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Reinhard H. Schmidt / Marcel Tyrell

Information Theory and the Role of Intermediaries in Corporate Governance

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Reinhard H. Schmidt and Marcel Tyrell[†]

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[†] Reinhard H. Schmidt is Wilhelm Merton Professor of International Banking and Finance at the Johann Wolfgang Goethe-University in Frankfurt. Marcel Tyrell is a lecturer at the Goethe University as well as at the University of Trier. Correspondence should be addressed to Reinhard H. Schmidt, Mertonstr. 17, in D-60325 Frankfurt/Main, Germany; Tel.: 0049-69-798-28269; Fax: 0049-69-798-28272, e-mail: rschmidt@wiwi.uni-frankfurt.de. The authors are grateful for advice and support to Marco Weiss.

Abstract

We investigate the connection between corporate governance system configurations and the role of intermediaries in the respective systems from a informational perspective. Building on the economics of information we show that it is meaningful to distinguish between internalisation and externalisation as two fundamentally different ways of dealing with information in corporate governance systems. This lays the groundwork for a description of two types of corporate governance systems, i.e. insider control system and outsider control system, in which we focus on the distinctive role of intermediaries in the production and use of information. It will be argued that internalisation is the prevailing mode of information processing in insider control system while externalisation dominates in outsider control system. We also discuss shortly the interrelations between the prevailing corporate governance system and types of activities or industry structures supported.

Keywords: Economics of information, corporate governance, financial systems, complementarity

JEL Classification: D23, D82, D83, G34, L21, P51

Information Theory and the Role of Intermediaries

Reinhard H. Schmidt

Marcel Tyrell[*]

Goethe-University, Frankfurt

October 30, 2004

[*] Reinhard H. Schmidt is Wilhelm Merton Professor of International Banking and Finance at the Johann Wolfgang Goethe-University in Frankfurt. Marcel Tyrell is a lecturer at the Goethe University as well as at the University of Trier. Correspondence should be addressed to Reinhard H. Schmidt, Mertonstr.17, in D-60325 Frankfurt/Main, Germany; Tel.: 0049-69-798-28269; Fax: 0049-69-798-28272, e-mail: rschmidt@wiwi.uni-frankfurt.de. The authors are grateful for advice and support to Marco Weiss.

1. The problem and its context

The topic of corporate governance has received a great deal of attention in recent years and has become a focus of political debate and economic and legal research. However, in much of the Anglo-Saxon literature, which dominates the political and academic debate to date, it is still regarded in largely the same way as in the writing of *Adam Smith* more than 200 years ago.

In their seminal book from 1932, *Berle/Means* have seen corporate governance problems similarly, and still today most American scholars, especially those with an economic background and perspective, regard corporate governance as concerning how the providers of capital, and often only the investors in corporate equity, can assure themselves of getting their money back and earning a return which is commensurate with the risks which they bear, as *Shleifer/Vishny* state in the opening sentence of their well-known survey article[1]. Since what providers of capital, especially those of corporate equity, can expect to get back in the future depends on the decisions taken by management, their interest in corporate governance is evident - and certainly also legitimate.

From a perspective which focuses only on investors, it may be easy to appreciate the possible role of investment and pension funds in the governance of those corporations in whose shares they invest. However, it is less evident, why banks should also have a governance role. Nevertheless, in view of the reality of corporate governance in Europe and many other parts of the world one could hardly do justice to our topic if one were to exclude banks from the discussion. It is a fact of life that banks and investment and pension funds play a role in corporate governance, irrespective of whether they are aware of this role and whether they like it or not. This consideration suggests that it might not be appropriate to take the narrow "shareholders-only" view of corporate governance as the starting point. Indeed, there are other views of what constitutes "the corporate governance problem". A broader view, which is prevalent in Europe, holds that corporate governance encompasses the totality of institutional and organisational mechanisms which influence how (important) decisions in (large) companies are made.

For playing their respective roles, those who are in some way involved in corporate governance need to acquire, transmit and use information. Therefore, the task which we have been assigned by the organisers of this conference consists in discussing the specific informational

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1 See Shleifer/Vishny (1997).

aspects of corporate governance especially in connection with the possible roles of intermediaries.

The issue of the acquisition, transfer and use of information for corporate governance purposes is difficult because information is a good with unconventional attributes. Moreover, as we will discuss in this paper, there are different ways in which information is acquired and used in different corporate governance systems.

The second specific aspect of our topic is that of intermediaries. We will largely concentrate our discussion on financial intermediaries and mention other intermediaries only in passing. In the case of investment and pension funds one can expect them or their managers to act on behalf of, or as agents for, the investors in these funds. The issue here is a "simple" agency relationship, which suggests to ask questions like these: Do they really act in the interests of their investors/shareholders when they play a governance role or do they use these roles to pursue their own objectives which may in some respects differ from those of their principals? Which governance roles do they have and which roles do they indeed play? And finally: What does this agency relation imply for the issue of information acquisition and use?

Banks are intermediaries which in many countries, especially in Continental Europe, play an even greater role in the governance of corporations than investment and pension funds. The case of banks is more difficult than that of funds since the main role of banks is that of lenders. If the governance role of banks can at all be fruitfully regarded as that of an agent, one should be careful to ask whose agents banks are when they play a governance role.

What does this suggest for the definition of our topic and the context in which it needs to be discussed? If one includes banks into the discussion, it seems almost natural to go one step further and also include other stakeholders as having a role – or at least as being relevant - in the context of corporate governance. In this broadened context, the topic of corporate governance turns out to be about more than merely aligning management behaviour with shareholder interests. It also includes to ask who and what shapes the objective function of a corporation which is supposed to provide guidance for management. Depending on the answer, also the conventional topic of corporate governance as an agency problem of monitoring management might require to be redefined as monitoring that management does what it is supposed to do if it is to act in the interest of more stakeholders than merely the shareholders, and this has implications for the issue of information acquisition and use.

There is one more aspect which makes our topic complex and which is largely disregarded in the recent economic and agency-theoretic literature, although it is a part of corporate

governance which practitioners, including managers, and also lawyers have certainly always understood: Corporate governance also has the function of monitoring and improving the quality of management decisions irrespective of all conflicts of interest. Evidently, for this advisory and quality-control function of a governance system, information is also extremely important. This is why we cannot disregard this function in dealing with our topic.

Thus, this paper has to address (1) information as an economic good with specific characteristics, (2) intermediaries, including banks which are essentially lenders, as part of certain corporate governance systems, (3) the different types and conceptions of what corporate governance is all about, and (4) the different functions of the various institutions which are elements of a corporate governance system. As we will see, these issues are closely related, but distinguishing corporate governance systems according to the conventional dichotomy of insider- and outsider-controlled corporate governance system will turn out to be a useful way of coping with the complexity of the topic. As a caveat, we already at this point want to notify that in accordance with the task assigned to us, our discussion will be highly stylized and theoretically driven. That should help to understand just some aspects of the "reality" of different corporate governance systems.

