i.e, creditors have control and carry risk over a wider range of future states.

We claim that these differences at least to some extent can be attributed to the absence of strong restrictions on commercial banks in these countries. Since banks can more effectively exercise control, they are willing to extend credit beyond levels observed in market-oriented financial systems. In fact, commercial banks actively utilize high gearing ratios to initiate financial distress as a means of reorganizing problem firms. This claim is consistent with the observation that creditor reorganization is relatively more common and takeovers not as frequent in bank-oriented financial systems. In general, these systems seem to rely more on internal conflict resolution than market-oriented financial systems. As a result, ownership structures are more stable.

The theoretical framework chosen for this analysis focuses on the incomplete nature of the firm's contracts, i.e, that they do not fully specify the parties' obligations for every conceivable contingency. The interpretation of capital structure put forward by the incomplete contracting literature provides us with both a descriptive model and an analytical tool. This framework allows us to describe the allocation of risk and control and analyze its consequences without initially imposing an informational struc-

ture, i e, without making assumptions about the degree and nature of asymmetric distribution of information between the contracting parties. This makes the incomplete contracting approach particularly suitable for international comparisons since such informational asymmetries, to the extent they can be captured and quantified, are likely to vary across countries.

The incomplete contracting literature views the standard financial instruments, debt as well as equity, as conferring both control rights and rights to return streams. Furthermore, the literature does not ex ante confine the contracting parties to a narrow set of standard instruments, but rather leaves the design to the parties. The conclusions arising from this approach also seem to capture fairly well some of our intuitive understanding of the differences between financial systems. In addition, as a theoretical framework the incomplete contracting literature generates a number of interesting hypotheses which can be analyzed in formal models and tested empirically.

We derive some stylized facts about differences in capital structure by analyzing data from six countries - five large capitalist economies (Federal Republic of Germany, France, Japan, United Kingdom, and United States) and Sweden. The choice of countries was quite natural considering their size and importance for the world economy. Sweden was included since data for that country was easily accessible. The data has been derived primar-

ily from national accounts and surveys of the corporate sector in the individual countries. The methodological problems involved in using this type of data are immense. We will indicate the limitations of particular data as we use them and refer the reader to more elaborate discussions of these issues.

The outline of the article is as follows: Section 2 briefly presents the incomplete contracting approach to capital structure. A number of new interpretations of empirical observations on capital structure emerge from this literature. In Section 3 the financial systems of six countries are described and classified as either bank- or market-oriented. A number of features distinguishing the two types of systems are identified. These characteristics are interpreted in Section 4 based on the incomplete contracting literature. Particular emphasis is given to the procedures for handling conflicts between investors when firms are in financial distress. The concluding Section 5 discusses the implications of this incomplete contracting interpretation for the functioning of the two systems.

2. THE INCOMPLETE CONTRACTING VIEW OF CAPITAL STRUCTURE

The theory of capital structure is concerned with why financial contracts appear in certain patterns and why these patterns differ across industries and across countries (Hart, 1987). Our focus here is on international differences in capital structure. In modern finance literature à la Modigliani & Miller (1958)

where financial instruments only entitle their holders to return streams and where capital structure does not matter, such differences between countries are merely accidental¹. At the most, explanations based on different corporate tax schemes could be put forward².

According to the traditional property rights school, capital structure is not a matter of indifference (for a survey see De Alessi, 1983). This approach emphasizes that financial instruments also confer rights of control. Its primary concern has been with the identification of ownership and control rights and with the effects on efficiency as these two types of rights are separated from each other. However, the property rights school has little to say about debt and the relative importance of debt and equity, since ownership rights are by definition vested with the owners of the firm and no distinction is made between control in different states of nature.

The claim here is that the incomplete contracting literature provides a better framework for description and analysis of international differences in capital structure (for two surveys

¹. In fact, it is widely held that "there is no difference between debt and equity from an economic perspective" (Easterbrook & Fischel, 1986).

². Studies of the relationship between taxation and capital structure find no systematic support for this conjecture (see, for example, King & Fullerton (1985) and Ando & Auerbach (1985)).

of this literature see Hart & Holmström (1987) och Holmström & Tirole (1989)). As in the property rights approach, it is recognized that shares of corporate stock confer both rights to return streams and control rights. But, in contrast to the property rights literature, the incomplete contracting framework considers also the control element of debt contracts and the state contingent nature of control, i e, that contracts often make the allocation of control dependent on the state of nature. The foundation is that contracts are necessarily incomplete, i e, they do not stipulate the parties' obligations for every conceivable eventuality³. Incompleteness gives rise to the problem of how to allocate control in situations not covered by the initial contract, the so-called residual control rights. Indeed, control is void of meaning if all future actions and states could be specified ex ante. In the incomplete contracting literature financial contracts are defined in terms of how they allocate the residual control rights. In fact, instruments cannot be distinguished based on their return characteristics.

To better understand the incomplete contracting approach to capital structure, it helps to think, as Aghion & Bolton (1988) do, in terms of a simple two period model with one owner/entre-

³. A complete contract specifies each party's obligation in every conceivable eventuality, i e both states and actions are stipulated in the contract (Hart & Holmström, 1989). This should be distinguished from a contract that is fully contingent in the Arrow-Debreu sense.

preneur and one outside investor. The parties ex ante have to agree how to allocate control in the second period. They may decide to share control or to let one of the parties have control irrespective of what happens in the first period⁴. Aghion & Bolton demonstrate how both parties can be made better off, if they make the allocation of control in the second period contingent on the first period outcome. In "good" states the entrepreneur maintains control, while the outside investor assumes control in "bad" states. This, according to Aghion & Bolton, is the essence of the debt contract, since contracts in the incomplete contracting literature cannot not be distinguished by their return characteristics.

