

GLOBAL DIFFERENCES IN CORPORATE  
GOVERNANCE SYSTEMS THEORY  
AND IMPLICATIONS FOR REFORMS

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**GLOBAL DIFFERENCES IN CORPORATE GOVERNANCE SYSTEMS  
THEORY AND IMPLICATIONS FOR REFORMS**

Markus Berndt\*

*Abstract*

Agreements on reforms of corporate governance, corporate law, and securities regulations, in order to augment the functioning of emerging equity markets, are complicated due to the fact that two different financial systems with some opposing features have evolved in the advanced economies, namely the insider system and the outsider system. The persistence of these systems are sought to be explained by introducing interactions between corporate governance, regulatory intervention, and capital markets into a model of evolutionary game theory. Resulting network effects are identified and analyzed. One major conclusion of the analysis is that, in the long run, reforms should be headed towards features of the outsider system because it operates better in integrated capital markets. However, attempts to achieve immediate transition into that direction can have detrimental effects, if the legal environment is not supportive enough for arm's-length financing.

**Key words:** corporate governance; corporate ownership; network effects; path dependence; corporate law; securities regulation.

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# GLOBAL DIFFERENCES IN CORPORATE GOVERNANCE SYSTEMS THEORY AND IMPLICATIONS FOR REFORMS

Markus Berndt<sup>\*</sup>

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## 1. Introduction

### 1.1 Intention

Building a sound financial system is a prerequisite for economic development in both transition economies and developing countries.<sup>1</sup> To ensure long-term financial stability, the development of bond and equity markets is one important way of reducing the financial fragility of emerging economies.<sup>2</sup> This insight has led various international organizations to work on principles of institutional foundations for well-functioning equity markets: *corporate governance*. The most cited corporate governance principles are laid out by the OECD.<sup>3</sup> The World Bank concentrates on implementation strategies.<sup>4</sup> Emphasis on regulatory aspects is put by the IOSCO.<sup>5</sup>

The provided guidelines serve to pronounce necessary key elements of corporate governance to enhance efficiency of capital markets. However, when it comes to concrete recommendations, the fact that corporate governance and associated regulatory approaches differ widely even between advanced economies poses problems.<sup>6</sup> There is only a very limited

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<sup>1</sup> See Steven Fries and Timothy Lane, *Financial and Enterprise Restructuring in Emerging Market Economies*, in: Caprio, Gerard *et al.* (eds.), *Building Sound Financial Finance in Emerging Market Economies*, Washington, IMF, 21–46, at 21 (1994) as well as EBRD, *Transition Report 1998 – Financial sector in transition*, London, 92 (1998).

<sup>2</sup> Michael Taylor, *International financial standards and the transition economics*, LAW IN TRANSITION, Autumn 1999, 2–8, (1999).

<sup>3</sup> OECD, *OECD Principles of Corporate Governance*, published by the Ad Hoc Task Force of Corporate Governance, 19-Apr-1999, Paris (1999).

<sup>4</sup> See Magdi R. Iskander and Nadereh Chamlou, *Corporate Governance: A Framework for Implementation – Overview*, Washington, D.C., World Bank (2000).

<sup>5</sup> IOSCO, *Objectives and Principles of Securities Regulation*, Montreal (1998).

<sup>6</sup> See Erik Berglöf and Ernst-Ludwig van Thadden, *The Changing Corporate Governance Paradigm: Implications for Transition and Developing Countries*, paper presented at the 11<sup>th</sup> Annual Bank Conference on Development Economics, April 28–30 (1999).

literature that provides theories to explain the evolution and persistence of significant differences in financial systems of high-income countries, as they are observable today. This paper attempts to add to this discussion. It is motivated by the belief that a deeper understanding of why financial systems have evolved in different directions helps to draw conclusions for future reforms in both developing and developed economies.

## 1.2 Empirical Evidence – Stylized Facts

Several comparative empirical studies<sup>7</sup> find that within, and especially between different countries, significant differences in corporate ownership structures can be found. Two different financial systems seem to have evolved in the past few decades. A descriptive overview of some distinctive differences regarding ownership, control, and capital markets in major economies is provided in Table 1.

The observable differences are usually categorized by assigning countries into two groups. One group of countries (France, Germany, and Italy) exhibits a high level of ownership concentration, illiquid capital markets, and a high degree of crossholdings (equity stakes held by other companies). The financial system of these countries is usually termed as an *insider system (IS)*. Widely dispersed ownership, liquid stock markets, a low level of inter-corporate crossholdings, and an active market for corporate control are the main features of the other group of countries (UK and US). Their system is usually referred to as an *outsider system (OS)*.<sup>8</sup>

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<sup>7</sup> See, e.g., Harold Demsetz, *The Structure of Ownership and the Theory of the Firm*, JOURNAL OF LAW AND ECONOMICS, 26, 375-390 (1983); Julian Franks and Colin Mayer, *Corporate Ownership and Control in the U.K., Germany, and France*, JOURNAL OF APPLIED CORPORATE FINANCE, Vol. 9, Winter, No. 4, 30-45 (1997); Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, *Corporate Ownership Around the World*, JOURNAL OF FINANCE, Vol. 54, No. 2 (April), 471-517 (1999).

<sup>8</sup> A summary of the terminology is given by Erik Berglöf, *A Note on the Typology of Financial Systems*, in: Klaus J. Hopt and Eddy Wymeersch (Eds.), *Comparative Corporate Governance*, Berlin, Walter de Gruyter, 151-164 (1997). Depending on the authors' focus, the terms used vary among the different publications. The most prominent pair of expressions is "insider – outsider" (see, e.g., Organisation for Economic Co-operation and Development (OECD), *Corporate Governance environments in OECD countries*, February 1, Paris, OECD, 1995, as well as Julian Franks and Colin Mayer, *Ownership and Control*, in: H. Siebert (ed.), *Trends in Business Organization: Do Participation and Cooperation Increase Competitiveness?*, Tübingen, Mohr Siebeck, 1995), which will also be used in this paper. Other pairs of terms include "arm's-length – control-oriented" (Berglöf, *A Note...*, this footnote); "market-based – relationship-oriented" (Steven Kaplan, *Corporate Governance and Corporate Performance: A Comparison of Germany, Japan, and the U.S.*, JOURNAL OF APPLIED CORPORATE FINANCE, Vol. 9, No. 4, 86–93, 1997); "market-based – bank-based" (Jeremy Edwards and Klaus Fischer, *Banks, Finance and Investment in Germany*, Cambridge, Cambridge University Press, 1994); and "shareholder – stakeholder" (Reinhard H. Schmidt and Stefanie Grohs, *Angleichung der Unternehmensverfassung in Europa -ein Forschungsprogramm*, Working Paper Series: Finance & Accounting, No. 43, November 1999, Fachbereich Wirtschaftswissenschaften, Johann Wolfgang Goethe-Universität, Frankfurt am Main).

Regarding the law, one usually observes the following differences between *IS* and *OS* jurisdictions. Corporate law in *IS*-countries, like those of continental Europe, exhibits a more elaborated set of mandatory rules regarding the composition of the board, procedures regarding changes in the capital structure, minimum capital, preemptive rights etc.<sup>9</sup> Yet, at least until involvement by EU regulators, they used to be comparatively lax in the regulation of financial markets. Disclosure requirements in *IS*-countries are usually less stringent than in *OS*-countries.

**Table 1**  
**Comparison of Some Major Economies, 1996**

	Average largest stake (% of equity) of largest listed companies <sup>a</sup>		Ownership of common stock by Non-financial enterprises	Market capitalisation of listed domestic equity issues (as per cent of GDP)
France	57.9	(680)	58 <sup>e</sup>	49
Germany	55.9	(402)	42	28
Italy	48.0	(214)	25 <sup>e</sup>	21
US	25.4 <sup>b, d</sup>	(457)	0	114
UK	14.4 <sup>c</sup>	(189)	1 <sup>e</sup>	142

Sources: **Average largest stake:** L. Bloch and E. Kremp, *Ownership and voting power in France*, in: Barca, F. and M. Becht (eds.), *Ownership and Control: A European Perspective*, forthcoming (1999), M. Becht and E. Bohmer, *Ownership and voting power in Germany*, in: Barca and Becht, *Ownership...* (1999), M. Bianchi, M. Bianco and L. Enriques, *Pyramidal groups and the separation between ownership and control in Italy*, in: Barca and Becht, *Ownership...* (1999), M. Goergen and L. Renneboog, *Strong managers and passive institutional investors in the UK*, in: Barca and Becht, *Ownership...* (1999), M. Becht, *Beneficial ownership in the United States*, in: Barca and Becht, *Ownership...* (1999), S. Prowse, *Corporate governance in international perspective: a survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan and Germany*, BIS ECONOMIC PAPERS, No. 41 (1994); **Ownership by non-financial enterprises & market capitalization:** OECD, *Economic Surveys: Japan*, Paris (1996), OECD, *Economic Surveys: France*, Paris (1997), OECD, FINANCIAL MARKET TRENDS, No. 69, February, Paris (1998).

Notes: <sup>a</sup> In brackets: number of companies in the sample; <sup>b</sup> Percentage of outstanding shares owned by the largest five shareholders; <sup>c</sup> 1992; <sup>d</sup> Non-financial companies, 1980; <sup>e</sup> 1994.

*OS*-countries, on the other hand, tend to have very tight regulations on the financial markets with strict disclosure requirements whilst leaving most of corporate law as a set of default rules.<sup>10</sup> For example, even after the introduction of EU regulation, the extent of the requirements regarding forward-looking disclosure and institutional arrangements is still higher in the UK than in Germany.<sup>11</sup>

These stylized facts are summarized in Table 2.