The paper is structured as follows. In section 2, we discuss some aspects of the economics of information to lay the groundwork for what follows later. We show why the specific features of information as an economic good can lead to incentive problems in the production and use of information and to market failure in a market for information in general. We then distinguish between internalisation and externalisation as two fundamentally different ways of dealing with information in economic systems and thereby introduce a distinction which resurfaces again when we discuss corporate governance systems and the way they use information in section 3. Subsection 3a contains the presentation of the two types of corporate governance systems, including the roles of information in these systems in general, while section 3b extends the discussion to include the specific problems of intermediaries. Section 4 concludes by summarising our argument, discussing shortly the issue of the inter-relations between the prevailing corporate governance system and types of activities or industry structures supported in the respective countries, and offering some open questions concerning the possibility to combine the two types of corporate governance systems and the two ways of dealing with information.

2. Elements of the economics of information

a) Information as a good and the difficulties of providing and transmitting information

A large fraction of economic activity in any advanced economy is dedicated to the production, transmission and dissemination of information. The financial sector provides the most striking example since a considerable part of its activity consists in handling information. Given the importance of information in general as well as that of the financial sector, it does not come as a surprise that economic theory has made information one of its main topics since many years.

What is the notion of information among economists; can information be regarded as a good, and if so what are the specific characteristics of this good? The standard notion of information is that it is knowledge about facts as well as about regularities and relationships between classes of facts, and most often such knowledge has relevance for decision making and valuation, it is decision- and value-relevant knowledge. Economic agents typically decide and act under uncertainty. Information can reduce uncertainty and lead to better decisions and economic outcomes.[2] This is why information tends to be valuable. In a decision making context which only takes into account the decisions of an individual agent, i.e. single person decision problems, information always has a positive value.[3] However, in a market context in which the consequences of individual agents' decisions on the resulting prices are considered, the value of information can also be negative under certain circumstances, as we will argue in more detail below.

As a good, information differs from normal goods in several respects. One of these is that information is rarely consumed and valued as such but rather used as an input into decisions about other real or financial goods (or assets). Therefore information cannot be evaluated independently of these other decisions. This leads to indivisibilities, as *Arrow* has already shown in 1962. A related finding is due to *Radner*/*Stiglitz (1984)* who have demonstrated that there are economies of scale in production of information; that is, the value of information increases more than proportionally if the effort to produce information is increased. Indivisibilities and increasing returns to scale are standard reasons why a market for the good under consideration may not be competitive or why some form of market failure can be expected to materialize.

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2 Strictly speaking, in modern economic theory information can broadly be defined as any device that helps to reduce uncertainty. In this context, uncertainty means that the economy can be in one of several possible states of the world. Information is then any device that helps one either to detect the current state of the world or to forecast the future state of the world. See Laffont (1989) and Brunnermeier (2001) for surveys of this literature.

3 This is the famous theorem of Blackwell (1953).

Even more importantly, information exhibits features of a public good.[4] Public goods have two characteristics: Non-rivalry in consumption or use, and non-excludability. Non-rivalry means that the use of a given good by one agent does not reduce the possibility of others to use this good too. Non-rivalry does not only apply to the use of information but also to its transmission. Passing on information to others does not eliminate the information for the party which has transmitted the information. The possible, and even likely effect that the economic benefit from using the information, which has been passed on to others, declines is a secondary effect which does not contradict the assessment that information is a good with a non-rivalrous feature.

Non-excludability refers to the effect that there may be technical (or economic) problems of preventing others from using a certain piece of information. In the case of information, non-excludability results from the possibility of others to observe a certain behaviour - or economic effects which are caused by this behaviour - of someone who is assumed to have certain information, and to deduce the content of the information from the observed behaviour or its consequences. Especially in large anonymous markets, there is the definite possibility that the observable behaviour of market participants and even market prices "reflect" the information which some market participants may possess.

Individually and even more so in combination the two features of non-rivalry and non-excludability have an important effect: An agent who generates or buys information cannot expect to appropriate the full economic value of the information. As a consequence, the incentives to produce or buy information are weaker than would be socially optimal.

There is thus a problem of under-investment in information production.[5] However, also the converse can occur. In a series of influential papers, *Hirshleifer (1971, 1973)* has shown that there may be excessive incentives to generate information and thus an over-investment. The examples for this effect discussed by *Hirshleifer* refer to information about facts which will become publicly known in the near future or in other words to uncertainty which is about to be resolved soon anyway. In this case trading of assets based on unevenly distributed information is a zero-sum game without social value. If one adds risk aversion, the social value of trading even becomes negative. However, the possibility of a negative social value of privately valuable information production is not confined to a pure exchange economy. Even in an economy with production, in which information can be "productive" by improving

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4 See also Stiglitz (1994) for a similar characterisation.

5 See Grossman/Stiglitz (1976, 1980) as the standard reference and Hellwig (1982) for an insightful early summary.

production decisions, the "premature" generation of information can still be socially undesirable since it may preclude options to share risk.[6]

There is thus by now a long list of settings in which the public or social value of information and the private value of information differ, giving rise to inefficiencies of a market-based determination of the optimal level of information.

In addition to indivisibilities, increasing returns to scale and the divergence of social and private value of information, there is one more problem which can stand in the way of a functioning market for information: It is the problem of reliability. How can it be assured that someone who claims to have valuable information which she would like to sell, really has this information and that it really is valuable? As it seems, one possibility would be to require that the seller reveals the information for inspection before the sale. However, if this happens the potential buyer already has the information and he would be inclined to argue that the information as he has seen it, is not valuable for him, in order to avoid to pay for the information which he then already has obtained.

Irrespective of this problem of inspecting information before an eventual sale, a buyer of information also has to worry that information is not trustworthy. Even an ex post assessment of the value of information may be extremely difficult since the recipient of information tends to aggregate many different pieces of information before making a decision based on the information. Thus the marginal content of a given piece of information may be impossible to determine. In general, the credibility of information in the sense of its verifiability ex post depends on the nature of the information: Is it hard information which can at least in retrospect be determined to be true or not, or soft information which when received is in some informal way integrated into the set of beliefs and expectations of the recipient?[7] Note that a great deal of economically relevant information is not about facts which are already given, but about the future. It is therefore almost always probabilistic information expressed in the form of subjective probabilities. As such it is soft information.

Reputational mechanisms may help to alleviate problems of market transactions for information. However, especially in large anonymous markets with many market participants the likelihood of ever running into the same trading partner again may be low. Thus it may be difficult to make a credible commitment underpinned by one's own reputation.

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6 See Dow/Rahi (2002) and Allen (2004).

7 See Stein (2002) for this distinction.

The problems of information as a good which may be generated under market-induced financial incentives and traded and transmitted in markets are serious and general in nature. However, they are particularly acute and particularly relevant in the financial sector for which information has such an enormous importance. Even this short account of some key results of the economics of information may be sufficient to demonstrate that the idea of a well functioning market for information is not at all plausible. In other words, it is a problem how the production, distribution and use of information is used in any financial system.

b. Two types of information processing: Internalisation and externalisation

In spite of the problems which we have described, the production, distribution and use of information must be organized somehow, even if this does not amount to a perfect solution of the relevant problems. There are essentially two approaches or types of solutions to these problems, which differ in a fundamental way. We characterize these two approaches in general terms in this section and discuss them again and in more depth with special reference to financial and corporate governance systems in later sections.