By deciding on the level of debt the parties implicitly determine the point of insolvency. Financial distress is thus endogeneously determined, i e, distressed states are merely those "bad" states in which the parties ex ante agreed to transfer control from shareholders to creditors. The contracting parties, through the debt contract, ex ante build in a mechanism of control transfer.

Whereas the agency literature (see e g Jensen & Meckling (1976)) takes the standard debt and equity instruments as given and

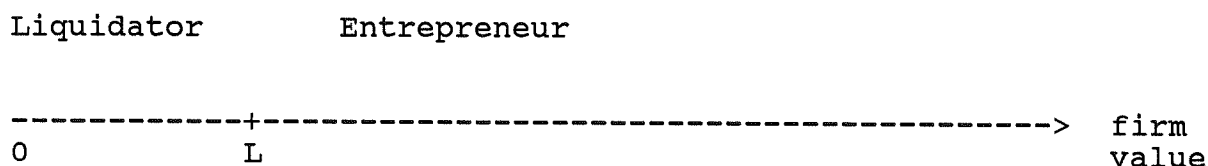
⁴. Control is here understood as the right to determine the action to be taken in a certain state. It is depicted as a dichotomous variable - an investor or a collective of investors have either full control or no control at all. In real life, of course, control is transferred gradually from one party to another.

discusses the allocation of control based on the characteristics of these contracts, the incomplete contracting approach asks why these instruments were chosen in the first place. The standard agency conclusion is that owners should have control since they are the residual claimants. This, however, is merely tautological in that it was assumed already at the outset. The incomplete contracting approach, on the other hand, suggests that the parties first decide who is most suited to control the firm in various situations. Given this allocation of control, returns streams are designed so as to provide the appropriate incentives to exert effort, i.e., the investor holding the residual control rights over a certain range of states should also bear the risk associated with the decisions in these states.

In the Aghion & Bolton context, the owner/entrepreneur obtains private benefits from the firm as a going concern, or alternatively he suffers costs if the firm is closed down. Consequently, he is assumed to be less suited as manager when firm value goes below liquidation value (L) (see Figure 2.1). Thus, control should be transferred to the external investor in these states⁵. This is achieved by setting the level of debt (D) equivalent to L .

⁵. Aghion & Bolton assume that firm value is not verifiable by a third party while profits are. Thus, contracts are made contingent on profit realizations rather than value.

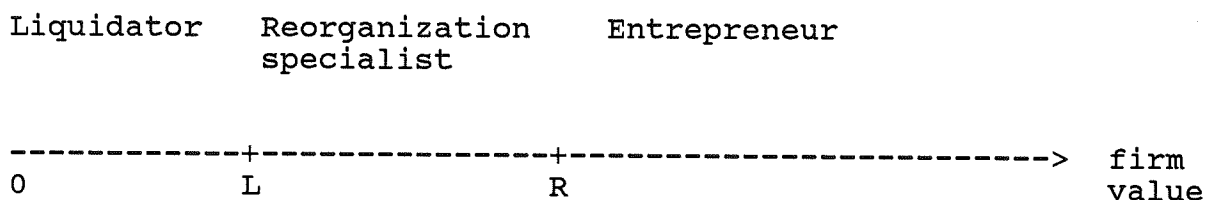
FIGURE 2.1 ALLOCATION OF CONTROL ACROSS INVESTORS AND STATES



In the Aghion & Bolton model, the transfer point is set to approximate liquidation value. Thus, the outside investor only carries risk to the extent that profits are an imperfect indicator of firm value. In real life, however, we observe that creditors are willing to extend loans far beyond the liquidation value. As a result, creditors' claims are partially secured, partially unsecured.

To illustrate this we assume that there are states above liquidation value (L through R in Figure 2.2) where the parties ex ante would prefer control to be transferred. For example, there might be certain investors specializing in reorganizing problem firms. This "reorganization specialist" normally has a stake in the firm as a going concern. Thus, he should also be relieved of control when firm value slides below L.

FIGURE 2.2 ALLOCATION OF CONTROL ACROSS INVESTORS AND STATES
(WITH REORGANIZATION SPECIALIST)



Given that this is the desirable allocation of control, each investor should have a contract which makes him the residual claimant in the states where he is in control. Grossly simplified, the liquidator should hold secured debt, the reorganization specialist unsecured debt (or equity), and the entrepreneur equity. Again, the likelihood of financial distress is generated endogeneously and not directly related to any particular firm value. The parties might very well decide ex ante to let shareholders, potentially an outsider group of shareholders, deal with firm reorganization at low firm values between L and R. They do so by setting the debt level at, or close to, liquidation value.

So far we have only dealt with the immediate conflict arising from the fact that the entrepreneur obtains private benefits from continued operation of the firm whereas the external investor does not⁶. However, once the parties have agreed ex ante on the design of the financial contract, a security related ex post

⁶. Alternatively, the owner/entrepreneur suffers private costs, such as loss of reputation, if the firm is shut down.

conflict emerges. When firm value slides and the likelihood of financial distress rises, the incentives of equityholders become increasingly distorted. The owner/entrepreneur wants to pursue more risky strategies, i e, to gamble with external investor's money. This is the conflict between shareholders and creditors addressed in, for example, Stiglitz (1985).

The potential takeover raider was here introduced somewhat arbitrarily. The determination of capital structure becomes immensely more complicated as we consider the case with more than one external investor, not to speak of the widely held firm. For example, it is hard to argue that shareholders as a collective obtain considerable private benefits from the operation of the firm. Thus, an argument for why control in widely held firms should be transferred has to be based on security related benefits. When the firm is in financial distress, shareholders do not bear the full costs of their decisions, i e, they have an incentive to gamble with creditors' claims.