<sup>9</sup> See Frank H. Easterbrook, *International Corporate Differences: Markets or Law?*, JOURNAL OF APPLIED CORPORATE FINANCE, Vol. 9, No. 4, 23-29 (1997), at 28 as well as David Milman, Emiliios Avgouleas, Brian Bercusson, Andrew Griffiths, *Company law in Europe: Recent Developments – A survey of recent developments in core principles of companies regulation in selected national systems*, Produced for the Department of Trade and Industry by the Centre for Law and Business, University of Manchester, (1999), at 5 and 7.

<sup>10</sup> See OECD, *Corporate Governance Environments*, *supra* note 8.

<sup>11</sup> Edward Rock, Gerard Hertig, Reinier Kraakman, *Investor Protection*, in: Hansmann, Henry *et al.* (Eds.), *The Anatomy of Corporate Law – A Comparative and Functional Approach*, forthcoming (2000).

Recently, however, there appears to be a convergence towards the regulatory strategies that are used in jurisdictions with an outsider system, *i.e.*, a deregulation of corporate law together with a stricter securities regulation in continental Europe.<sup>12</sup>

**Table 2**  
**Two Types of Financial Systems – Stylized Facts**

		<b>insider system (IS)</b>	<b>outsider system (OS)</b>
ownership	<b>ownership concentration</b> <b>inter-corporate crossholdings</b>	high common	low uncommon
markets	<b>capital markets</b> <b>market for corporate control</b>	illiquid inactive	liquid active
law	<b>corporate law</b> <b>security law</b>	strict liberal	liberal strict

### 1.3 Existing Theories

#### 1.3.1 The “Natural” Path of Development

A pioneer contribution regarding the evolution of a financial system has come from Berle and Means. They assert that industrialization produces economies of scale and consequently leads to an increase in firm size.<sup>13</sup> Budget constraints and the benefits of diversification should then eventually change a system of concentrated ownership to a financial system dominated by dispersed ownership. Different degrees of ownership dispersion would thus be explained by different stages of economic development. This might explain high levels of ownership concentration in developing countries. It does not grasp, however, the great variations of ownership concentration within equally developed countries. On their way to industrialization, they seem to have followed different paths.

So far, there is no consensus in the literature on why financial systems have evolved into different direction and why resulting structures seem to have persisted for several decades. There is, however, the consensus that the development of a financial system is determined, in addition to other factors such as social norms, by national financial regulation. The remaining question is why different countries have developed different regulatory strategies in the first place that eventually led to different financial systems.

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<sup>12</sup> See Milman *et al.*, *Company Law*, *supra* note 9, at 3.

<sup>13</sup> See Adolph Berle and Gardiner Means, *The Modern Corporation and Private Property*, New York, Macmillan (1932) [reprint with added preface and summary prepared by the authors, 1967, New York, Harcourt, Brace & World] at 47.

### 1.3.2 Exogenous Political or Legal Influences

Other authors argue that regulation was influenced by exogenous political or legal factors. These factors deter the financial system from being efficient. Prominent representatives of this stream of literature are Roe<sup>14</sup> on one side and La Porta, Lopez-de-Silanes, Shleifer, and Vishny<sup>15</sup> on the other. Strikingly, they start with opposing assumptions with regard to what could be the efficient structure and then explain the factors that have deterred some countries from pursuing the efficient path.<sup>16</sup>

Roe argues that, the development towards dispersed ownership in the US was fostered by political movements that put regulatory restrictions on strong financial institutions. This might have hindered sufficient capital accumulation. As a result, the ownership concentration in the US could be too low. In contrast to that, La Porta, Lopez-de-Silanes, Shleifer, and Vishny argue that the development towards dispersed ownership depends on the strength of shareholder protection provided by the law. This, in turn, is influenced by the legal family that the jurisdiction belongs to. Civil law countries without dispersed ownership seem to have failed to provide effective, protective law because of their legal tradition and, consequently, would suffer from an ownership structure that would be inefficiently too concentrated.<sup>17</sup>

### 1.3.3 Endogenous Law – Political Economy

Another approach is to give an endogenous explanation as to why the legal differences have evolved and persisted for many decades. If, *e.g.*, the outsider system actually is the efficient financial system and its achievement “just” a matter of augmenting shareholders’ protection, why should advanced economies like Germany or France not have undertaken the needed reforms for

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<sup>14</sup> Marc Roe, *Strong Managers Weak Owners: The Political Roots of American Corporate Finance*, Princeton University Press (1994).

<sup>15</sup> La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert W. Vishny, *Legal Determinants of External Finance*, THE JOURNAL OF FINANCE, Vol. LII, No. 3, 1131–1150 (1997) as well as Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert W. Vishny, *Law and Finance*, JOURNAL OF POLITICAL ECONOMY, Vol. 106, No. 6, 1113–1155 (1998).

<sup>16</sup> Empirical studies that attempt to find evidence to identify one or the other financial system as the efficient system have as yet produced ambiguous results. See, *e.g.*, Marc Goergen, *Corporate Governance and Financial Performance – A Study of German and UK Initial Public Offerings*, Northampton, Edward Elgar Publishing (1998), who also provides an overview of other empirical results at p. 10.

<sup>17</sup> LLSV back their theory by empirical tests. However, they only examine very few legal provisions that are also of minor importance to corporate governance, for a critique, see Henry Hansmann and Reinier Kraakman, *The Basic Governance Structure*, in: Hansmann, Henry *et al.* (Eds.), *The Anatomy*, *supra* note 11, (2000).



forty years? The same question can be asked regarding the needed reforms to get away from dispersed ownership if it was inefficient.<sup>18</sup>

One explanation is the rent seeking argument by Bebchuk and Roe.<sup>19</sup> They argue that parties exercising control in firms may put pressure on lawmakers to come up with inefficient law that allows them to increase the private benefits that they extract from the firms through the exercising of their control. These influential parties would be the managers in the outsider system and controlling shareholders in the insider system, respectively.

Bebchuk and Roe point out that rent seeking is not the only source of path dependence. They also offer general ideas of possible sources of path dependence with respect to ownership structure and rules when lawmakers are completely public regarding.<sup>20</sup> However, the focus of their paper, regarding this question, lies with rent seeking.

#### 1.4 Approach of this Paper

This paper elaborates on sources of path dependence that exist even when lawmakers are completely public regarding. The quandary addressed above is approached by modeling explicitly the interdependencies between corporate governance, legal environment, and capital markets. It is taken into account that neither agency costs, resulting from corporate finance, nor the workings of regulatory strategies to mitigate these cost, are just one-dimensional. Economically, there are trade-offs between the different dimensions. Together with network effects, this can create path dependency; *i.e.*, various systems can evolve even if the aim of legislators in all countries is to enhance efficiency. Three different sources of network effects are identified; *i.e.*, the choice of corporate governance of one firm can be influenced by the choice the other firms by three ways.

1. “*Direct*” institutional network effects result from economies of scale in financial contracting. It is cheaper to choose a certain form of corporate governance if every other firm is using the same *standard*, because of expertise, information externalities and reliability of courts due to a large number of precedents.<sup>21</sup> A corporate governance strategy yields a higher payoff when every other firm is using the same strategy, if the costs of legal assistance are decreasing in

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<sup>18</sup> The abandoning of the Glass-Steagall Act could be regarded as such a reform.

<sup>19</sup> Lucian Arye Bebchuk and Marc Roe, *A Theory of Path Dependence in Corporate Ownership and Governance*, STANFORD LAW REVIEW, Vol. 52, No. 1, 127–170 (1999).

<sup>20</sup> *Id.* at 155.

<sup>21</sup> See Marcel Kahan and Michael Klausner, *Standardization and Innovation in Corporate Contracting (or: ‘The Economics of Boilerplate’)*, VIRGINIA LAW REVIEW, Vol. 83, 713-770 (1997).

the number of standard contracts. The analysis of these effects is deferred to a separate more general paper on institutional network effects.<sup>22</sup>

2. The ownership and corporate governance structures of firms influence the size and liquidity of capital markets.<sup>23</sup> As will be explored in detail below (section 2.5.2), the nature of capital markets, in turn, influences the effectiveness of the chosen ownership and corporate governance structure. This constitutes network effects via *capital markets*.
3. Different ownership and corporate governance structures as well as states of the capital markets require different rules. The resulting legal sphere influences again the effectiveness of the chosen ownership and corporate governance structures. *Legal* network effects result.

The paper is structured as follows. A brief introduction is given into the different financial systems and the inherent differences in corporate governance. The findings of this section are subsequently integrated into a model of evolutionary game theory in section 3. Some of the model's implications are presented in section four. The paper concludes with some final remarks.

## **2. Characteristics of the Two Different Financial Systems**

### **2.1 Two Strategies of Corporate Governance**

#### *2.1.1 Shared Purpose*

In their seminal paper, Jensen and Meckling<sup>24</sup> show that the separation of ownership and control that is associated with corporate finance produces agency costs. These arise from asymmetric distribution of information between insiders (agents) who act on behalf of outsiders (principals) combined with the fact that results are not perfectly correlated with efforts of the insiders. Depending on the timing of contracting, action of the agent, and random influences of nature, one distinguishes between *moral hazard* or *hidden action* and *hidden information*, as well as *adverse selection*. A contractual first best solution cannot be achieved when the agent is risk averse or wealth constrained. In a world of comprehensive contracts, however, a second best result can be achieved by an optimal incentive contract. The design of such contracts is the main concern of a large part of classical contract theory.<sup>25</sup>

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<sup>22</sup> See Markus Berndt and Volker Simmering, *The Impact of Network Effects and Preferences on the Standardization of Institutions*, paper presented at the Annual Workshop on Law and Economics, Maastricht, 20 April 2000.

<sup>23</sup> Liquidity here is understood as the ability to put or call shares on the market without causing severe price drops or rises respectively.