An efficient and effective way of dealing with information problems in such a way that a great deal of information is generated and used is extremely important for any economic system. As early as 1945 *Hayek* had pointed out that one standard for assessing an economic system is the extent to which it can use a great deal of information for the decision of how to allocate scarce resources. As is well known, *Hayek's* innovative idea had been that the price mechanism should be conceived as a mechanism to generate, aggregate and transmit information. If what *Hayek* has assumed to be the normal case in a competitive market economy, really does take place, that is if information used in economic decisions is integrated into prices and transmitted via prices and from there on again used for decision making, we have a case of information externalisation. The most prominent example is the externalisation of information through stock prices in an informationally efficient capital market in the sense of *Fama*.[8]

Externalisation of information via the price mechanism is facilitated by disclosure to the general public, and it supports the direct effects of disclosure. This is why one typically finds both disclosure and information revelation through well functioning markets side by side.

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[8] See Grossman/Stiglitz (1980, p.404) where, referring to Hayek and Fama, they discuss the logical impossibility of informationally efficient markets in the sense of prices fully reflecting all available information at any time.

The distribution of information is of general importance for a market economy. But it is particularly important in the context of financial relationships since these relationships span different time periods and thereby offer the opportunity of one or both sides to a financial transaction to undertake actions which hurt the interest of the other side. The problems of *adverse selection* and *moral hazard* are particularly severe in financial relationships. However, since this is known to both sides of a potential transaction, both would suffer if no way were found to curb opportunistic behaviour, and therefore both will be interested in improving disclosure and information revelation through prices. In later section of this paper, we will discuss how this can be implemented.

We now turn to the other approach to solve or at least mitigate information problems and information-based problems of cooperation and coordination. The other approach rests on creating and maintaining proximity: proximity generates information, and it increases credibility if there is the need to transmit or exchange information since there are possibilities to sanction opportunistic behaviour which would consist in transmitting irrelevant or wrong information. Proximity allows to build up trust, and trust is a "good" whose value can best be preserved by acting in a trustworthy manner.

Creating, transmitting and using information within a close relationship or a network of relationship constitutes what one can call "internalisation of information". The term reflects that the information remains internal to a closely limited circle of recipients and users and that it is also not at all - or only to a limited extent - made public by being reflected in relevant prices. Also the problems resulting from the public good character of information are less acute if the information is kept within a close relationship or more precisely, within a network of several long lasting relationships. However, the internalisation of information has one important drawback. Its ability to aggregate different and diverse pieces of information is rather limited. Thus a characteristic strength which *Hayek* had rightly claimed for a market economy is largely suppressed if information internalisation through close and lasting relationships is used extensively in an economy. As we will see in what follows, there are advantages and disadvantages to the modes of information externalisation and information internalisation which are reflected in the relative strengths of two types of financial systems and corporate governance systems.

3. The use of information and the difference between corporate governance systems

a. Information processing in the insider and the outsider systems

aa) Information and corporate governance system design

The way in which information is generated, transmitted and used is the most important determinant of how a corporate governance system functions. However, there is not one single way but rather two ways, as there are two fundamentally different types of corporate governance systems which are well known and largely understood and which seem to function more or less equally well.[9] *Franks/Mayer (1994)* have called them the insider control system and the outsider control system. The terminology reflects the way in which information is generated, transmitted and used or, in other words, the nature of information which makes the two types of financial or corporate governance systems function.

The nature of information is not the only aspect in which the two systems differ and which may have inspired the terminological distinction. The other aspects or features with respect to which insider and outsider systems differ include the very definition of "the problem of corporate governance"; the objective function of the corporation and its management; the set of persons and institutions which have any role and especially an active role in governance; the closeness of the relationship between those with a role in corporate governance and the corporation itself; and the relative importance of internal mechanisms such as boards and of markets. Together with the nature of governance-relevant information, these other features form a system of complementary elements which is consistent both in the insider and the outsider system, but differs in a fundamental way between these systems.[10] In other words, the other differences between the two systems "reflect" differences in the nature of the corporate governance-relevant information in the sense that they are at the same time cause and consequence of the informational features.

ab) The insider control system

We now first characterise the insider control system. We do this in general terms, but use the case of German corporate governance for illustrations. An insider control system is one in which the information which is used to control and support management is inside information; it is generated internally, and it is kept, transmitted and used internally, for instance and most importantly in a board and its deliberations and decisions. Some of the information used by

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9 See the assessments e.g. in Blair (1995) and Shleifer/Vishny (1997) as well as descriptive accounts such as Charkham (1994).

10 For an exposition of the concept of complementarity and its application to financial systems and corporate governance, see Hackethal/Schmidt (2000).

those active in corporate governance typically stems from close relationships to the respective corporation, which implies that it can include soft and confidential information and can be detailed. At least at the stage of its generation, the information is unevenly distributed among the active participants, and it is used in a way which does not have the consequence that it is revealed to a broader public through disclosure or the observability of decisions and their consequences. Thus, the internal information remains largely internal, which is one reason why the incentives to contribute private information to the governance process are not mitigated as would be the case if information were made public through some process.

What is corporate governance in an insider control system? To answer this question, one should be aware of the fact that most insider control systems for large corporations go hand in hand with stakeholder orientation.[11] Stakeholder orientation means that de facto or even by law – as in the German case[12] – both the supervisory board and the management board have a strong commitment to the "interest of the enterprise" which can be interpreted as meaning the interests of various stakeholder groups, among which shareholders are, however, the most important group.

In such a system, a central issue of corporate governance is to assure that the corporation is run in such a way that the interests of various stakeholder groups are taken into account to an "acceptable" extent, that is, to such an extent that they all find it attractive to cooperate and to contribute their respective resources to the corporation – or to put it at stake - and that the economic survival, stability and growth of the corporation is highly likely.[13] This balancing out of divergent interests is a task which typically falls on both the supervisory and the management board in a German *Aktiengesellschaft*. Moreover, corporate governance is about monitoring the management and supporting it in its decision making. Note that the task of monitoring the management in terms of its adherence to the "objectives of the firm" is particularly difficult since it is anything but clear what the main objective is to which management should adhere in a stakeholder-oriented insider control system.

The central and characteristic institution and mechanisms in insider control systems is a board which oversees the decisions taken by the management. The formal legal governance system of (large publicly held and exchange listed and traded and co-determined) German joint stock corporations comes to mind as an example. The fundamental stakeholder orientation of

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11 Closely held family owned firms also have an insider control system of governance but rarely are stakeholder-oriented.

12 See Rieckers/Spindler (2004) and Schmidt (2004) for details.

13 See Schmidt/Weiss (2003) for an extended analysis of this concept.

German corporate governance is most clearly reflected in the composition of the supervisory board and the definition of its role in comparison to that of top management (the management board). The (supervisory) board in an insider control system is composed of members most of whom are in a sense quite close to the corporation. They may be – or may represent – blockholders such as owner-founder families, other large corporations or financial institutions which have been blockholders for a long time; or they represent banks or other important lenders, or company staff especially of higher ranks and core employees. Because of their specific ties to the company many board members can be expected to have information which is not publicly available and which they can use in fulfilling their governance functions. Note that the representatives of "genuine shareholders" without close ties and specific information, who would only have an interest in dividends and share price appreciation hardly play a role in German supervisory boards. If present at all, they are clearly in a minority position.