Furthermore, in the widely held firm the production decision has to be taken by a collective, either by the shareholders when the firm is in non-distressed states or by the creditors when the firm is insolvent. The optimal transfer point will be affected by the relative costs of these two collective choice mechanisms. In most cases creditor interests are more diverse than shareholders due to differences in maturity, collateral and interest rates

(Hansmann, 1988). Therefore, *ceteris paribus*, the transfer point, and consequently debt levels, should be lower in widely held firms than in than in the case with only owner/entrepreneur and one external investor. According to the same line of reasoning, we expect lower debt levels when the creditor structure is dispersed than when it is concentrated, assuming that creditors are risk neutral. However, these effects have yet to be modelled carefully.

Another observation from the incomplete contracting literature is that a contracting party cannot be trusted to hand over control voluntarily. Since firm value is assumed not to be verifiable by an external party, transfer is made contingent on profits. However, even accounting figures are imperfectly verifiable and relatively easily manipulated by the firm's management. Consequently, we seldom observe real life contracts where the allocation of control is contingent on profit levels. Rather, transfer is triggered at the point of technical insolvency, i e, when the firm cannot meet its obligations towards creditors. If only failure to fulfill payment obligations is verifiable, the determination of the transfer point is transformed from a valuation problem to a cash flow issue. In the case of a closely held firm with one investor this distinction might not be so important, but when we analyze the widely held corporation it is of major importance. To ensure that transfer occurs at the

appropriate firm value, the outside investor might require to have a non-negligible share of votes also in "good" states. The incomplete contracting approach to capital structure maintains that basically any allocation of control across investors and states of nature can be achieved through the design of the financial instruments. Yet, the theoretical discussion suggested that debt levels are related to the concentration and relative homogeneity of the shareholder and creditor collectives. Furthermore, the debt/equity ratio has implications for the choice of mechanism when a firm is in needs of reorganization. In the following section, data on capital structure in the corporate sector of six capitalist economies are used to explore these correlations between different dimensions of capital structure and between capital structure and real decisions.

3. SIX FINANCIAL SYSTEMS - A STATISTICAL OVERVIEW

3.1 Financial Systems Defined

The financial system refers here to the industrial finance system, i e, the institutional arrangements designed to transform savings into investments and to allocate funds among alternative uses within the industrial sector. This allocation is handled by a set of financial markets and a set of financial institutions providing various intermediation services. In the following, we will discuss two types of financial systems and identify their

main characteristics based on official statistics and secondary material for the six countries in our study⁷.

3.2 Bank-Oriented and Market-Oriented Systems

The financial systems of the capitalist countries can be classified into two groups - bank-oriented and market-oriented financial systems. The two concepts are frequently used in the literature, but they are rarely clearly defined (for some rudimentary definitions and classifications, see Rybczynski, 1985). It is not our intention to show that the two models are the only existing ones, nor do we claim that the countries covered by our study perfectly match our models⁸. As Zysman (1983) points out, there do seem to be a limited number of feasible arrangements, certainly empirically and perhaps theoretically.

⁷. The methodological problems involved in this type of cross-country comparisons are tremendous. The most important data sources for the study of financial systems are national accounts and surveys of company financial statements. The comparability of data is reduced due to differences in accounting principles and coverage of surveys. Recent improvements in data collection have been offset by the increasing pace of change in the financial systems. This study uses primarily OECD Financial Statistics, Parts I-III. The pioneering work by Goldsmith (1985) as well as the work within the CEPR project (Bray et al, 1987) have been helpful in developing comparable measures with interesting content. The statistics used here only covers the period up to 1983 and in some cases 1984. The major changes in the financial markets during the second half of the 1980's are not covered by the study.

⁸. Zysman (1983) uses the term credit-based instead of bank-oriented. For these financial systems, he also distinguishes between those with administered prices and those where price formation is dominated by banks. This distinction is particularly important for Zysman's analysis of the role for government intervention in the economy.

The bank-oriented systems are normally characterized as having less developed financial markets, in particular for risk capital. Consequently, the opportunities for diversification and hedging are more limited than in the market-oriented financial system. The savings in the bank-oriented system are primarily transferred in the form of short-term and long-term credits through banks and other savings institutions. Typically, government supports bank lending and actively intervenes to influence the costs of various forms of finance.

In the market-oriented systems there exists a wider range of financial instruments and capital markets. Households here invest a larger share of their savings directly into production. Banks primarily meet the short-term financing needs of the corporate sector and are thus less important in the provision of long-term funds. They also receive a larger share of their funds from other sources than households, primarily through borrowing in intermediate markets. The central bank is concerned primarily with the control of monetary aggregates, i e, money supply or interest rates. Government regulates the banking sector but normally refrains from active intervention.

Following this classification scheme, United States and United Kingdom are normally referred to as market-oriented, while France, Japan and West Germany are characterized as bank-orient-

ed⁹. Sweden, the sixth country in our study, is much smaller than the others making direct comparisons more difficult. Most observers would probably characterize the Swedish financial system as bank-oriented, at least as it appeared in the early 1980's. As is obvious from this crude classification, there are substantial variations within the two categories. Indeed, some of the more interesting international differences, from an institutional point of view, are found within the group of bank-oriented systems. Furthermore, due to recent developments in the financial markets, in particular increasing securitization and internationalization, financial systems have converged along some dimensions. Nevertheless, we believe the distinction to be of significant interest for the subsequent analysis. In fact, it might help us understand the implications of the on-going changes in the financial systems.

⁹. This classification follows Rybczinski (1985), but is also identical to that used by Bray et al (1987) even though they do not use the term bank-oriented and market-oriented. The most questionable characterization probably concerns the British financial systems. After WW II, the financial systems of United States and United Kingdom were relatively intact and well-developed. However, during the postwar period the two systems have developed quite differently, in particular during the 1970's. While bond markets have grown in importance in the United States, the British corporations have increasingly been seeking other forms of debt finance. The recent liberalization of the financial markets has again strengthened the market-orientation of the financial system in the United Kingdom. As stated earlier, Zysman (1983) distinguishes between two types of bank-oriented (or in his terminology credit-based) systems: those with administered prices (Japan and France) and those where price formation is dominated by banks (West Germany).