<sup>24</sup> Michael C. Jensen and William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, JOURNAL OF FINANCIAL ECONOMICS, Vol. 3, No. 4, October, 305-360.

<sup>25</sup> For discussion, see, e.g., Oliver Hart and B. Holmstrom, *The Theory of Contracts*, in: T. Bewley (ed.), *Advances in Economic Theory*, Fifth World Congress, Cambridge, Cambridge University Press (1987).

Unfortunately, such contracts remain incomplete in the real world. One reason for such incompleteness is the expenses of thinking of every possible future contingency at the time of drafting the contract. Another reason can be unverifiability of some passages before the court due to information asymmetries between the contracting parties and the court.<sup>26</sup> Even if principal and agent share the same information about some signals and outcomes resulting from the agent's action, they might not be able to include these in their contract if they are unobservable before the court.

If one party undertakes an irreversible investment after contracting and a necessary bargain over loopholes in the contract occurs afterwards, this party can be exploited by the other party, because sunk costs do not have to be taken into account during the bargain. This creates hold-up costs.<sup>27</sup> For example, the price paid by a shareholder to acquire a share at an IPO usually resembles sunk costs because he is commonly not granted a redemption right. The associated financial contract is also very incomplete. Every business decision by management affects the investor's payoff and resembles a situation where such incompleteness is filled in by decision-making according to the institutional arrangements of corporate governance.

Parties have to agree on the allocation of residual control rights for all situations that are not specified in the contract. The resulting institutional design constitutes corporate governance. It assigns control rights for the use of the firm's assets. If control is shared by several individuals (*e.g.* several shareholders), decision-making rules are included. The resulting allocation of control rights determines the outcome of decision-making in an unforeseen event. It also determines the mechanisms, by which control can be transferred.

From a normative perspective, as in the classical agency theory, the design of these institutions should be guided by an attempt to minimize hold-up costs. Thus, an optimal institutional arrangement leads to a third best solution, where the *sum* of the "classical agency

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<sup>26</sup> For a detailed analysis of the theoretical foundations of incomplete contract theory, see Oliver Hart and John Moore, *Foundations of Incomplete Contracts*, REVIEW OF ECONOMIC STUDIES, Vol. 66, No. 1, January, 115-138 (1999).

<sup>27</sup> For a detailed discussion, see O. Williamson, *The Economic Institutions of Capitalism*, New York, Free Press (1985). A first formal analysis of incomplete contracts is given by Sanford Grossman and Oliver Hart, *The costs and benefits of ownership: a theory of vertical and lateral integration*, JOURNAL OF POLITICAL ECONOMY, Vol. 94, 691-719 (1986). For applications to financial contracting, see, *e.g.*, P. Aghion and P. Bolton, *An 'Incomplete Contracts' Approach to Financial Contracting*, REVIEW OF ECONOMIC STUDIES, 59, 473-94 (1992) and Oliver Hart, *Firms, Contracts, and Financial Structure*, Oxford, Clarendon Press (1995).

costs<sup>28</sup> and the hold-up costs is minimal. These agency costs are the fundamental component of the costs of capital that are associated with different forms of corporate finance. A third component are additional risk bearing costs that can arise if an investor has to deviate from an optimal investment portfolio in order to mitigate agency costs.<sup>29</sup> The alleviation of costs of capital, is the primary aim of corporate governance. In the model in chapter 3, the strategy choice of corporate governance  $S$  influences the costs of capital  $COC_S$  via these three components:

$$COC_S = \text{ClassicalAgencyCosts}(S) + \text{HoldUpCost}(S) + \text{AdditionalRiskBearingCosts}(S)$$

### 2.1.2 Differences

In all jurisdictions, the ownership rights of shares consist of two parts. First, an investor has some right to get a share of the generated profits (*cash flow right*). Second, she can exert some form of control over the assets, usually through exercising voting rights (*control rights*). The level of concentration of these two rights among shareholders constitutes the distinctive difference between the two financial systems.<sup>30</sup> In countries with an outsider system (*OS*), dispersed ownership is the predominant ownership structure of most firms. This dispersion refers to both the cash-flow rights and the control rights of ownership.<sup>31</sup> “One-share-one-vote” is the predominant rule used in corporate governance devices to distribute control rights among shareholders in *OS*-countries.

In contrast, in economies with an insider system (*IS*), a more concentrated ownership is common. Not only are cash flow rights more concentrated, but one also finds a departure from one-share-one-vote provisions in the corporate governance arrangements of firms operating under insider systems. Such deviations are not only achieved through the issuing of dual-class shares but also through crossholdings, proxy voting mechanisms, and pyramidal ownership chains.<sup>32</sup> Usually, in contrast to the outsider system, control is exerted by one or a group of controlling

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<sup>28</sup> These are the agency costs that arise due to information asymmetries between the principal and the agent.

<sup>29</sup> Taxation can also establish differences in the costs of capital of different sources of finance if it discriminates between different forms of finance. This paper abstracts from such influence.

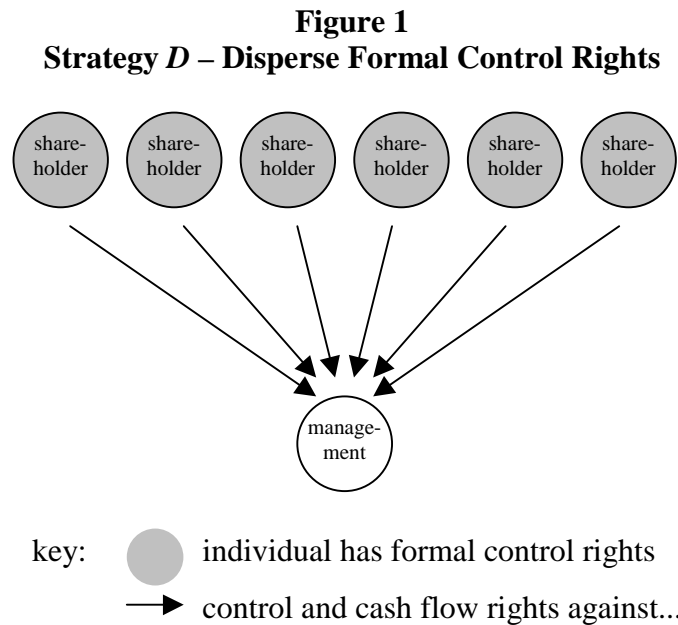
<sup>30</sup> See Franks and Mayer, *Ownership*, *supra* note 8.

<sup>31</sup> For a detailed overview, see La Porta, *et al.*, *Corporate Ownership*, *supra* note 7.

<sup>32</sup> See, *e.g.*, Franks and Mayer, *Corporate Ownership*, *supra* note 7, for empirical evidence and Lucian Arye Bebchuk, Reinier Kraakman, and George Triantis, *Stock Pyramids, Cross-Ownership, and Dual Class Equity: The Creation and Agency Costs of Separating Control from Cash Flow Rights*, NBER Working Paper 6951 (1999), for a theoretical analysis of these devices.

shareholders, whose control rights exceed cash flow rights. Thus, the most prominent distinction between outsider systems and insider systems is the different level of control concentration.

In outsider systems, control rights and cash flow rights are usually linked together (one-share-one-vote) – resulting in freely tradable dispersed control that lies with numerous *outside* investors. In the subsequent model, this form of corporate governance is referred to as strategy *D*, illustrated by Figure 1.



Corporate charters in insider systems usually employ devices to separate these rights – resulting in concentrated control that lies with *insiders* who hold controlling blocks of the equity.<sup>33</sup> This form of corporate governance will be referred to as strategy *C*, illustrated by Figure 2.

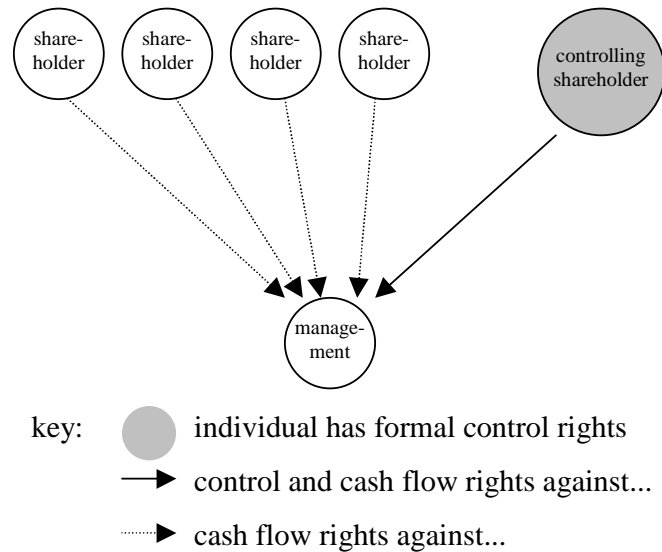
Typical representatives for *outsider systems* are the United States and the United Kingdom. Small diversified stakes are held by both individuals and portfolio-oriented institutional investors. The most cited examples for an *insider system* are countries of continental Europe like Germany, France, and Italy. There are various types of insider systems. In Germany, banks often exert control over corporations through equity holdings and proxy voting

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<sup>33</sup> See Erik Berglöf, *Corporate Governance* in: Benn Steil (ed.), *The European Equity Markets – The State of the Union and Agenda for the Millennium*, London: RIIA, 147-84 (1996).as well as M. Becht and A. Roell, *Blockholdings in Europe: an international comparison*, EUROPEAN ECONOMIC REVIEW, 43, 1049-1056 (1999).

mechanisms.<sup>34</sup> Family control can be found in many developing countries but also in Sweden and Italy.<sup>35</sup> The state still plays a significant role as a controller of enterprises in many transition economies but also in some advanced countries, like Austria.<sup>36</sup> The financial system of Japan could be regarded as a special case of an insider system. It is often referred to as the “keiretsu”-system consisting of a network of corporations with cross-holdings around a major bank.<sup>37</sup>

**Figure 2**  
**Strategy C – Concentrate Formal Control Rights**



### 2.1.3 Main Agency Problems

The level of concentration of formal control rights within the group of shareholders influences the importance of the different types of agency costs that arise from financial contracting.