In a way one can consider the various stakeholder groups which jointly determine the policy of a supervisory board as a coalition. The members of this coalition have common as well as divergent interests. The divergent interests result from the affiliation with different constituencies which the board members represent. The common interest is based on the fact that most of the members of this coalition are not so much concerned with the financial benefits for "genuine shareholders" but in the stability and growth of the company. This holds evidently for board members with a special allegiance to lenders, to general staff and to management, but also largely for those who represent blockholders or "strategic investors". If "genuine shareholders" or funds which acted like genuine shareholders shed a stronger role than they typically have in insider control systems, it might be very difficult to find sufficient common ground for the board to act effectively as a "watchdog" and an advisor to management. However, even if they play only a limited role, they can be useful by contributing stock market-related information and by assuring that the "governing coalition"[14] does not go too far in pursuing other goals than those of shareholders.

This list of functions of the supervisory board, its composition and the way in which it exercises corporate governance in a well-functioning insider control system suggests what kind of information the board members can contribute, may be willing to contribute and are expected to contribute to their joint tasks. It is largely non-public, sometimes soft and confidential internal or inside information which relates, for instance, to the question of what certain management decisions would imply for the respective constituencies with which board

14 See Hackethal/Schmidt/Tyrell (2003) for more on the governing coalition in insider control systems.

members are affiliated or how certain policies affect the commitment of the respective stakeholder group. This kind of information must come from within and from various sources, which explains why a supervisory board should be composed of members from different stakeholder constituencies which are in some way close to the company. Moreover the information often refers to topics on which management may really need advice and information from someone whose advice it cannot easily shrug off. Thus the kind of information which an insider control system with various stakeholder groups represented on the board tends to generate and use, is in principle well suited to support both the monitoring and the advisory functions of the supervisory board at the same time.[15]

One element which is conspicuously absent from an insider control system is a public market for corporate control in the sense of a hostile takeover market. We have described in earlier papers why an active takeover market would hardly be compatible with the logic of a stakeholder-oriented insider control system.[16] We should add here that such a market would reduce the incentives for board members with a main affiliation to stakeholders who are not shareholders to generate information and to contribute this information to the functioning of internal governance.

ac) The outsider control system

In contrast to that of an insider control system of corporate governance, the design of an outsider control system is rather simple. This is mainly due to the clear objective function which applies for the management of a corporation. With only slight exaggeration one can say that in an outsider control system like the British system of corporate governance, management has one and only one objective, namely to act in the financial interests of shareholders. Shareholder value orientation is only limited by what one could call business judgement, which might suggest that certain concessions to other stakeholders are appropriate to secure their cooperation and loyalty. But in economic terms, a corporate governance system of the outsider control system type is not meant to function in the genuine interests of other stakeholders besides shareholders. These other stakeholders can, and are expected to, secure their interests through clear and easily enforceable contracts and well functioning markets for labour or credit which offer “exit options” if there is reason for discontent. In the British corporate governance and largely also that of the United States, banks and employees do not have any board representation or other active corporate governance function which one could

15 See Fama/Jensen (1983) for a similar argument.
16 See Schmidt/Tyrell (1997).

consider as requiring "voice" in the sense of *Hirschman's* well-known dichotomy, since non-shareholders are not tied to the corporation by "loyalty"[17].

Corporate governance in an outside control system consists almost exclusively in mitigating the "classic" *Smith-Berle-Means-Shleifer-Vishny* agency problem of preventing negligence and self-serving behaviour of management.

There is of course also a board of directors in an outsider control system, which includes a certain number of outside directors. But this board is more restricted in its functions than a (German) supervisory board. Its functions do not include the balancing of divergent interests since there is no room for a "legitimate" divergence of interest in a corporate board. Also the monitoring is easier in principle – though certainly not in practice - because it is clear what management is supposed to do. The only real monitoring function is to limit the extent to which management pursues its own interest at the expense of shareholders, the common agency problem. But the board can hardly be regarded as the main instrument or mechanism for monitoring. Since shareholder value is the supreme and sole objective, also the advisory role of outside board members is restricted to eventually telling managers what they think might be the reaction of the stock market to certain corporate policy decisions. This brief list of tasks indicates what the information is which outside boards are supposed to have and to contribute: It is essentially stock market related and thus public or outside information.

The structure and the composition of "the board" in an outsider control system correspond to this restricted set of functions of the outside board members. First and foremost, there is typically only one board; the reasons for having a dual board structure do no apply. The outside board members are at the same time trustees of the general shareholder population and experienced advisors to the inside board members, but their expertise should mainly refer to general management issues and to how the stock market would evaluate certain policies. If one leaves aside cynical explanations of how outside board members are selected[18], this is the general logic which determines board compositions.

In a theoretical perspective, boards are not the main element of an outsider control system. This role is reserved for the capital market and especially one segment or aspect of this market, namely the market for corporate control. Bad management in the sense of a management team which fails to maximise shareholder wealth, is disciplined by the capital

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17 See Hirschman (1970) for the roles of „Exit, Voice, and Loyalty" in the design of organisations. In a highly inspiring comparative study of the German and the British corporate governance systems, Mann (2002) uses these concepts to characterise insider and outsider governance.

18 See Hermalin/Weisbach (2001).

market or the threat coming from this market. Bad management runs into difficulties if there is the need to raise external capital. It is exactly for this reason, i.e. to provide a control device for bad management, that in countries with an outsider control system of corporate governance bank financing is less extensive and dividend payout ratios are more generous than in countries with insider control systems.

Even more so, the market for corporate control can in principle provide discipline. It serves to replace bad management and, following *Manne (1965)*, the threat of being replaced is what induces managers to behave in the interest of shareholders: The best policy for incumbent management of avoiding a hostile takeover and to protect its attractive position is to drive the cost of a takeover up as much as possible. By this means they maximise the rents that can be extracted by the (minority) shareholders. And this is exactly what shareholders want management to do anyway!

For the proper functioning of the capital market as a disciplinary device the market must be well informed and liquid. Liquidity requires more than anything else equality of information for all market participants. Inside information is inimical to a well functioning market. The same holds for the takeover market. Thus, ultimately it is the market which "governs" corporations, and the typical market participants must not be close to the corporation, since closeness generates informational asymmetries and reduces liquidity. Thus the – anonymous and not really active or "voice-based" – actors in an outsider control system are indeed "outsiders".

Given the way in which an outsider control system is designed and functions, it follows directly what kind of information and what distribution of information is required for the functioning of the system: Again it is largely information about and for the capital market, thus public information or information which can be passed on to the general public, in other words, outside information. Outside information is the basis of markets, especially capital markets; and inversely, well functioning or efficient markets (in the spirit of *Fama (1970)*) contribute themselves to making information public by revealing it through publicly observable prices. Outsider control systems rely on the externalisation of information and at the same time reinforce externalisation.

ad) Complementarity between information, governance and financial system

Only in passing, we want to point out an important parallel between the insider and the outsider control system. Both are systems composed of complementary and consistent elements among which the nature of governance-relevant information plays a key role, and

both are surrounded by, and indeed an essential part of, the financial, legal and economic system.

The outsider control system is composed of elements which fit together well: Outside information, strict shareholder orientation, a unitary board and no board representation for lenders and employees form a consistent system of complementary elements, just like the converse features provide consistency to the insider control system.

In the case of the outsider control system, the surrounding financial, legal and economic system comprises, among other things, well functioning labour and capital markets and an efficient legal system to protect employees and lenders, less durable employment patterns, less bank lending and lending with shorter maturities and higher collateral requirements and little involvement of banks in the case of borrowers' distress, and many other features.[19] For short, we call this larger system a capital market based financial system. The capital market based financial system and the outsider control system are complements and are consistent, and both rely on the externalisation of information.