3.3 Financial Markets and Financial Institutions

Judging from some standard measures, the six countries are remarkably similar when it comes to the size of the financial sector relative to the economy as a whole or to the real sector (see Goldsmith, 1986; and Berglöf, 1988). In fact, even when we compare the relative importance of primary and secondary security markets for corporate securities it is difficult to identify systematic differences between the two types of systems. Traditionally, United States has had by far the largest (in absolute terms) and most developed secondary markets for stocks and corporate bonds. The security markets in West Germany and France have trailed far behind in most respects. The ranking is less clearcut for United Kingdom and Japan. It depends on whether we compare equity or bond markets, primary or secondary markets, and size or activity levels.

The differences between the two types of financial systems stand out clearly first when the relative importance of various financial institutions is compared. As expected, banks hold a higher share of total domestic financial assets in the bank-oriented systems covered by our study (Goldsmith, 1986). Furthermore, the lending activities of the banking sector is more

directed to corporate financing¹⁰. Yet another characteristic of the banking sector in the bank-oriented financial systems is the heavy concentration and substantial government ownership¹¹.

3.4 Capital Structure

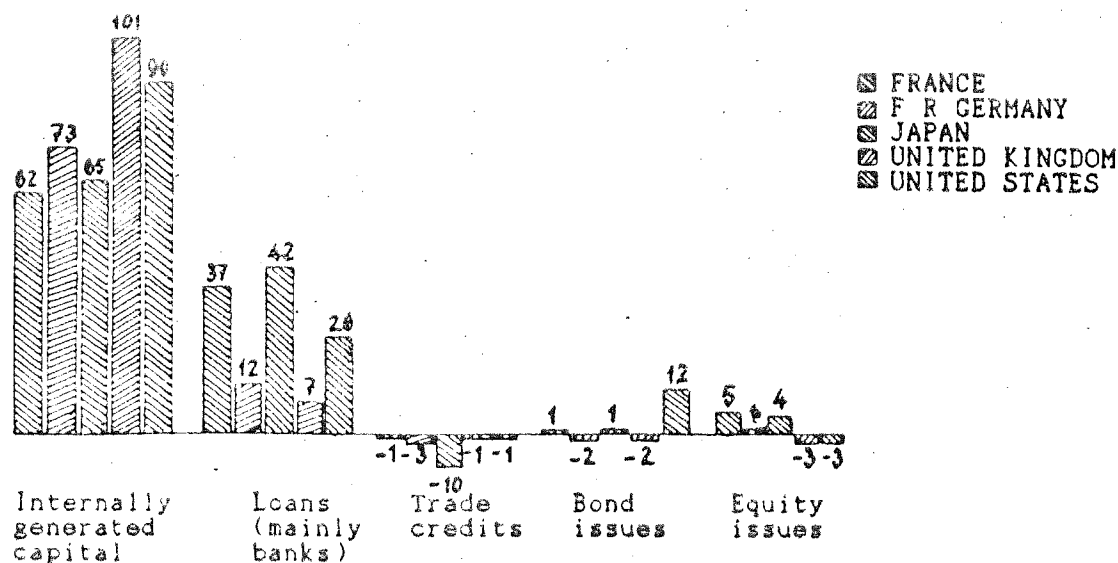
The differences between the two systems are further highlighted when the capital structure of the corporate sector is analyzed. When compared to their counterparts in market-oriented systems, firms under bank-oriented financial systems typically have a capital structure characterized by low degrees of internal funding and high debt/equity ratios (Figure 3.1 and Table 3.1). Accounting procedures differ across countries distorting international comparisons of debt/equity ratios. Table 3.2 shows some attempts to make data on market value gearing ratios comparable

¹⁰. During the 1970's on average 80-90 per cent of the commercial bank lending went to the corporate sector. The corresponding figure for the United States was approximately 40 per cent.

¹¹. In France, for example, seven of the ten largest banks are government-controlled. The three largest banks accounted for close to 50 per cent of total bank lending in 1986. The Japanese government does not have a major ownership interest in any of the major commercial banks, but it exercises control over the influential Industrial Bank of Japan and the banks specializing in long-term lending to industry. In addition, the government-owned Postal Savings System plays a major role in channeling funds from savers to the corporate sector. The postal system alone accounted for one-fifth of the total assets of the financial sector in 1986. In West Germany, the publicly-owned special giro institutions and the savings and loans associations handled slightly more than half of the commercial banking activities. Westdeutsche Landesbank with public ownership now belong to the three largest commercial banks both in terms of total assets and total lending. The degree of concentration is substantially lower and government ownership in the commercial banking sector virtually non-existent in United States and United Kingdom.

across countries. The structure of debt in the bank-oriented financial systems is characterized by a significantly higher share of bank credits (see Table 3.3). Furthermore, the creditor structure in large companies in these systems is heavily concentrated and dominated by main banks. Creditors are considerably more dispersed in the market-oriented systems. This is particularly true for the United States, the only country where bond financing is of any major importance to the corporate sector (see Figure 3.1). The bank lenders in these systems are also less monolithic, lacking the dominance of the main banks.

FIGURE 3.1 NET SOURCES OF FINANCE 1970-1985 a)
(per cent (b) of 1985 capital stock(c))



Notes: a) A net source of finance is defined as new issues or disposals of a particular type of liability less acquisitions of the same type of liability (e.g. new issues and sales of shares less purchases of shares). A negative number therefore implies that non-financial enterprises have made net purchase of an asset from other sectors of the economy over the whole period.

b) Shares do not add to 100 per cent because of the omission of capital transfers, short-term securities, trade credit, other sources and statistical discrepancy reported by the OECD.

c) The capital stock is calculated as the sum of annual investment since 1970, valued at 1984 prices and assuming straight line depreciation over 17 years.

d) 1972-1984 only

Source: OECD Financial Statistics, Part 3, various years

Mayer, Colin, 1987, "New Issues in Corporate Finance,"
mimeo, London: City University Business School

TABLE 3.1 DEBT/EQUITY RATIOS IN SIX COUNTRIES

	Net Debt/Equity Equity Ratio 1) <u>1983</u>	Gross Debt/ Equity Ratio 2) <u>1983</u>
F R Germany	..	.59
France	.67	.73
Japan	.68	.77
Sweden	.50	.65
United Kingdom	.40	.55
United States	.23	.41

Notes: 1) Book value of net liabilities in relation to equity excluding holdings of shares in other corporations (Corbett & Mayer, 1987).