With dispersed control (*D*), due to collective action problems, the *de-facto* exertion of the control rights of shareholders over the management becomes weak.<sup>38</sup> Thus, agency costs that arise between management and shareholders as a group are potentially high. On the other hand,

<sup>34</sup> See Theodor Baums, *Shareholder Representation and Proxy Voting in the European Union: A Comparative Study* in: Klaus J. Hopt *et al.* (Eds.), *Comparative Corporate Governance – The State of the Art and Emerging Research*, Oxford, Clarendon, 545-566 (1998) as well as Becht and Boehmer, *Ownership and Voting*, *supra* Table 1.

<sup>35</sup> See La-Porta, Lopez-de-Silanes, and Shleifer, *Corporate Ownership*, *supra* note 7.

<sup>36</sup> See *Id.*

<sup>37</sup> See Takeo Hoshi, *Japanese Corporate Governance as a System* in: Hopt, Klaus J. *et al.* (Eds.), *Comparative Corporate Governance*, *supra* note 34, 847-875.

<sup>38</sup> For a formal analysis of *de-facto* control (real authority) and formal control (formal authority), see Philippe Aghion and Jean Tirole, *Formal and Real Authority in Organizations*, *JOURNAL OF POLITICAL ECONOMY*, Vol. 105, No. 1, 1–29 (1997).

since all shareholders are non-controlling, there is low potential for one shareholder to exploit another. Thus, agency costs *within* the group of shareholders do not play an important role.

A move towards a higher concentration of formal control (*C*) among shareholders mitigates the problem of exerting control over management and the associated agency costs.<sup>39</sup> In the theoretical extreme case, the collective action problems would be solved entirely; *de-facto*-control would now lie with the controlling shareholder(s). This, however, creates agency costs between the controlling and non-controlling shareholders. In order to attract equity for her firm, the controlling shareholder has to and wants to promise to pay dividends. However, since outside investors are non-controlling, it is hard to establish a credible commitment.

From these differences, different institutional goals result. In firms with dispersed control (*D*), it is the primary goal of institutions to solve the collective action problems of shareholders and, thus, to increase the weak power of shareholders over the management. In firms with controlling shareholders (*C*), it is the goal of corporate governance to mitigate agency costs that arise between the controlling party and non-controlling shareholders.<sup>40</sup>

Without any institutional mitigation, dispersed control allocates *de-facto*-control to the management, whilst with concentrated control, *de-facto*-control rests with the controlling shareholder.<sup>41</sup> On first sight, one may consider the nature of agency costs between dispersed shareholders and management on one side, and between non-controlling shareholders and controlling shareholders on the other side, to be basically the same. If we compare the extreme case of a firm controlled by a shareholder, who holds minority cash-flow rights, with a “management-controlled” firm with dispersed ownership, the arising original agency problems (*i.e.*, agency costs without any institutional mitigation) seem to be the same. Neither the management nor the controlling owner do participate fully in the cash flows, whose generation they control. This gives rise to the “classical” exploitation of outsiders, highlighted by Jensen and Meckling.<sup>42</sup>

Yet, there is also a fundamental difference between the two different principal-agent relationships, namely the identity of the *de-facto*-controller. Exit is easier for a professional

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<sup>39</sup> See Berglöf, *Corporate Governance*, *supra* note 33, at 148)

<sup>40</sup> This difference may explain why comparative corporate governance is such a highly debated and controversial subject.

<sup>41</sup> Here, party with *de-facto* control is defined as the *agent* that acts on behalf of outside investors (*principals*) and has a high degree of discretion due to principal agent problems.

manager than for a controlling owner. Whilst a professional manager can seek a different post with comparable benefits from control, the market for control stakes is more rigid. A controlling shareholder who wants to exit has to find an investor who is willing to pay enough to compensate for both the foregone public and private benefits of her strategic control stake. Since the private benefits are highly specific, there are not many potential buyers. The differences in the nature of the *de-facto*-controller, as outlined in this section, induce different strategies to mitigate the associated agency costs.

## **2.2 The General Role of Institutions and Law**

### *2.2.1 Market Response*

The mere existence of agency costs that are associated with corporate finance does not call for legal intervention *per se*. As outlined in the previous section, the private institutions that make up corporate governance are a market response to the imbedded agency costs in corporate finance. As long as there is no market failure, the market itself produces institutions that provide the optimal third-best outcome under the given constraints. In such a case, legal intervention could only improve the result if legislators or regulators have the advantage of better information than the participants in the companies and financial markets themselves. In most cases, this is unlikely.

If, for example, in absence of regulation, all firms' boards of directors meet twice a year, the first assumption should be that this is the optimal institutional arrangement with respect to the frequency of the meeting under the given constraints. Legal intervention is only justified if there is some market failure to price the chosen arrangement. Trying to improve firm's performance by simply mandating the board of directors to meet more often might otherwise have negative effects on performance.

As mentioned before, the two corporate governance strategies described in section 2.1 are regarded as two possible market responses to the agency problems of corporate finance. Their feasibility and effectiveness depends on the state of the world. As will be argued in section 2.5.2, one important determinant is the liquidity of the capital market, which is itself influenced by the corporate governance strategies chosen by the firms and their shareholders.

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<sup>42</sup> See *supra* note 24.



### 2.2.2 Potential Market Failures

The answer to the question of whether or not the market for institutional innovation in the field of corporate governance works well depends on several conditions. The first crucial question is if investors are able to understand and price corporate governance institutions correctly. There might be some problems with trends and fashion in this field; *e.g.*, just like dot-com-companies at one time, it might sometimes also just be fashionable to have outside directors on the board. As a consequence, firms with outside directors would be overvalued. The same might be true with reluctance to invest in firms with controlling shareholders or vice versa. Bubbles might exist with the pricing of corporate governance institutions just as they do with the pricing of different industries or the economy as a whole.

However, all the presented arguments for mispricing are more similar to cyclical effects that will eventually correct themselves.<sup>43</sup> Many times, proponents of regulatory intervention into corporate governance who rely on the idea that investors are unable to understand and price institutional arrangements correctly point to the average investor and her rational disinterest to understand the institutions. Such arguments are yet constrained by the efficient market theory.<sup>44</sup> Financial markets are so competitive that it is sufficient if there are at least a few well-informed investors to come up with correct pricing of institutional arrangements. If a certain form of corporate governance is underestimated by most market participants, and thus under-priced, well-informed investors will keep investing in that company until the price reflects the true value of the institutional innovation. Such well-informed investors will be rewarded for their effort by the short-term capital gains until the share price reflects its true value. Thus, even uninformed investors can fairly well rely on a correct pricing of shares.

Another form of market failure is unanticipated rent seeking of *de-facto* controllers. Once outside investors are locked in, the *de-facto* controller has a high incentive to exploit existing shareholders of a corporation. This is particularly the case for controlling shareholders in firms with concentrated control, since there is no check via the market for corporate control.

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<sup>43</sup> Of course, one might argue that such cyclical deviations from the optimal institutions should be addressed by regulating them. However, an over-investment in outside directors, say, can be reversed at much less costs than an over investment in real assets due to business cycles.

<sup>44</sup> A detailed assessment of this theory can be found in Burton G. Malkiel, *A Random Walk Down Wall Street*, 5<sup>th</sup> ed., Norton Press, New York (1990).

Other market failures include externalities, adverse selection, public goods, signaling races, etc. Some weaker forms of market failure are coordination problems and transaction cost, *e.g.*, costs for gathering information about the corporation's corporate governance structure.

### 2.2.3 *Legislative Intervention*

The differences in the types of possible market failures provide the rationale for different types of legal intervention. The origin of a particular provision can vary between countries. They can result from mandatory law, self-regulation, or listing requirements of stock exchanges.

As long as the costs of the production of legislation is not too high, it always makes sense to have default rules, filling the gaps of contractual arrangements. As long as the default rules follow common practice, they can reduce costs of contracting, lower the cost of signaling what type of arrangements have been chosen, and provide focal points in the case of coordination problems.

Without failure on the market for corporate governance institutional innovation, there is no rationale for legislative intervention to go beyond enabling default rules. Only market failures, other than coordination problems and transaction costs, can justify mandatory rules. Accordingly, the following analysis concentrates on potential market failures regarding the two different strategies of corporate governance and their possible mandatory legal correctives.

## 2.3 **Dispersed Control: Market-Based Corporate Governance**

### 2.3.1 *Market Response – the Takeover Market*

In “management-controlled” firms of outsider systems, agency costs of are mainly mitigated through a market for corporate control.<sup>45</sup> The logic of this is as follows. If the management extracts too many private benefits (*e.g.*, through excessive empire building or leisure), the share price drops, and the company becomes a takeover target. In order to get control over the deficient firm, an acquirer has to buy the majority of both cash flow and control rights.<sup>46</sup>

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<sup>45</sup> See Oliver Hart, *Corporate Governance: Some Theory and Implications*, THE ECONOMIC JOURNAL, 105 (May), 678–89 (1995).

<sup>46</sup> This is, of course, only true if one-share-one-vote provisions are in place. However, if dispersed control is the corporate governance strategy chosen by a seller at an IPO, this seller has an incentive to provide for such a provision in order to maximize shareholder value, and thus the price that she can attain at the IPO, see Sanford Grossman and Oliver Hart, *One-share-one-vote and the Market for Corporate Control*, JOURNAL OF FINANCIAL ECONOMICS, 20, 175-202 (1988).