The converse features make up a bank-based financial system to which an insider control system of corporate governance belongs, for which it is a complement and which also relies on the internalisation of information. Thus the nature of information is not only the key to understanding specific corporate governance systems and their differences, but also the systems at large to which they belong.

b. Financial intermediaries as providers and processors of information

ba) Introduction

This section adds the aspect of intermediaries to the line of reasoning developed so far. In order to analyse the role of financial intermediaries in corporate governance systems we first have to clarify our notion of financial intermediaries and thereby also to limit the scope of our discussion. The financial sector of a country encompassing the financial intermediaries, which can be subdivided into banks, non-bank financial intermediaries (NBFIs) and financial markets, and also the regulatory environment in which these institutions operate.[20] To focus our discussion, we will employ a more narrow definition of financial intermediaries as institutions which have mainly financial assets and liabilities on their balance sheets. Thus we will only discuss banks and NBFIs, which seems appropriate since only banks and NBFIs can

19 For an extended analysis of the correspondence between corporate governance (as a system) and the financial and economic system at large in which the corporate governance system is embedded, see Hackethal/Schmidt (2000).

20 See Schmidt/Tyrell (2004).

be *active* financial intermediaries in the corporate governance systems while capital markets are not acting themselves but are used by banks, investment funds and other market participants. Nevertheless, we will consider the role of markets later in this section when we discuss the externalisation of information.

It is the purpose of this section to analyse which type or types of financial intermediary is or are the dominant player(s) in the two generic corporate governance systems, and how their specific roles relate to the specific mode of information processing which characterises the respective corporate governance system. As we will argue, especially in the case of banks it is really important that they are intermediaries and not just any kind of lenders.

bb) Insider control systems and the role of banks as financial intermediaries

As we have argued above, there is a close correspondence between a bank-based or bank-dominated financial system and an insider control governance system.[21] In a bank-based financial system banks play a dominant role in the process of financial intermediation, they are the main providers of external finance to companies, and they are (still) the main recipient of the households' financial funds.[22] This has important consequences for the role which banks have in an insider control system of corporate governance and especially to the way in which they deal with information in their governance role.

First of all, due to a dominant role in the intermediation process, risk sharing will be executed mainly through banks. As *Allen/Gale* have argued in a number of important contributions, banks are specialists in handling inter-temporal risk sharing and in implementing risk sharing among generations.[23] *Allen/Gale* show in a formal model that with respect to the handling of risk, a bank-based financial system can be superior to a capital market-based financial system because banks can better allocate risk and smooth consumption inter-temporally. This can be achieved by households accumulating claims against banks. A key feature of asset accumulation as a mechanism of risk reduction is that the holders of the claims do not incur any, or only a very minor, price risk, even though the value of the assets by which their claims are ultimately secured may well be subject to risk. In practical terms, this requires that households hold their financial wealth mainly in the form of fixed claims on banks, i.e. as

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21 This is certainly true for industrialized countries. See Allen/Gale (2000a), Chapter 1, and Allen/Gale (2004) for further details.

22 See for instance the empirical analysis in Schmidt/Hackethal/Tyrell (1999) and Hackethal/Schmidt (2004).

23 See especially Allen/Gale (1995, 1997). Inter-temporal risk results, for example, from macroeconomic developments, such as the oil price shock in the early 1970s, the stock market crashes of 1987 and 2000/2001, or the dramatic fall of asset prices in Japan since the early '90s. In all of these cases there were pronounced, long-lasting and highly correlated changes in the prices of most assets, including market-traded assets, such that investors were unable to effectively offset the resulting non-diversifiable risks.

deposits, and that the banks can credibly commit to honour these claims in full and without delay if the depositors want their money back. Banks can offer these secure investment opportunities and therefore allow – socially desirable, i.e. welfare enhancing – inter-temporal risk-reduction under two conditions. Firstly they must be sufficiently stable and profitable so that they can build up a buffer in good times when returns on the assets they hold are high and reduces this buffer stock in bad times. Secondly, the competition between banks and capital markets must not be all that strong, because otherwise agents – and the banks themselves – would turn to investing in the capital market when returns are high and thereby undermine the income smoothing function of banks. Only if the outside options of the agents are not "too good", they will stick to the financial arrangement, the deposit contract with a bank which builds up and occasionally depletes a buffer, which has been agreed ex ante because of its efficiency property.

What are the informational aspects of this arrangement, and what is their relationship to corporate governance? In contrast to cross-sectional or intra-temporal risk sharing, where risk referring to a given point of time is allocated and distributed efficiently among agents and which can be achieved via markets, efficient inter-temporal risk sharing does not require that information is symmetrically distributed between depositors and banks. Hence, the important function of banks – and more generally of a bank-based financial system – to mitigate inter-temporal fluctuations is consistent with banks holding assets which are not easily marketable in a secondary market and with relationship lending.

In bank-based financial systems relatively little information is made available to – as well as from - financial markets. Disclosure requirements are not as strict as in market-based systems, and the role of accounting is not so much that of making information publicly available, but to facilitate relationship-based lending, for instance, by restricting dividend payments to outside shareholders and by informing management and supervisory boards, i.e. the insiders.[24] Both the "handicap" for capital markets and the privilege for banks as lenders are based on the information system, and both have the effects that bank lending is more important and especially long-lasting relationships between banks and corporations are more prevalent in bank-based financial systems.[25] In an ongoing credit relationship, banks acquire considerable information about their borrowers, more than what is released to the markets in bank-based systems. A considerable share of the accumulated information is soft information which

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24 See Leuz/Wüstemann (2004) on how much information audit reports contain and who gets this information. See also Silva/Goergen/Renneboog (2004) for an interesting comparative analysis of dividend policy in different industrialized countries.

25 See Elsas/Krahnen (2004) on empirical evidence concerning relationship lending in Germany.

cannot be credibly communicated from one agent to another because it is not verifiable by anyone other than those who have generated it.[26]

Much like investors in corporate equity, lenders with long-term engagements depend in a crucial way on the decisions taken by management on behalf of borrowing corporations. This is why they have a genuine interest to be involved in corporate governance: they need "voice", since the exit is difficult and costly, and they contribute information which is relevant for monitoring and advising management. Thus the informational features of a bank-based system create both the need and the potential of banks as lenders to participate in corporate governance in an active manner.

Based on accumulated soft information and also the mainly internal use of potentially hard information, borrowers are locked in; they are dependent on their bank(s). Of course, this has important advantages: Close ties between a bank and its debtor provide incentives for information production, monitoring and advising the debtor, enable (efficient) renegotiation of contracts, and allow for inter-temporal transfers.[27] But this closeness also has a dark side: over time, banks as lenders who can rightly be assumed to have more information than potential other lenders, acquire a certain degree of monopoly power and therefore the ability to extract excessive rents from their borrower-clients. This is a potential weakness of a bank-centric internal control system, but this disadvantage can be mitigated if *multiple* constituencies, i.e. stakeholders, are represented on the board of the company. With the mixed composition of (supervisory) boards not only the interests of banks and shareholders but also those of employees and sometimes even suppliers and customers have to be taken into account. These different stakeholder groups are sharing control, thereby incorporating the somewhat diverse information they have. Since the "stakes" of all groups of stakeholders tend to be substantial, their incentives for the production and use of information is also substantial. The free rider problem of large groups is not likely to apply, and the disadvantage of institutions relative to markets pointed out by *Hayek*, that not enough information and not sufficiently diverse information will be incorporated into an economic system when information is not disclosed through the price mechanism, is to a certain extent alleviated in an insider control system.