2) Book value of short-term and long-term liabilities relative to total assets.

Sources: OECD Financial Statistics, 1985

TABLE 3.2 MARKET VALUE GEARING RATIOS IN JAPAN AND THE US: 1979-1981

	Japan		United States	
	A	B	C	D
1979	0.59	0.64	0.38	0.36
1980	0.57	0.60	0.35	0.32
1981	0.56	0.62	0.30	0.28

Sources: A Wakasugi et al (1984)
 B Unofficial Bank of Japan estimates (1986)
 C Holland and Myers (1984)
 D Taggart (1985)

(A-D quoted in Jenny Corbett, 1988, "International Perspectives on Financing: Evidence from Japan," Oxford Review of Economic Policy, Vol. 3, No.4)

TABLE 3.3 BANK CREDITS AS A PERCENTAGE OF TOTAL LIABILITIES

F R Germany	..
France	.247
Japan	.393
Sweden	.242
United Kingdom	.103
United States	.089

Source: OECD Financial Statistics, 1985, Part 3.

The ownership structure in individual firms under bank-oriented systems is, in general, more concentrated (see Table 3.4 in Appendix)¹². The incidence of controlling owners, i.e. shareholders abstaining from diversification opportunities in order to control companies, is higher¹³. This is true for individual as

12. The statistics on ownership structure in industry is often of poor quality. Furthermore, the data is rarely directly comparable across countries due to differences in methods of collection and in institutional arrangements. For this report a number of independent studies have been used. They differ primarily in terms of sample size and measures of concentration. Sample sizes range from the 100 largest companies to slightly below the 600 largest according to turn-over or employment. (For our purposes, market value would have been the best measure, since it provides an estimate of the cost of control.) Due to the limited comparability of the results only preliminary conclusions can be drawn. In particular, the difference in firm size across countries is critical. Despite these shortcomings, a clear pattern emerges. The results appear remarkably robust to various tests of sensitivity (Berglöf, 1988).

13. The statistics on ownership concentration conceal important differences in shareholding patterns within the group of bank-oriented financial systems. In France and West Germany, family control is still important even in large firms. The role of family ownership in large Japanese companies was effectively eliminated after WW II, when the occupation forces dismantled the family-controlled holding companies. Controlling shareholders are mainly industrial corporations and financial institutions. Furthermore, the aggregation of shareholdings in Japan according to the corporate groupings (financial keiretsu) might give a

well as institutional owners. In particular, bank shareholdings are more important, both as a share of bank portfolios and when seen from the perspective of the company¹⁴. The shares of interfirm shareholdings are also higher in countries with bank-oriented financial systems (see Table 3.5 in Appendix). The fact that firms in these systems generally are more closely-held can be partially attributed to the smaller average firm size, but it also holds for firms with the same market value.

Another feature distinguishing the bank-oriented systems in our study from their market-oriented counterparts is their longer term shareholdings (see Berglöf, 1988). Controlling blocs of shares are relatively seldom transacted. Hostile takeovers as a mechanism of transfer of control from one set of shareholders to another has been much less common. As a result of the higher

misleading picture. The coordination within these groups is limited and varies from group to group (see Sheard (1986) and Aoki (1989) for a discussion of these groupings and the role of commercial banks). Nevertheless, since one of our primary concerns is with the effects of ownership concentration on the likelihood of takeovers, we have chosen to combine holdings.

¹⁴. In United States and Sweden, where commercial banks are, in principle, not allowed to hold shares, bank shareholdings were negligible according to OECD Financial Statistics (Parts 1 and 2, 1986). For British banks the importance of shareholdings in their portfolios has decreased markedly during the last decade. If viewed from the perspective of ownership structure in industry, banks held about 4 per cent of outstanding stock value on the Paris Exchange in 1979. In Germany, the corresponding figure was 8 per cent (1983) and in Japan as high as 20 per cent (1982). In United Kingdom bank ownership was of little significance as measured by its share of total listed stocks.

incidence of control posts and the long-term holdings, owners are generally well-known and at least easily identified.

3.5 Summary of Statistical Overview

The results of our statistical comparison of the six financial systems are summarized in Table 3.6. The measures (small-large, high-low etc.) should be regarded as characterizations relative to the other type of system. As is obvious from the table, a number of dimensions and aspects of the financial systems have been left out.

TABLE 3.9 FINANCIAL SYSTEMS AND CAPITAL STRUCTURE

<u>General characteristics of financial markets and financial institutions</u>	<u>Type of financial system</u>	
	<u>Bank-oriented</u>	<u>Market-oriented</u>
Level of development of financial markets (i.e., the opportunities for diversification)	Low	High
Ratio of financial assets held by banks to total assets held by financial institutions	Large	Small
<u>Overall capital structure</u>		
Degree of internal finance	Low	High
Debt/equity ratios	High	Low
<u>Creditor structure</u>		
Ratio of bank credits to total liabilities	High	Low
Importance of bond financing	Low	High (not in the UK)
Degree of concentration	High	Low
Turn-over of loans	Low	High
<u>Shareholder structure</u>		
Degree of concentration	High	Low
Commercial bank shareholdings	Significant	Insignificant
Interfirm shareholdings	Wide-spread	Less common
Turn-over of controlling blocs	Slow	Faster

4. BANK-ORIENTED AND MARKET-ORIENTED FINANCIAL SYSTEMS - AN INCOMPLETE CONTRACTING INTERPRETATION

In this section we use the incomplete contracting literature to interpret the observed differences in capital structure. We will concentrate on six stylized facts that emerge when bank-oriented financial systems are compared to their market-oriented counterparts: (1) debt/equity ratios are higher; (2) ownership of debt is more concentrated and more homogeneous; (3) shareholdings are also less dispersed; (4) commercial banks often have large shareholdings in individual firms; (5) ownership of debt and equity is relatively more stable over time; and (6) corporate takeovers are less common.