A takeover leads to a temporary concentration of both cash flow and control rights. After replacing the inefficient management, the acquirer might want to resell some of the cash flow rights because the concentration thereof comes with additional risk-bearing costs. If dispersed control is the more efficient form of corporate governance, he will receive the highest price if he eventually sells cash flow and control rights attached to each other. This means that if the environment is favorable to the strategy of dispersed control, even a takeover will eventually lead to dispersed control again.

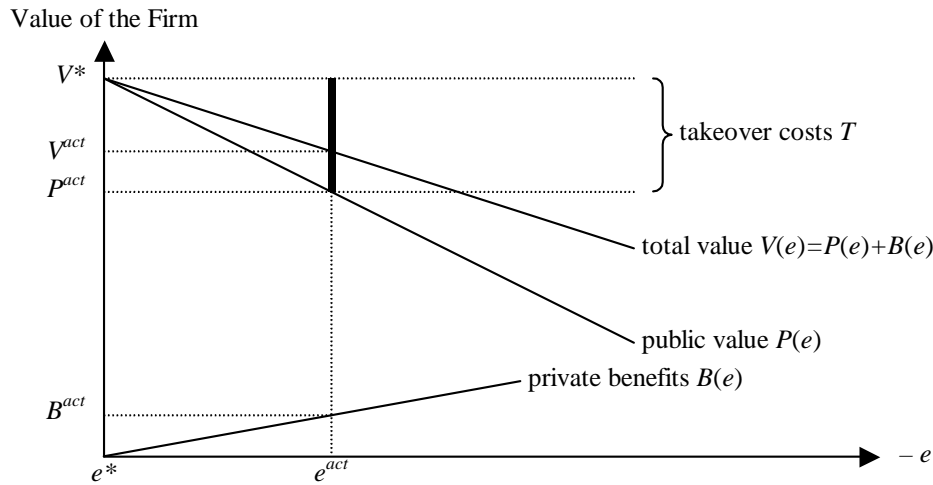
The takeover market functions as a threat to incumbent management because an acquirer does not have to compensate the inefficient management for the forgone private benefits but can take control by just paying the shareholder value of the firm. Of course, takeovers are not frictionless. They are in fact rather expensive because of the incurred transaction costs.<sup>47</sup> This decreases the incentives of a potential acquirer. The amount of slackness of management is determined by all these inefficiencies. In a world of homogenous expectations, management would exactly allow for inefficiencies to pursue private goals equal to the amount of the costs of a takeover that would have to be born by a potential acquirer. This way, they maximize their present private benefits without the threat of a takeover since a raider would not be able to make a profit.

This idea is illustrated by Figure 3. With takeover cost amounting to  $T$ , management will chose the inefficient effort level of  $e^{act}$  in order to maximize private benefits. Dispersed shareholders cannot ensure that management provides the efficient effort  $e^*$  due to their collective action problems. The lower effort of management lowers the public value of the firm from  $V^*$  to  $P^{act}$ . A potential acquirer would have to pay the price  $P^{act}$  to the shareholders in order to take over the firm. In addition, she would have to bear the takeover costs  $T$ . Thus, the potential raider cannot make a profit from the takeover. The management that exerts any effort level above  $e^{act}$  does not face a takeover threat. It has no incentive to work harder to get closer to the efficient level  $e^*$ .

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<sup>47</sup> *E.g.*, high premiums that have to be paid to incumbent shareholders due to their strategic hold out to capture the benefits of the takeover. Furthermore, a raider has to bear additional risk if she concentrates her wealth during the time of the takeover.

**Figure 3**  
**The Costs of a Takeover Determining the Agency Costs of Dispersed Control**



The resulting inefficiencies are the agency costs of the dispersed control strategy that remain even under the mitigating institutions of a takeover market. In the model in chapter 3, these costs will be referred to as the costs of capital of dispersed control ( $COC_D$ ). The above analysis shows that these costs depend on the takeover costs (denoted by  $T$  in Figure 3); the greater the costs of a takeover the greater  $COC_D$ .

Because of the importance of the takeover market, corporate governance institutions in firms with dispersed control act to enable such a market. One important provision is the allocation of formal control rights in proportion to cash-flow rights, *i.e.*, one-share-one-vote.<sup>48</sup> Another crucial prerequisite is a high standard of disclosure that allows shareholders to price their shares correctly and consequently augment the workings of the takeover market. It also enables potential raiders to detect possible inefficiencies due to inefficient management. Such inefficiencies constitute the gains that can be incurred with a takeover. A more accurate account of the state of the target firm also lowers the costs of a takeover that are produced by uncertainties faced by the raider.

### 2.3.2 Institutional Innovation

The strongest argument for a laissez-faire policy in the regulation of corporations is that at an IPO, an initial owner has an incentive to come up with the most efficient institutional

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<sup>48</sup> See Grossman and Hart, *One-share-one-vote*, *supra* note 46.

arrangements regarding the corporate charter. She has an incentive to set up efficient provisions via contractual arrangements in order to attract the highest price when going public.<sup>49</sup> Detrimental institutions, such as deviating from one-share-one-vote, will lower the share price.<sup>50</sup>

In this paper, however, it is assumed that there is a role for law to play. This is generally supported by a number of empirical research that shows that the “quality of law” influences the workings of capital markets in a positive way.<sup>51</sup> The assumption of the evolutionary model in chapter 3 is the existence of law that helps the functioning of corporate governance with dispersed control better than it helps the corporate governance strategy with concentrated control. Mandatory disclosure is one example. Here, again, believers in markets could argue that if investors were pricing the social net value of provided information correctly at an IPO, this would lead to a provision of the value maximizing amount of disclosure.

If management contractually commits to provide information about their future actions at an IPO, this decreases informational asymmetries and, thus, reduces resulting agency costs. The commitment narrows down the management’s strategy space. Hence, there is less room for inefficient shareholder exploitation. Some actions can simply not be chosen, anymore without revealing it to investors and potential acquirers.<sup>52</sup> This effect is a direct benefit to the value of the firm. It can, thus, be expected to have an effect on IPO prices.

Shareholders will reward such commitment in a charter at an IPO because it reduces agency costs. As has been mentioned before, the key here is the takeover market. If managers engage in inefficient behavior that is revealed through the disclosure regime prescribed by the

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<sup>49</sup> See, e.g., Frank H. Easterbrook and Daniel R. Fischel, *The Economic Structure of Corporate Law*, Cambridge, MA, Harvard University Press (1991), at 18–22.

<sup>50</sup> One interesting argument against the assumption that IPO’s produce efficient charters is the notion by Lucian Arye Bebchuk, *A Theory of the Evolution of Ownership Structures in Publicly Traded Companies*, Working Paper, Harvard Law School (1999), at 32. He shows that the shareholders that initially buy shares at an IPO have an incentive to set up takeover defenses that enable them to extract higher value from potential future acquirers. See also Easterbrook and Fischel, *The Economic Structure*, *supra* note 49, at 170–174. Other commentators argue that insider dealing has to be regulated. For an overview of the arguments, see Laura N. Beny, *A Comparative Empirical Investigation of Agency and Market Theories of Insider Trading*, Discussion Paper No. 264, John M Olin Center for Law, Economics, and Business, Harvard Law School (1999).

<sup>51</sup> See, e.g. the most influential works by La Porta, Lopez-de-Silanes, Shleifer, and Vishny, *Law and Finance* and *Legal Determinants*, both *supra* note 15. For recent work on insider trading regulation and disclosure, see Beny, *supra* note 50. An assessment for the development in transition economies can be found in Katharina Pistor, Martin Raiser, and Stanislaw Gelfer, *Law and finance in transition economies*, *ECONOMIES IN TRANSITION*, Vol. 8 (2), 325–368 (2000).

<sup>52</sup> Everything else that can be hidden from shareholders will, of course, still be done by management to exploit shareholders. However, with fewer possibilities, agency costs are less than without the disclosed information.

charter, investors become aware of this inefficient behavior and adjust their expected future cash flow accordingly. As a result, the share price drops, and the firm becomes a takeover target. Due to the disclosed information, also raiders can become aware of the inefficiencies and know that they can make a profit by acquiring the firm at the current discounted price, restructure it, and resell it. Since management anticipates this, it will abstain from the detrimental behavior in the first place.

Even if the initial owner at an IPO plans to remain the manager of the firm after going public, it is in his personal interest to use disclosure as a commitment device to abstain from inefficient behavior in the future. This is due to the fact that, by definition, the inefficient behavior yields fewer benefits to the management than it hurts outside investors.<sup>53</sup> If the initial owner can commit to not exploiting future outside investors, this is rewarded by the buyers of shares by an increase in the price that is greater than the foregone private benefits of the exploitation that cannot take place anymore.

It is important to note that disclosure can only function as a commitment device in the corporate governance strategy of dispersed control. If control remains concentrated with insiders, disclosing information to outsiders might make them unhappy and the price for outside shares drop. This does not, however, constitute a threat to the controller since she has a lock on control.<sup>54</sup> Thus, a commitment to provide disclosure is much less powerful as a device to mitigate agency costs of concentrated control than it is with dispersed control.

If capital markets are efficient and the agency costs mitigating effects of commitment to disclosure are priced correctly at an IPO, one could conclude that firms have an incentive to provide the amount of disclosure that maximizes its profits. If the amount of disclosure is denoted by  $x$  and the benefits<sup>55</sup> and costs of it are denoted by  $b(x)$  and  $c(x)$ , respectively, then we would

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<sup>53</sup> Otherwise, the behavior would be a Caldor-Hicks improvement.