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26 See Stein (2002) for this definition of soft information which also refers to the tacit dimension of knowledge and Berger et al. (2004) whose results support the hypothesis that relationship lending goes hand in hand with the usage of soft information.

27 See Rajan (1992), Boot (2002) and Elsas/Heinemann/Tyrell (2004) for a theoretical analysis of relationship lending and Elsas/Krahnen (1998, 2004) for empirical support.

This description of the role of banks in an insider control system serves to show that certain aspects of the insider control system can only be explained in reference to the role of the banks which we have sketched and the kind of information which banks can contribute and which is important for governance. But three questions are still unanswered up to this point.

First, what are the incentives of banks to fulfil their roles? Of course, they can earn rents by being a relationship lender. Being involved in governance and thereby obtaining additional information allows them to make better lending decisions. Moreover, by contributing to the control of management together with other groups which have a strong interest in stable growth rather than merely in maximising future profits irrespective of its riskiness, they have a certain assurance that management decisions are not "biased" in favour of shareholder interests and too risky from the standpoint of a lender.

But generating information and contributing to the governance of corporations is also costly for banks. What prevents them from taking a free ride on the efforts of others in this respect? As was argued first by *Calomiris/Kahn (1991)* and later on more generally by *Diamond/Rajan (2000, 2001)* banks are disciplined by the threat of runs. The argument goes like this. On their asset side banks have illiquid loans whose market prices in a fire sale would be below their internal values. Having to sell or to call loans prematurely would involve a loss. The greater part of the activities which banks undertake – and need to undertake - to monitor their loans, which includes their active involvement in the governance of borrowing corporations, are not really observable for depositors.

At least a certain part of a bank's liability are call or sight deposits which are by definition and by law to be paid back on demand and on a first-come first-serve basis. This rule of distribution makes depositors wary that they might be late or stand too far behind in the waiting line in the case a bank encounters problems, and it makes them even aware of what little information they may have on the monitoring activity of the bank. This situation can lead to a bank run, and the danger of a run is what induces banks to do what their depositors want them to do, namely to be active delegated monitors in the spirit of *Diamond (1984)*. This is – according to the most advanced theory of financial intermediation to date[28] – the sense in which banks are exposed to an incentive mechanism which forces them to be active monitors, possibly with an active governance role. Thus the role of banks in corporate governance ultimately rests on the interaction of information internalisation and the nature of banks as

28 For a recent survey of this literature, see Chapter C of Tyrell (2003).

financial intermediaries – an extremely rich person who would use his own funds for lending would have different incentives and act in a different way.

However, the incentive mechanism of the threat of a run on sight deposits also has a downside: As *Diamond/Rajan (2000)* also show, it leads to a "natural" instability of any banking sector and makes bank-based financial systems susceptible to crises.

The second question is what the roles of other financial intermediaries in an insider control system are. Empirical evidence supports the assumption that pension and investment funds do not play an active role in the monitoring of companies.[29] But as long as they cannot and do not pressure too much in the direction of profit maximisation, their presence would be compatible with the logic of an insider control system. Insurance companies are in some way similar to banks and support the latter in their corporate governance functions.[30]

We conclude with a brief look at what one could call information intermediaries. Auditors provide a particularly important function in an insider control system based on information internalisation. As convincingly shown by *Leuz/Wüstemann (2004)*, in Germany, for instance, a substantial amount of information is generated by auditors and communicated through non-public channels to the supervisory boards. This supports the internal information processing mode.

The third question, which firm characteristics and industry structures are particularly well suited to an efficient functioning of the insider corporate governance system will be taken up in our concluding section 4.

bc) Outside control systems and the role of financial intermediaries and markets

In a typical capital market-based financial system NBFIs and especially investment and pension funds play a dominant role in the accumulation of household savings and in the financing and the governance of corporations.[31] Since investment and pension funds, as those NBFIs and at the same time financial intermediaries in the narrow sense to which we confine the following discussion, invest a large fraction of the funds which they collect in the capital

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29 See Mann (2002) and the references given there. Actually in Germany as in many other countries characterized by an insider control system, most investment and pension funds belong in terms of ownership to the banks.

30 For instance in Germany there is (still) a web of mutual ownership linkages between banks and insurance companies.

31 See Schmidt/Hackethal/Tyrell (1999). Of course, in some outsider control systems banks also are important intermediaries in terms of the quantity of funds transmitted. But, as we will argue later on, the loans granted by these banks are often "transaction-based".

market, the intermediation process relies heavily on financial markets.[32] This is reflected in the ownership structures of most listed companies in countries with capital-market based and outsider controlled systems. Their shares are primarily held by institutions such as investment- and pension funds, and by individual investors. Ownership is typically dispersed in the sense that no one institution or investor holds a large stake in a single company.[33] All in all, capital market-related NBFIs and markets are important institutions in market-based financial systems.

Again in accordance with *Allen/Gale (1997)* it can be argued that financial markets are particularly well suited to achieve cross-sectional risk sharing. More risk tolerant agents end up bearing more risk than more risk-averse agents. This presupposes that markets are largely complete, transaction costs are low and - of particular importance - information is symmetrically distributed among market participants. The way in which capital markets function is consistent with the nature of the most important group of assets held by the most important financial intermediaries in this system.

Disclosure to the general investing public is better and more strongly enforced. Furthermore, the information provision and dissemination process is supported by many financial analysts working for the NBFIs, by financial newsletters, by full-service stockbrokers and so on. As was explained in section 2, these features of the financial system in general are consistent with the predominance of outside information or, in other words, the system is grounded on information externalisation.

As we have argued above, corporate governance in an (idealised) outsider control system is not “actively” pursued by certain persons and institutions but results as a side effect of the working of financial markets. The same holds for information transmission: it is also a by-product of the way in which financial markets function, as the well-known concept of “informationally efficient markets” (*Fama(1970)*) suggests.

These considerations have led the research literature to delve deeply into the question if there could be a separate but nevertheless well functioning market for information. In view of the peculiarities of information as a good, which we have discussed in section 2, the answer to this question is certainly not trivial. Suffice it to note here that in principle such a market is conceivable, and it may play a role in the design of a corporate governance system. But for the purpose of the present paper, another aspect of this literature is more relevant: It provides

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32 In the following the terms capital markets and financial markets will be used as synonymous.

33 See Barca/Becht (2001) for a comparative empirical analysis of ownership structures in different industrialized countries.

at least some foundations to discuss the question of why intermediaries such as investment and pension funds exist at all and what their existence implies for the issues of information and corporate governance.