The differences in capital structure in the six countries covered by this study are larger when it comes to the design and distribution of debt instruments than equity. Much of the previous economics literature on capital structure and control has viewed debt as a non-voting instrument and as such not relevant to the analysis of control. The incomplete contracting approach, however, recognizes that residual control rights are to be transferred to creditors when the firm is in financial distress. This view of debt as also conferring rights of control is important for our understanding of international differences in capital structure.

While recognizing that the stylized facts outlined above can only be fully understood in a much broader historical context, we want to concentrate on the effects of government regulation of investors. More specifically, we focus on the combined effects of three sets of rules pertaining to commercial banks in market-oriented financial systems: those limiting the size of individual institutions, those constraining their portfolio choices, and those preventing them from intervening when client firms are in financial difficulties. In all these respects, bank-oriented financial systems are less regulated.

These restrictions help explain perhaps the most significant difference between the two types of financial systems: the role of commercial banks in the corporate sector. In practise, the countries with market-oriented systems through regulation have eliminated one type of investor, i e, a creditor capable of holding considerable shares of both debt and equity in the same firm. The regulations of commercial banks directly affect concentration of the creditor structure. The limits on the size of individual institutions increase the costs of control. Furthermore, the restrictions on bank shareholdings limit commercial banks' opportunities to diversify their portfolios.

The existence of large commercial banks in the bank-oriented financial systems are important in explaining the higher gearing in the corporate sector. The incomplete contracting literature

suggests that the higher debt/equity ratios in the bank-oriented financial systems indicate that control is shifted from shareholders "earlier", i e, creditors have control over a wider set of states of nature. In other words, financial distress or insolvency is a much more common phenomenon in these countries. As we saw in Section 2, distress can be actively used by the contracting parties to reorganize problem firms. The initial contract implies that parties agree ex ante to let creditors, more specifically main banks, act as reorganization specialists. In market-oriented systems, this role is normally played by an external group of shareholders. Thus, the higher debt/equity ratios in bank-oriented financial systems could be related to the observation that takeovers are not as common as in countries with market-oriented financial systems.

The commercial bank of the bank-oriented type, as marginal lender and main risk-bearer when the firm is in financial distress, has been willing to accept these higher debt levels because it can exercise control much more freely than its counterpart in the market-oriented systems. In Williamson's (1987) terms, the less restrictive regulations in bank-oriented financial systems reduce the costs of debt as an ex post governance mechanism.

The higher debt/equity ratios imply that creditors are carrying larger shares of firm-specific risk in bank-oriented financial systems. Data also suggests that this increased risk exposure to

a large extent is absorbed by commercial banks. Because of its higher risk content, bank debt in these countries is sometimes referred to as "crypto equity" (Hart, 1987). The incomplete contracting approach allows us to characterize the nature of bank control and risk-bearing more precisely. Commercial banks carry risk and has full control in a wider set of "bad" states. To the extent that they have large shareholdings in the same firm, they also share risk and control in "good" states.

The heavier reliance on debt in bank-oriented financial systems has made it possible for firms to grow without diffusing control in "good" states to the same extent as in countries with market-oriented systems. The incomplete contracting approach suggests that parties have preferred to give up control in a wider range of states to maintain a more concentrated ownership of equity. Again, the stylized facts seem to be strongly interconnected, i.e., the levels of debt are related to the structure of equity.

The domination of commercial banks in corporate finance is likely to have hampered the development of markets for debt instruments in the bank-oriented financial systems. On the one hand, this has resulted in less opportunities for investors to diversify their portfolios. On the other hand, the more homogeneous creditor structure has kept the collective choice costs associated with creditor reorganization at a lower level, making this transfer mechanism more attractive relative to takeovers.

The relative underdevelopment of capital markets in bank-oriented financial systems makes control less expensive for investors. The risk costs of holding a control block is determined by the size of individual portfolios and opportunity costs of foregone diversification. In a more shallow market the investor has less opportunities to diversify his holdings. Consequently, his costs, of holding control, *ceteris paribus*, are lower¹⁵. This reenforces the effects of the less rigid regulatory constraints on the size of individual institutions. The greater reliance on creditor reorganization is conducive to a more stable ownership structure. Control blocks are transacted less frequently and bank customer relationships are relatively stable over time.

The widespread holdings of control blocks by banks may be interpreted in several ways broadly consistent with the the incomplete contracting approach. Large shareholdings allow banks to influence the likelihood of takeovers by outside owners also when control has not been transferred to creditors. An alternative, but not necessarily contradictory, interpretation views bank-held control blocks as arrangements to reduce conflicts between shareholders and creditors when firms are in financial

¹⁵. Aoki (1989) argues that the less developed markets of the bank-oriented systems, in his analysis Japan, increase risk costs for investors and labor. In his view, the Japanese corporate grouping should be seen as a risk-sharing device rather than as an institutional arrangement to protect existing management and creditors against hostile takeovers and reduce collective choice costs.

distress and to ensure the transfer of control to creditors. According to this latter explanation, the appropriate contractual arrangement for a reorganization specialist contains both debt and equity instruments. The arrangement entails almost full control and risk-bearing in financial distress and shared control and risk in "good" states.