<sup>54</sup> This is not to say that an insider might not have other motives for committing to provide information for signaling reasons. One is the resulting increased accuracy discussed in the next footnote. Another one might be the enhancement of signals that indicate that the controlling insider is of a good type. This will be discussed in section 2.4.1. However, the power of disclosure as a commitment device with a real threat leads to the assumption in the model in chapter 3 that disclosure has a greater mitigating effect on the agency costs that are associated with dispersed control than it has on agency costs that are associated with concentrated control.

<sup>55</sup> In accordance of the focus of this paper, I assume that these benefits stem solely from the mitigating effect of disclosure as a commitment. In fact, there is another benefit of disclosure, *i.e.*, increased accuracy regarding investors' assessment of the disclosing firms business. Increased accuracy resembles a reduction of the firm's "unsystematic" or "unique" risk. According to the standard Capital Asset Pricing Model or the more elaborated Arbitrage Pricing Model, this kind of risk should not influence the share price of the firm if investors are fully diversified because it can be completely diversified away, see Richard A. Brealey and Steward C. Myers,

expect firms to choose an amount of disclosure  $\hat{x}$  such that  $c'(\hat{x}) = b'(\hat{x})$ . Thus, on first sight, there is no reason to believe that firms could fail to provide the efficient amount of disclosure if we focus on the agency costs mitigating effect of it.

However, one aspect might prove this assessment immature. That is the fact that, also in this case, firms only take into account their private costs and benefits of disclosure and disregard externalities. The effects of this misalignment are discussed in the following section.<sup>56</sup>

### 2.3.3 Legislative Intervention – Mandatory Disclosure

When firms and their investors assess the cost  $c(x)$  of disclosure  $x$ , they take into account three different types of costs. The most obvious are the actual costs of processing the information, *i.e.* accounting, presentation of the data, distribution, etc. The second type of costs result from a more subtle mechanism. It is the disincentive to produce public goods, *i.e.*, if a firm has to disclose about activities that cannot be patented for protection after disclosure, it might want to abstain from these activities in the first place, because they are not profitable anymore. This abstention leads to losses that constitute the second type of costs. The third costs are profit shifts to competitors that can use the revealed information of the disclosing firm to attack its markets. If, for example, firms disclose about R&D activities, this gives valuable information to competitors

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*Principles of Corporate Finance*, 6<sup>th</sup> edition, Boston, Irwin McGraw-Hill (2000), at 167-179 & 205-206. Thus, the allocational benefit of disclosure does not appear to be a private benefit of the disclosing firm, because the reduced uncertainty does not induce an increase in firm value. It could be argued that this imperfect internalization calls for mandatory disclosure. However, there are also private incentives to provide information that increases the accuracy of the firm's assessment. The driving force here is the better firms' attempt to signal to investors that their offered investment opportunity is better than the average that can be expected if no firm discloses anything see Stephen A. Ross, *Disclosure Regulation in Financial Markets: Implications of Modern Finance Theory and Signaling Theory*, in Edwards, Franklin, *Issues in Financial Regulation*, New York, McGraw-Hill (1979). This effect can mitigate problems with regard to disclosure that is aimed to enhance investors' assessment of the firm. The reason for not including this kind of benefit of disclosure here is that it is a benefit that is valuable to both dispersed and concentrated control.

<sup>56</sup> The desirability of mandatory disclosure provisions has provoked a great variety of publications. For an overview, see Easterbrook and Fischel, *The Economic Structure*, *supra* note 49, at 290 as well Lucian Arye Bebchuk, *Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law*, 105 HARVARD LAW REVIEW, 1435–1510 (1992), at 1490. A detailed discussion is provided by John C. Coffee, *Market Failure and the Economic Case for Mandatory Disclosure*, 70 VIRGINIA LAW REVIEW, 717 (1984) as well Frank H. Easterbrook and Daniel R. Fischel, *Mandatory Disclosure and the Protection of Investors*, 70 VIRGINIA LAW REVIEW, 669 (1984). A recent critical view is introduced by Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 YALE LAW REVIEW, 2359 (1998). However, some of her arguments against mandatory disclosure are questioned by Merritt B. Fox, *Retaining Mandatory Securities Disclosure: Why Issuer Choice is not Investor Empowerment*, 85 VIRGINIA LAW REVIEW, October 1999, 1335–1419 (1999). The following section models explicitly the effects that result from the fact that private costs of disclosure exceed the social costs.

in the same industry. Even publishing separate accounts for a firm's different fields of activities yields information to competitors because it reveals profitable business lines.

The first two types of costs are both private and social costs. Actual resources are used to provide the information.<sup>57</sup> The third type of costs are solely private costs to the disclosing firm. They do not constitute social costs, because they only shift value from one firm to another. If one firm loses market share to another firm because it revealed valuable information, the one firm's loss is the other firm's gain.<sup>58</sup> The interfirm costs are a simple shift of value from the disclosing firm to its competitors due to information like profitability of different lines of business, R&D efforts, or planned business activities.

Thus, *even if* we assume that the allocational benefits of disclosure are completely internalized by perfect IPO pricing, we still face the problem that the decision about the efficient level of disclosure will not only be guided by its social costs but also by private interfirm costs.<sup>59</sup> The private advantage of business secrecy raises the single firm's value and is, thus, rewarded by its shareholders in advance, at an IPO. Since every firm decides to provide insufficient information, they end up in equilibrium with all firms providing a socially inefficient level of disclosure. This produces a lower value of *all* firms. This line of argument represents an N-players' prisoners' dilemma. Every firm providing the efficient amount of information is not a Nash equilibrium because it is in the interest of a single firm, to provide less than efficient information about its business plans. The following formal model illustrates this idea.

Since there is no natural unit to measure the amount of disclosure, it is assumed that  $x$  is measured by the social costs of producing the information.<sup>60</sup> Thus, the disclosure  $x$  is measured by the sum of the first two types of costs that are incurred with its production.

The resulting gross benefits to investors due to agency cost reduction shall be denoted by  $b(x)$ . It is assumed that  $b(x)$  is an increasing concave function in the relevant area.<sup>61</sup> Additional benefits for a firm arise from other firms' disclosures.

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<sup>57</sup> In case of the second type of costs, there are no actual resources used up but the abstention from certain activities also resembles social costs in form of relinquished gains.

<sup>58</sup> In fact, one might even argue that these perceived costs are, in fact, even social gains, because they increase competition. This effect is omitted in the following model and would only strengthen its results.

<sup>59</sup> This expression is borrowed from Fox, *supra* note 56, at 1345.

<sup>60</sup> These costs relate to the "operational cost" defined by Fox, *Id.* at 1345.

<sup>61</sup> Concavity seems to be an uncontroversial notion regarding  $b(x)$ . It presumes decreasing marginal benefits of disclosure.



Suppose there are only two identical firms 1 and 2 competing with each other. The net benefit  $BD_i$  of disclosure are calculated as follows:

$$(1) \quad \begin{aligned} BD_1 &= b(x_1) - x_1 + s(x_2) - s(x_1) \\ BD_2 &= b(x_2) - x_2 + s(x_1) - s(x_2) \end{aligned}$$

where  $x_i$  is the amount of disclosed information provided by firm  $i$ , measured by the social costs of its generation. The increasing function  $s(\cdot)$  represents the extent of interfirm profit shifts that occur from the disclosing firm to its competitor. In the formulation in (1), one sees that  $s(\cdot)$  does not represent any social costs. If, for example, firm 1 extends its disclosure  $x_1$  the losses that it incurs due to the increase in  $s(x_1)$  are exactly offset by the gains in firm 2.<sup>62</sup>

The optimal amount of disclosure would be derived from the maximization of the total net benefits  $BD_1 + BD_2$ , which leads to

$$(2) \quad x_i = x^*, \quad i = 1, 2, \quad \text{with } x^* \text{ determined by } b'(x^*) = 1$$

This is the standard optimum, which says that marginal benefits should equal marginal social costs.<sup>63</sup> However, maximization of the private gains as described by (1) yields as a condition for the privately optimal extent of disclosure  $\hat{x}$  for each firm  $i$ :

$$(3) \quad x_i = \hat{x}, \quad i = 1, 2, \quad \text{with } \hat{x} \text{ determined by } b'(\hat{x}) = 1 + s'(\hat{x}).$$

When deciding about the level of disclosure, firms<sup>64</sup> also take into account the additional marginal private costs  $s'(x)$ . Marginal benefits that arise from the other firm disclosing are not taken into consideration because these do not depend on the own choice of the level of disclosure.

Figure 4 provides an illustration of this result for the simple case of  $s(\cdot)$  being a homogenous linear function. Generally, since  $b'(\cdot)$  is a decreasing function and  $s'(\cdot) > 0$ , it follows that  $\hat{x} < x^*$ . Each firm provides less information than would be socially optimal. Since choosing  $\hat{x}$  is the dominant strategy for each firm, both firms face a prisoners' dilemma in continuous strategies.