As forcefully argued by *Admati/Pfleiderer (1988, 1990)*, *Allen (1990)* and *Bhattacharya/Pfleiderer (1985)*, these intermediaries can be interpreted as institutions that mitigate the problems in selling information discussed above. In a nutshell, the argument goes as follows:[34] A monopolistic information owner creates a mutual fund to „sell“ his information *indirectly*. Investors purchase shares in the fund, thereby buying the information without observing it. Each investor will be charged a fee that is a function of the shares he buys, and through this the information owner charges for the information. By that means the information owner can control the effects of competition among these indirectly informed traders and increase his profits. The leakage of information through asset prices, which creates the public good problem and means that traders can free ride on the information of others, is mitigated. This, in turn, encourages agents to expend resources to produce information. The incentives for information acquisition in capital markets are increased and the extent to which market prices reflect the information of informed individuals is altogether enlarged.[35] Also the reliability problem in selling information, mentioned in section 2, can be alleviated by creating a mutual fund. As was shown by *Allen (1990)*, mutual funds employ analysts to acquire information about stocks in order to achieve a reliable information transfer. A fund uses the information of the financial analyst, i.e. the original information seller, to determine its trading positions and the resulting portfolios can be marketed truthfully to investors.[36] Through a set of portfolios and payments the fund can correctly reveal the signal he gets from the financial analyst. Investors again buy the information by purchasing shares of the fund. As a result, the reliability problem of information transfer leads to a theory of NBFIs which is not based on transaction costs. The intermediary can capture a part of the information’s value since the original seller - the financial analyst - cannot obtain the full value because of the reliability problem. In a similar vein, *Biais/Germain (2002)* analyzes the agency relation between investors and these financial intermediaries. They derive the optimal incentive-compatible contract when the financial institution herself can trade on private information *and*

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34 See Admati/Pfleiderer (1990) for more details and Tyrell (2003), Chapter B, for a summary of this strand of literature.

35 This means the Grossman-Stiglitz-problem of the impossibility of informationally efficient markets is diminished. Of course, the informational status of a capital market also depends on the existence of liquidity or noise traders who are the lubricant for an active trading mechanism; an issue we will not discuss here due to space limitations.

36 See also Bhattacharya/Pfleiderer (1985).

also sell it to investors through a managed fund. In order to give the fund an incentive to trade in the interest of their clients, the contract requires a compensation of the fund that is an increasing function of the fund's profits. This also limits the aggressiveness of the total trade of the financial institution, i.e. the fund's trade and her proprietary trade, thus reducing the information revelation and increasing the overall profits of the financial institution.

In summarizing, the literature sketched here has in common a justification of the existence of these NBFIs based on their *pivotal* role in creating a market for information. Having in mind that different funds with different management styles are acting on the capital market, by that means using and processing (slightly) different pieces of information, as a result a great deal of information will be aggregated and incorporated in the corporations' share price. NBFIs contribute in a crucial way to liquid capital markets. Information will be externalised, the functioning of the price mechanism is supported. In consequence, the share price of a corporation is an objective, by individual investors and stakeholders of the company not manipulable, and (frequently) reliable indicator of the value of a corporation. Of course, this has direct implications for the corporate governance of the corporations.

In finance and legal writings on corporate governance it is frequently argued that shareholder value maximisation is the "natural" efficiency criterion. Hence, *Jensen/Meckling (1976)* articulated that corporate governance should exclusively protect and promote the interests of shareholders if the firm is viewed as a nexus of complete contracts with stakeholders, only shareholder have an open-ended contract without specific protection, and there are no significant managerial agency problems. Also in a world of incomplete contracts one can argue in favour of shareholder value maximisation as long as shareholders are relatively less well protected than other constituencies. If, for instance, workers and creditors are not locked into a firm-specific relation and can quit at reasonable low cost, the corporate governance rules should primarily be designed to protect shareholders' interests. However, a precondition for the functioning of an outsider control system based on shareholder value maximisation is an informative share price. Only then the set of corporate governance mechanisms, including active markets for corporate control and executive compensation packages with a high equity-based component, ensure that managers of the firm act in shareholders' interest.

It is noteworthy that the NBFIs are not only pivotal in contributing to the externalisation of information but also in implementing the above mentioned corporate governance mechanism to discipline the management.[37] However, in contrast to banks in an insider control system,

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37 See Mann (2002) for further references.

they do not *actively* monitor the management of the corporations but stay passive. Consistent with the logic of an outsider control system, they are putting pressure on the management by trading shares of the respective company and, for instance, investing only in companies that follow certain binding corporate governance principles and codes, thereby supporting and strengthening the governance mechanisms.[38] In the terminology of *Hirschman*, NBFIs use the "exit option" instead of "voice". In this way they contribute to a functioning outside control system which ensures that agency problems and information asymmetries between investors and firms are primarily resolved via public disclosure through the price mechanism. As in the last section, at least three additional questions arise.

First, what are the incentives of NBFIs to fulfil their role? One has to consider the agency relationship between investment and pension funds, the funds' managers and the investors. Of course, in a corporate governance system in favour of shareholder maximisation, the investment funds themselves should maximise their own value to act in the interest of the investors.[39] Hence, incentive contracts between an investment fund and his management, i.e. the money managers, and between an investment fund and his investors should be written such that profit maximisation is the ultimate goal.[40] On the other hand, the NBFIs should invest in a way that they immediately can react to new investment opportunities. Together this means the NBFIs have to be active participants on the capital market, thereby reacting to new information and price signals and promoting shareholder value maximisation in the corporate sector as guideline for management decisions. Only then a reasonable objective measure is given by which these NBFIs themselves can be valued. However, such a structure also has a dark side.[41] If the investors as ultimate providers of funds are unable to observe the characteristics of the investment, a classical risk-shifting problem on side of the NBFIs results: Money managers have incentives to take risk. If their investment strategies are successful, they may be rewarded by a share of return and attract new investors in the future. Typically they receive management fees in proportion to the assets under their control. Thus they are better off as a result of their good performance. However, if their investment strategy is unsuccessful, there is a limit to the downside risk that the manager bears. They will be fired in the worst case, but their liability is limited. As a result of this agency problem of excessive

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38 CalPERS, the Californian pension fund for state employees, only invests in companies that obey certain specified corporate governance rules. See also Romano (2002) for an analysis of investor activism.

39 In clarifying the argument, we do not consider certain portfolio restrictions actively managed funds may have to obey.

40 We cannot go into details here. But see Franks/Mayer/Silva (2003) for an analysis of the asset management industry which uncovered many deficiencies in the investment business.

41 See Allen/Gale (2000b).

risk-shifting, bubbles in asset prices can be caused.[42] Thus, financial crises are not only a phenomenon of bank-based financial systems but can emerge in market-based systems as well.

Second, what is the role of other financial intermediaries in such a system? Life insurance firms act more or less in the same manner as mutual funds.[43] They are managing their assets by actively investing in the capital markets and supporting the corporate governance mechanisms based on the share price, but typically they do not use their "voice" to monitor corporations or to give advice. To a large extent banks are "only" granting so called "transaction-based" loans, based on good collateral and mostly short-term, thereby using hard information in originating the loan.[44] At least with respect to listed companies, banks are typically not interested in an active monitoring role. As convincingly argued and shown by *Kroszner/Strahan (2001)*, a strong shareholder regime, such as the U.S, discourages banks to take an active role in monitoring or information gathering through the corporate governance system. Banks do not have privileged access to information because bankers are – rightly - concerned about lender liability, and the management and the shareholders want to avoid a conflict of interest with the banker, for instance, in case of financial distress.[45] Instead, bank debt should be a hard, non-renegotiable claim in the capital structure of the company, in this way acting as a disciplining device for the management to pursue shareholders' interests. As a consequence, also the role of banks is supportive of an outsider control system with information externalisation.