The claim is here that the observed differences between financial systems have important implications for how conflicts between shareholders and creditors are mitigated and resolved. We have suggested that conflicts arising from poor performance are handled internally through an earlier transfer of control to creditors in bank-oriented systems. In countries with market-oriented systems, an intervention by an external party, a takeover, is more likely. We suggest that there is a higher reliance on external solutions in the latter type of systems also when there are conflicts between creditors once firms are in financial distress. The diffused creditor structure, often in combination with strict restrictions on creditor involvement in individual firms, makes more informal procedures difficult to administer. In bank-oriented systems, the dominating commercial bank normally assumes control in these situations through its large share of claims. The higher degree of repetition in contractual relations should increase the likelihood of successful informal procedures.

5. TWO MODELS OF FINANCIAL SYSTEMS

The six financial systems in this study have maintained their fundamental characteristics from World War II well into the 1980's. The two types - bank-oriented and market-oriented systems - have undoubtedly demonstrated survival properties. We cannot rule out that they do indeed represent two model "equilibria" with different and interconnected structural characteristics. Even if this is true empirically, it is not easy to substantiate based on existing economic theory. This section discusses the two systems as two fundamentally different solutions to the problem of allocating control and risk.

In the market-oriented system the emphasis is on specialization of management and risk-bearing through diversification of risk among shareholders and creditors. To deal with the collective choice problems arising as a firm's securities become widely held, control is delegated to management. External control mechanisms, such as markets for corporate control and managerial labor markets, are assumed to reduce the agency costs associated with the separation of ownership and control. The bank-oriented system, on the other hand, stresses risk-shifting from shareholders to creditors in intermediate states. The emphasis is on reducing collective choice costs and providing investors with adequate incentives to monitor firms and engage in entrepreneurial activities. In evaluating the properties of the two systems, the costs of delegating strategic decisions from shareholders to

managers and the potential underproduction of monitoring services due to free-riding among investors should be compared to the gains from risk-spreading.

Many previous international comparisons have emphasized that financial systems differ markedly in how they handle problem firms (Rybczinski, 1985; and Zysman, 1983). Our analysis supports this observation. In the bank-oriented system, creditor reorganization dominate, while takeover by an external group of shareholders is the predominant mechanism in market-oriented financial systems. The relative merits of these two mechanisms are difficult to establish since their effectiveness is conditioned on the institutional constraints under which they operate.

Creditor reorganization, however, is likely to reinforce reputation effects in contractual relations since it relies on internal conflict resolution. The less developed markets for financial instruments in bank-oriented financial systems reduce incentives for investors to leave established relationships. These lock-in effects should also facilitate internal conflict resolution. In market-oriented financial systems these relationships are more flexible and change over time. The more frequent emergence of new combinations might be more conducive to innovation, while it is likely to promote shortsightedness in the strategic interaction between investors.

In addition, there seem to be a difference between investors in bank-oriented and market-oriented systems in terms of their relative propensity for exit and voice behaviour (Hirschman, 1970). When an organization is in decline, its members can either decide to leave (exit) or to try to improve it (voice). The mentioned lock-in effects in bank-oriented systems induce voice behaviour by making exit more costly. Again, the relative effectiveness of the two systems is likely to depend on characteristics of the individual firm - in which phase of the life cycle it is and which activities it is involved in (for an application of Hirschman's approach to shareholders see Hedlund et al (1985)).

We have seen that incumbent management or owners are unlikely to give up control without resistance. For this reason, it is important to evaluate the two systems and their chief reorganization mechanisms in terms of how they ensure that a transfer of control really takes place. To trigger a transfer of control when widely-held firms are in financial distress, appear to much more difficult in the market-oriented systems. The creditors often have to rely on the expensive court-administered bankruptcy solution. In a bank-oriented system, the commercial banks normally initiate an informal, less costly reorganization procedure. This latter type of system also appear better equipped to handle the incentive distortions that arise as the firm approaches financial distress. However, market-oriented systems

seem to be relatively superior when a transfer from one group of shareholders to another is called for. A number of results indicate that take-overs are less likely to succeed when the ownership of equity is concentrated (Stulz, 1988; and Harris & Raviv, 1988).

The more diffused and less stable ownership structure in the market-oriented make investors more anonymous. The relative anonymity of shareholders and creditors in these systems should have implications for the relative role of management. Furthermore, it is likely to make it more difficult to hold investors accountable for firm decisions. In the bank-oriented system where the separation of ownership from control has not gone as far, ownership contracts are less standardized, i e, shareholders are expected to actively intervene in the strategic decisions of the firm.

Even though the financial systems of the countries in this study have maintained their principal features over most of the post-WW II period, we observe tendencies towards convergence along some important dimensions during the last decade. For example, longitudinal studies in United States indicate that debt/equity ratios have been increasing in recent years. In particular, leveraged buyouts have many of the features associated with firms in bank-oriented financial systems, e g, high gearing and strip financing (combined debt and equity holdings). Venture capita-

lists also share some characteristics of main banks in these systems. Control is shared in good states, while it is transferred to creditors when the firm's performance deteriorates.

The capital markets in most of the bank-oriented systems, on the other hand, have developed rapidly in recent years. A range of new instruments have been introduced and rules stifling foreign competition in capital markets liberalized. All this have contributed to the convergence of the two financial systems.

We have suggested earlier that the market-oriented system is an outcome of government regulation. This less than intuitive and, at least at first glance, implausible proposition warrants two remarks. First, we do not want to suggest overemphasizing a strong, causal correlation between the observed patterns of capital structure and government regulation. It is possible that legislation developed in response to existing institutional arrangements. In any case, the laws constraining commercial banks in market-oriented systems have certainly reenforced these arrangements. Secondly, there certainly has been other, and more direct, forms of government intervention in the design of the bank-oriented financial systems. Here we have only discussed the effects of regulations of commercial banks.