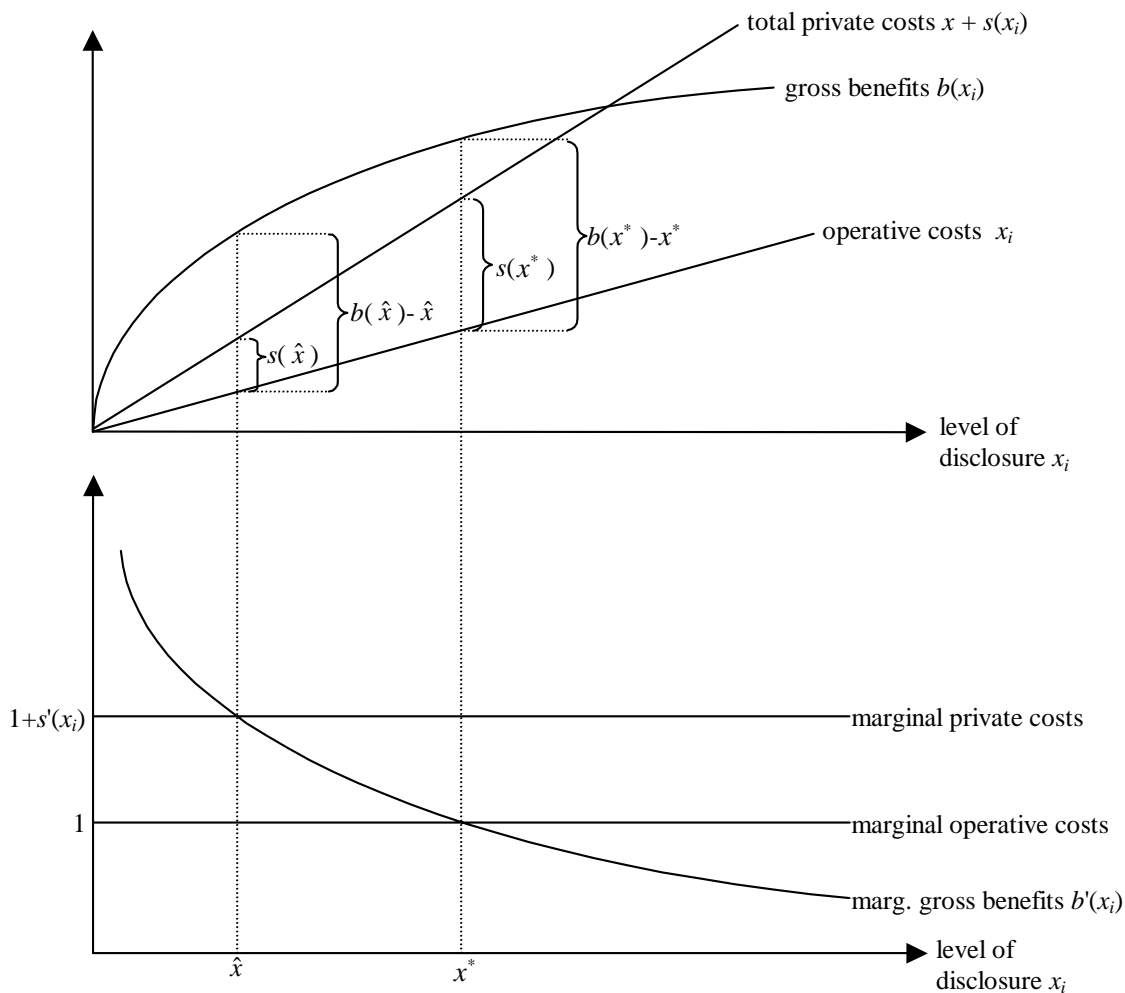
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<sup>62</sup> In other words, the total private costs  $c(x)$  of producing information  $x$  are  $c(x) = x + s(x)$ .

<sup>63</sup> Since the output is measured by its social costs, the marginal social costs are constantly 1.

<sup>64</sup> "Firms" here refers to the mutual interest of seller and buyers at the IPO.

**Figure 4**  
**Privately vs. Socially Optimal Disclosure**



For an illustration, the payoff of the Pareto optimal and the equilibrium strategies  $x^*$  and  $\hat{x}$  are depicted by Figure 5 with  $\Delta s$  defined as  $s(x^*) - s(\hat{x}) > 0$ . Although it would be beneficial for all firms to disclose the amount  $x^*$ , they end up in a Nash equilibrium disclosing the inefficient amount  $\hat{x}$ , instead.<sup>65</sup>

<sup>65</sup> Note that, with the assumptions above,  $b(\hat{x}) - \hat{x} + \Delta s > b(x^*) - x^*$  and  $b(\hat{x}) - \hat{x} > b(x^*) - x^* - \Delta s$ .

**Figure 5**

		Level of disclosure of firm 2	
		$x^*$	$\hat{x}$
Level of disclosure of firm 1	$x^*$	$\left( b(x^*) - x^*, b(x^*) - x^* \right)$	$\left( b(x^*) - x^* - \Delta s, b(\hat{x}) - \hat{x} + \Delta s \right)$
	$\hat{x}$	$\left( b(\hat{x}) - \hat{x} + \Delta s, b(x^*) - x^* - \Delta s \right)$	$\left( b(\hat{x}) - \hat{x}, b(\hat{x}) - \hat{x} \right)$

We can conclude that the result of institutional competition with regards to disclosure will lead to a level of disclosure that is too low.<sup>66</sup> Thus, mandatory disclosure regulation can play a role enhancing the working of the corporate governance strategy of dispersed control. Such regulation could demand a level of disclosure that is above the market outcome  $\hat{x}$  and closer to the efficient level  $x^*$ .

#### 2.3.4 Incorporation in the Evolutionary Model

Law that enables specifically the functioning of the corporate governance systems of dispersed control, like mandatory disclosure, will be denoted by  $r_D$  in the model of chapter 3. Of course, *e.g.*, the benefits from disclosure do not come without costs. Mandatory regulation always carries the danger of inflexible rigidities. These will be denoted by  $R_D$ . The efficient level of disclosure is likely to vary over industries, if not for every firm. Thus, even if the regulator deviates from a “one size fits all approach” it will probably not be able to achieve the exact  $x^*$  in every instance. Costs of inflexibility also arise from the fact that the efficient  $x^*$  will vary over time both due to changes in the information technology and changes in organizational and technological structures of firms.

As has been argued before, the benefits of disclosure as a commitment device are lower for firms with concentrated control. However, in order to be effective, a regulator cannot easily exempt these firms from the disclosure requirement because otherwise they would get a comparative advantage over firms with dispersed control and disclosure obligations. Exempted firms would benefit from the information that is revealed to them by the firms that have to

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<sup>66</sup> Additional arguments for this conclusion could be that additional social benefits arise from better information about the state of the economy for politicians and scholars. This argument is made by Fox, *supra* note 56. Increased competition has already been mentioned in footnote 58 on page 20.

disclose while being allowed to pursue business secrecy themselves.<sup>67</sup> Thus, the regulator cannot exempt firms with concentrated control from disclosure requirements if it does not want to disfavor firms with dispersed control.

If firms with concentrated control are not exempt from disclosure requirements, they also have to bear the involved costs even though they do not benefit from the regulation. In the model of chapter 3, it is assumed that the implied costs are equally high for both types of firms.

In this context, it is also important to note that the desirability of regulation does not necessarily call for regulation by the government. Firms can also solve the prisoners' dilemma by self-regulation because they have a cooperative interest in solving the dilemma. An association of all public firms would be able to internalize the external effects. Alternatively, also stock markets could play this role as long as they represented natural monopolies.<sup>68</sup>

## **2.4 Concentrated Control: Reputation-Based Corporate Governance**

### *2.4.1 Market Response – the Reputation Mechanism*

With concentrated control, the takeover market does not function as a disciplining device. If a controlling owner extracts excessive private benefits, a potential acquirer can only obtain control by buying the control stakes directly from the controller. The controller can always demand compensation for the foregone private benefits that come with the sale.<sup>69</sup>

It is, however, also in the controlling owners interest to reduce agency costs in order to get a high price for selling cash-flow rights.<sup>70</sup> In contrast to professional management, she can use different strategies to mitigate the agency costs that come with outside financing. Compared to

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<sup>67</sup> This might, in fact, even be a problem with private firms, which are usually not required to disclose much. However, one could argue that firms that operate in the same industry exhibiting large economies of scales are often all public firms, either with dispersed or concentrated control. Thus, it might be sufficient only to require all public firms to disclose in order to avoid the problem of favoring certain firms by the disclosure regime. That is not to say that this point might not be an interesting starting point for further research. *E.g.*, one could say that this effect might benefit private start-ups and enables them to compete with public firms even in industries with economies of scale.

<sup>68</sup> With the emergence of new telecommunication technologies, the natural monopolies of stock exchanges cease to exist, however. This might hamper the ability of a stock market to act as a self-regulation device. This can be seen, for example, by the effect that the competition of NASDAQ had on the listing requirements of the NYSE.

<sup>69</sup> This compensation takes the form of a voting premium that is paid when acquiring control blocks. Empirical research has quantified this premium to range from 5.4% in the US to 82% in Italy. An overview of these empirical findings is given by Jonathan R. Macey, *Institutional Investors and Monitoring: A Demand-Side Perspective in a Comparative View*, in: Klaus J. Hopt *et al.*, *Comparative Corporate Governance*, *supra* note 34, 904–19, at 910.

<sup>70</sup> Note that a reduction in agency costs always enhances efficiency and thus increases the benefits that can be distributed between the controller and the non-controllers.

professional management, controlling owners can uphold more credible commitments and build up reputation because of the specificity of their investment. A controlling owner will extract some benefits as compensation for her effort in keeping management in line. However, if the reputation mechanism is working, she will abstain from extracting excessive benefits in order to be able to attract new capital in the future.

The seminal contribution with regards to reputation games stems from Kreps and Wilson.<sup>71</sup> Their original model represents, however, an entry-deterrence game. A monopolist can uphold the reputation to be a strong monopolist by fighting entrants even if this causes short-term losses. As long as potential entrants put at least a small probability to the possibility that the monopolist might in fact be strong, it pays even for the weak monopolist to fight entrants in order to uphold the reputation for being a strong monopolist.

In this context, the controlling shareholder does not want to deter entrance but induce entrance by non-controlling shareholders, instead. Thus, the situation resembles an entry-inducement game. The payoff structure, that resembles the situation, is depicted by Figure 6.