In addition, the so called information intermediaries such as rating agencies, newsletters, financial analysts, and investment advisory services, play an important role in contributing to the information provision process. The accounting and disclosure system, strictly enforced by public authorities and the exchanges, focuses on outside investors to ensure that they are reasonably and equally well informed and, hence, willing to invest in the capital markets.[46]

The third question which concerns the interrelations between an outsider control system with information externalisation and the types of activity promoted in the economy, i.e. the industry structures, will be taken up in the conclusions.

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42 In a similar vein, the relative performance written by investors with the portfolio manager can lead to herding behaviour on side of the manager. This, in turn, also can cause bubbles. See Gümbel (2004) for an efficiency analysis of relative performance contracts in the investment industry.

43 See Franks/Mayer/Silva (2003) for a survey.

44 See Allen/Gale (2004) for further details.

45 See Kroszner/Strahan (2001) for a most interesting analysis of the role of banks in the U.S. corporate governance system.

46 See Leuz/Wüstemann (2004) for more details.

4. Conclusions

Our paper argues that the mode of information processing, i.e. internalisation or externalisation, shapes the corporate governance system. We emphasised that an outsider control system goes hand in hand with externalisation of information whereas an insider system is closely intertwined with information internalisation. Furthermore, intermediaries play a crucial role in the functioning of the respective corporative governance system. In bank-based financial system, banks build up long-term financial relations with corporations, thereby acquiring considerable amounts of information about their borrowers which they use to allocate resources. An insider control system that takes into account explicitly the interests of other constituencies besides shareholders is conducive for banks to adopt an active monitoring role in the corporate governance. In market-based financial systems, NBFIs typically dominate the financial sector by using capital markets to facilitate the allocation of resources. As a consequence, information is quickly reflected in stock prices and we see a great deal of information disclosure. Hence, stock prices are an attractive indicator for corporate governance issues and accordingly shareholder value maximisation is the only "game in town" in outsider control systems. This, in turn, reinforces the NBFIs to adopt a passive monitoring role in the corporate governance. In outsider control systems corporate governance is mainly exercised – directly or indirectly – via the share price.

In sum, we have two corporate governance systems which are - at least in principle - consistent and workable. One question that immediately arises out of this is the following: Can one draw a connection between the effectiveness of a respective corporate governance system and certain industries? *Allen (1993),* for instance, suggested that capital market-based economies with outsider control, such as the U.S., have been in particular successful at developing and financing new industries, for example the computer industry after the second world war and more recently the biotechnology and the internet industry.[47] On the other hand, countries like Germany and Japan with a traditionally more bank-based financial and corporate governance system are pretty good at traditional or mature industries, such as the automotive industry, the engineering industry or electronics in Japan. Of course, here we cannot discuss this issue in detail. Though, we want to point to some aspects which are of direct relevance for our topic because of their implications regarding the type of information processing and corporate governance.[48]

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47 See also Mayer (2002) for an interesting analysis of broadly defined financial sector preconditions, i.e. embedding corporate governance, for the successful development of a high technology sector.

48 See Hackethal/Schmidt (2000) for a more detailed and comprehensive analysis.

The above observations can be explained referring to the different types of information processing in the respective systems.[49] Funding new industries is difficult because there is hardly any success evidence based on experience, the investments are risky, and in addition there is typically a wide diversity of opinion regarding success and success conditions. However, capital-market based economies with their well-developed systems for the acquisition, aggregation and distribution of information have advantages in financing these industries. As we argued above, for individual investors and investment funds the cost of gathering information are low because of the well-functioning market for information and the price mechanism, and those investors or mutual funds that anticipate high returns can provide financing for the new firms. The allocation mechanism emphasised by *Hayek* works more or less frictionless.

When the decision to finance the new industries is delegated to one or only a few banks, what typically happens in bank-based financial systems, the allocation process is interfered. In such an arrangement with internal information processing there is no easy way to account for the diversity of opinion in the economy. Investors anticipate that they may disagree with the intermediary, which has the consequence that they are reluctant to provide funds for these investments without acquiring information on their own. In sum, the bank-based financial system has clear disadvantages in this respect. However, banks are better equipped to finance established industries. Here the advantages of an internal information process come into play. Why? The problem of financing these industries is not so much the ex-ante disagreement on how – if at all - they should be managed but the timely monitoring of the management process and the containment of moral hazard problems. As we argued above, banks – at least in principle – are specialists in doing so.[50] That issue already indicates the second aspect we want to emphasise.

As we argued above and *Boot/Macey/Schmeits (2004)* postulate, the trade-off between objectivity and proximity is a central issue in the basic orientation of the corporate governance structure in different countries.[51] Outsider control systems are based on objectivity because potential monitors such as mutual funds, individual investors, outside lenders, hostile acquirers, analysts and credit rating agencies stay distant from the management and use a reasonable objective criterion to evaluate the management's performance, that is the shareholder value. In insider control systems, other stakeholders or

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49 The theoretical model is developed in Allen/Gale (1999).

50 See also Mayer (2002) for a dynamic analysis of the requirements for the development of "new economy" industries who comes to a similar result.

51 The following reasoning follows closely Boot/Macey/Schmeits (2004) and Schmidt/Weiss (2003).

stakeholder groups besides shareholders monitor more or less on a real-time basis - not only through the board - the firm's management, thereby being in close contact with the management and participating as well as influencing important decisions. Thus, monitoring in an outsider system using the price mechanism is often ex post and evaluative while in an insider system with internal information processing it is ex ante and proactive.

Typically, one cannot have both at once, that is being objective *and* proximate, because as an insider one frequently tends to adopt the perspective of the firm. Hence, an insider control system is in particular effective if the benefits of proximity dominate the benefits of objectivity, and the other way around in an outsider control system. At this point the specificity of investments by the stakeholders comes into play. An insider control system with prompt correction of management failure is especially of value when the investments made by stakeholder(s) should be firm-specific.[52] In that case, late intervention is in particular harmful because it leads to an irreversible loss on side of the stakeholders. Anticipating this, they will reduce their firm-specific investment level. As a consequence, seen from this perspective the insider control system with stakeholder orientation is dominant provided that irreversibility characterises the firm's assets. On the other hand, if the firm's assets are readily marketable and investments largely not irreversible, then the ex post correction mechanism connected with an outsider system gives the best incentives. Thus again, in principle different industry structures should be promoted with different corporate governance systems.[53]

In concluding, what does all this mean for the question if it is possible to combine the two types of corporate governance systems and the two ways of dealing with information. We have no ready answer to this question. In earlier work we were sceptical since – so our argument - a system characterized by complementarity needs to be consistent to function properly and combining important elements of both systems would destroy this consistency.[54] But even in accepting this argument there is the deeper issue if one can develop - or if there is already arising - a structure with two different yet consistent and functioning governance systems for big companies in *one* country, without causing too much inefficiencies, and having in mind the elaborated (juridical) requirements of the respective systems. We especially invite law scholars to discuss this issue with us.

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52 If different stakeholder groups, i.e. shareholders, lenders and employees, undertake firm-specific investments, this argument also explains why all this groups should be represented in the monitoring and advising process, and why there is a "balance of power" between these groups.

53 See Carlin/Mayer (2003) for first empirical results in this direction.

54 See Schmidt/Spindler (2004).

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