If government regulation does affect capital structure in the way we have suggested, the current liberalization of capital markets on the European continent and in Japan might have a number of

less than immediately intuitive consequences for the financial systems involved. First, the degree of market orientation, on the whole, is likely to increase due to the strength of the underlying technological changes in the financial markets. However, if the regulation of commercial banks are relaxed, we could expect an increase in bank holdings of control blocks in non-financial corporations. Furthermore, leverage ratios are likely to rise. We might also see an increase rather than a decrease in the concentration of debt and equity ownership. The predicted surge in takeover activity could well be accompanied by increased bank participation in the reorganization of troubled firms.

There could also be important transitional problems in going from one type of system to another. We emphasized earlier how the market-oriented financial systems have to rely on a number of external control mechanisms. As the bank-oriented financial systems become increasingly market-oriented, there is a risk that they will be "stuck in the middle" or at least that the change process will be costly. These external control mechanisms need time to develop. In the meantime, there is considerable scope for managerial excess in the transition period. Similarly, if market-oriented systems move in the direction of bank-orientation, creditors capable of reorganizing firms do not emerge overnight.

6. SUMMARY

This paper set out to identify differences in capital structure between countries and relate these differences to properties of the financial systems. Furthermore, we wanted to suggest some interpretations based on the incomplete contracting literature. In particular, we were interested in how the different dimensions of capital structure are interconnected.

The statistical overview of the six countries showed considerable variations in capital structure. The ratio of debt to equity, the concentration of debt and equity, and the turnover of holdings were all found to be markedly different. These differences are clearly related to the role of commercial banks in the corporate sector of the economy. Two fundamentally different financial systems were identified - bank-oriented and market-oriented financial systems. Countries with the former type of system generally have higher debt/equity ratios, higher shares of bank credits in their liabilities, more concentrated holdings of both debt and equity, and a lower turnover of these holdings.

The incomplete contracting literature submits that these differences in capital structure could be interpreted as reflecting differences in the allocation of risk and control across investors and states of nature. In the bank-oriented financial systems the creditors carry risk and have control in a wider range of future states. In many cases, commercial banks hold controlling blocks of shares in addition to large debt claims, i e, they bear

risk and have some control across all states of nature. The theoretical analysis suggested that such joint combined holdings could alleviate conflicts inherent in equity and debt contracts. This could be particularly important when the firm is in need of reorganization.

The bank-oriented financial systems have more stable ownership of debt and equity. Investors are locked into contractual arrangements over long periods of time. Consequently, they are more prone to internal conflict resolution. While these long-term relationships foster continuity and reputational enforcement of contracts, they could discourage innovation.

Finally, we suggested that government regulation of commercial banks could be important in explaining the observed differences in capital structure. Where banks are allowed to hold shares and intervene in trouble firms, they are also willing to extend more credit. This claim could lead to some less than immediately intuitive consequences as the liberalization of the capital markets in Europe and Japan proceeds. To the extent that the regulation of commercial banks are relaxed as a result, we might see a surge in commercial bank shareholdings, higher leverage ratios in the corporate sector and more concentrated holdings of debt and equity.

TABLE 3.4 OWNERSHIP CONCENTRATION IN INDIVIDUAL FIRMS
(the largest owner's share of capital)

Largest Owner's Share	France (1)	United States (2)	(3)	Japan (4)	(5)	United Kingdom (6)	Sweden (7)	F R G (8)	(9)
>50	55		9	17	5	2	42	66	59
30-50		5		11			31	23	
25-30			29			9			
20-25	42			31	70		12		41
15-20		1				5			
10-15		6	10				11	12	
5-10		15	29	16		32			
>5	2	73	23	25	25	52	4		

(1) Morin, 1982. Covers the 500 largest non-financial firms (parent companies) by turnover in 1976. The large public utilities are not included.

(2) Herman, 1981. Shows distribution according to size of all holdings over 2 per cent in the 200 largest manufacturing corporations by turnover at the end of 1974.

(3) Isaksson & Skog, 1986. The computations are based on data from the Securities and Exchange Commission from 1980 covering the 500 largest firms by employment according to Fortune magazine.

(4) Miyazaki, 1972. Covers the 466 largest firms by turnover in 1966. Groupholdings merged.

(5) Mito, 1983. Referred to in Gerlach, 1986. Includes the 200 largest firms by turnover in 1976. Groupholdings merged.

(6) Collett & Yarrow, 1976. Refers to 85 large firms within machine-building, electronics, food stuffs and textile industry.

(7) Isaksson & Skog, 1987. Includes 107 public companies in 1985. Based on voting power.

(8) Iber, 1985. Includes all firms listed on the German stock exchanges in 1983.

(9) Monopolkommission, 1986. The 100 nonfinancial largest firms by turnover in 1984.

TABLE 3.5 OWNERSHIP OF LISTED STOCKS ACCORDING TO SECTORS
(1980 unless indicated otherwise)

	House- holds cial corp.	Non- finan- insti- tutions	Govern- ment	Finan- cial	Foreign owners
F R Germany a)	17	51	10	15	8
France b)	38	22	0	24	16
Japan c)	27	25	0	42	5
Sweden d)	33 e)	7	0	56	4
United Kingdom f)	28	5	3	60	4
United States g)	51	15	0	28	6

Notes: a) 1983. Includes all public companies with capital over DEM 4.75. The share of non-financial corporations is exaggerated due to double-counting in the statistics.
b) All listed stocks
c) Stocks listed on the Tokyo Stock Exchange 1979.
d) Stocks listed on the Stockholm Stock Exchange 1981.
e) Includes mutual funds (aktiesparfonder)
f) Stocks listed on the London Stock Exchange
g) All stocks listed on US stock exchanges

Sources: F R Germany: Iber, Bernhard, 1985, "Zur Entwicklung der Aktionärsstruktur in der Bundesrepublik Deutschland (1963-1983)," Zeitschrift für Betriebswirtschaft, 55

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