**Figure 6**  
**Payoff Structure of Insider Corporate Governance**

		<b>Rational Insider</b>	
		Exploit	Not Exploit
<b>Outside Investor</b>	$(R_{\text{Outs}}, R_{\text{Ins}})$		
	Invest	$1-a, 1+a$	1, 1
	Not Invest	0, 0	0, 0

$a > 1$

The outside investor can either invest in a company that is controlled by an insider or not. If the outsider decides not to invest, the payoffs for both the insider and the outsider become zero (this is the normalized value of their outside options). If the insider invests, the payoff depends on whether the insider exploits the outsider or not. If he does not exploit the outsider, both end up with a payoff of one. The insider can, however increase his payoff by exploiting the outsider. This increments his payoff by  $a > 1$  while reducing the outsider's payoff to a level that is below his outside option (zero).

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<sup>71</sup> David M. Kreps and Robert Wilson, *Reputation and Imperfect Information*, JOURNAL OF ECONOMIC THEORY, Vol. 27, 253-279 (1982).

In a one-shot game, (*Not Invest*, *Exploit*) is the only Nash equilibrium because *Exploit* weakly dominates *Not Exploit*. This holds true for both a simultaneous game and a game where the insider chooses his strategy after the outsider. If, however, the insider moves first, he chooses *Not Exploit* in order to achieve the payoff 1 at the resulting equilibrium (*Invest*, *Not Exploit*).

Hence, it is in the insider's interest to commit to not exploiting the outsider. However, since in our context, the insider keeps control, such a commitment is not possible. Nevertheless, in a repeated situation, a controller has a credible incentive not to exploit outsiders in order not to damage her reputation. As in the model by Kreps and Wilson,<sup>72</sup> this is possible, as long as outsiders put at least a small probability to the possibility that the insider might in fact be an "honest" insider whose payoffs lead him to prefer not to exploit outsiders.

This result can be demonstrated in the following setting.

Imagine an outsider's investment in a company that is controlled by an insider as a game that is repeated  $N$  times. The outsider and the insider choose their strategies simultaneously according to Figure 6. It is common knowledge that the outsider's payoffs in each stage are as depicted in Figure 6. There is however incomplete information regarding the type of the insider. There are two different types of insiders. The payoffs of the "rational" type are as depicted in Figure 6. The payoffs of the "honest" type are such that the honest insider prefers not to exploit the outsider. Obviously, the insider knows her type. The outsider cannot observe the insider's type. He assesses the probability of the insider being honest as  $p$ . Accordingly, the estimated probability of the insider being rational is  $(1-p)$ . For simplification, it is assumed that both players do not discount their future payoffs. To simplify notations, let the stages of the game be counted backwards  $N, N-1, \dots, n, \dots, 2, 1$  with  $N$  being the first and 1 being the last game.

*Proposition:* In the Pareto dominant sequential equilibrium, the strategies of the outsider and the insider satisfy the following conditions.<sup>73</sup>

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<sup>72</sup> See *Id.*

<sup>73</sup> Kreps and Wilson prove for the general case that such an equilibrium must exist, see David M. Kreps and Robert Wilson, *Sequential Equilibria*, *ECONOMETRICA*, Vol. 50, Issue 4, 863-894 (1982a), Proposition 1 at 876. As in David M. Kreps, Paul Milgrom, John Roberts, and Robert Wilson, *Rational Cooperation in the Finitely Repeated Prisoners' Dilemma*, *JOURNAL OF ECONOMIC THEORY*, Vol. 27, 245-252 (1982), I abstain from explicitly analyzing the very complicated path of this equilibrium, once the critical endgame has been reached (*i.e.*, once the subsequent condition **II.** does not hold anymore) because it is completely irrelevant for the further analysis. Once, the endgame stage has been reached, this does not necessarily mean that the rational insider will immediately start to exploit and consequently, the outsider will abstain from further investment. Instead, there is an intermediate stage of the game where both players play mixed strategies until the implied random mechanism reveals that the insider is, in fact, rational. From then on, the outsider abstains from investment, see D. Fudenberg and D.K.

- The outsider invests in period  $n$  at least as long as
  - I.** the insider has always abstained from exploiting in the previous stages  $N, \dots, n$ , and
  - II.** it holds that  $p > \frac{a-1}{a-1+n}$ .
- The honest insider never exploits.
- The rational insider abstains from exploitation at least as long as  $p > \frac{a-1}{a+n}$ .

*Proof:* At any stage  $n$ , the strategy described above gives the outsider at least an expected overall payoff of  $p \cdot n + (1-p) \cdot (1-s)$ , which is greater than 0 as long as the condition in **II.** holds. With probability  $p$ , the insider is honest, which would generate an overall payoff of  $n$  times 1. With probability  $(1-p)$ , the insider is rational. In this case, it could be that she exploits the outsider. This would lead to a payoff of  $(1-s)$  in the respective period and a payoff of 0 in all subsequent periods. Not investing as long as **I.** and **II.** hold cannot be optimal for the outsider because he would forgo the benefits of  $p \cdot 1$  each time he abstains from investment. Investing after the insider has exploited is not rational either because by exploiting, the insider showed that he is of the rational type.<sup>74</sup>

It is trivial that an honest insider never exploits.

Knowing that the outsider invests in early periods (*i.e.*, periods, in which **II.** holds), at every stage  $n$ , the rational insider has to decide whether to exploit now or later. If she exploits immediately, she gets a payoff of  $1+s$  once and zero payoffs in the subsequent stages. As long as she abstains from exploitation she receives 1 in stage  $n$ . As long as condition **II.** also holds in the next period, she can still exploit the outsider then and receive additional  $1+s$  in the following round. Thus postponing exploitation always adds 1 to the overall payoff of the rational insider. Hence, she will postpone exploitation as long as possible. Without having to analyze the actual endgame, we can conclude that the insider will at least abstain from exploitation until one period before condition **II.** fails to hold. In every previous period, it pays the rational insider to postpone exploitation in order not to reveal her true identity as a rational insider. ■

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Levine, *Reputation and Equilibrium Selection in Games with a Patient Player*, *ECONOMETRICA*, 57, 759–778 (1989) as well as Youngse Kim, *Learning, Experimentation, and Equilibrium Selection in Games*, Doctoral Dissertation, University of California, Los Angeles (1992), chapter 2, for similar models. For a recent modeling of reputational effects in non-controlling equity finance, see also Armando Gomes, *Going Public without Governance: Managerial Reputation Effects*, *JOURNAL OF FINANCE*, Vol. LV, No. 2, April, 615–646 (2000).

<sup>74</sup> This is due to backward induction, see Reinhard Selten, *The Chain Store Paradox*, *THEORY AND DECISION*, Vol. 9, No. 2, 127–159 (1978).

The above analysis shows that even a rational insider has an incentive not to exploit outsiders in order to attract capital in the future. If we look at condition **II**. again, we see that the required probability of an insider being honest can be the smaller the smaller the extent of exploitation  $a$  and the longer the expected involvement of the insider, represented by  $n$ . These results can be applied to the context as follows:

- An insider can uphold the reputation of not exploiting outsiders. Such a reputational mechanism reduces the agency costs that are associated with the corporate governance strategy of concentrated control.
- The ability to uphold such a reputation is increasing in the duration of the relationship, *i.e.*, if the insider is locked in his investment it is easier to uphold the reputation of not exploiting outsider. Thus, the agency costs are smaller.
- The reputation mechanism is more stable if the possible exploitation by the insider is exogenously limited.<sup>75</sup>

#### 2.4.2 Institutional Innovation

In line with the results of the previous section, corporate governance institutions of concentrated control are designed to ensure that the insider cannot leave his investment easily. Systems of strategic cross-holdings and other devices increase the investments' specificity, and thereby ensure that the identity of the controller cannot be changed easily. Usually control is exerted by other patrons<sup>76</sup> of the firm like creditors, customers, or suppliers. Such a strategic mingling of interest reduces agency costs<sup>77</sup> that are associated with the other controller's functions, *e.g.*, giving credit. It also ensures credible signaling to outsiders that the controller has a long-term interest in the firm.<sup>78</sup> Since the concentration of cash-flow rights is costly due to risk bearing costs, this concentration is usually kept below the level of control concentration by departure from one-share-one-vote provisions. However, in order to keep a credible commitment, a controlling shareholder has to hold a fraction of cash flow rights that is greater than the risk

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<sup>75</sup> A forth conclusion, that is not followed in the proceedings, is the fact that a reputation based mechanism of corporate governance is more stable if there is a greater probability of insiders being honest. This would suggest that societies with strong social norms can uphold this system better then societies with weak social norms.

<sup>76</sup> The term "patron" refers to the terminology used by Hansmann describing all stakeholders who have interest in the firm like investors, creditors, suppliers, consumers, and employees, see Henry Hansmann, *The Ownership of Enterprise*, Cambridge, MA: Belknap Press of Harvard University Press (1996).

<sup>77</sup> This reduction in agency costs may compensate for some of the aggravation of agency costs between the controller and the non-controlling equity holders.



optimal fraction. This creates additional risk bearing costs that come with the corporate governance strategy of concentrated control (C).

At the initial public offering of non-controlling shares, a controller who wants to sell cash-flow rights has every incentive to provide for an optimal institutional setting to protect the non-controlling shareholders in order to receive the maximum price for the shares. However, once he has sold a large fraction of non-controlling cash flow rights to outside investors, this incentive diminishes. In subsequent equity raisings, the controller only faces a reduced incentive to provide for efficient institutions because he can externalize some of the forgone gains onto the existing outside investors.<sup>79</sup> Such bending of the corporate governance institutions is, in principle, also possible for the *de-facto* controlling management in firms with dispersed formal control.<sup>80</sup> For controlling owners, such post-contractual deviations from ex-ante commitments are easier, because they also have formal control.

The controlling shareholder has an incentive to commit to a long-term interest in the firm and to keeping institutions such that he cannot expropriate excessive private benefits. Law can support such commitments by making some important devices mandatory law. There are a great variety of provisions that might meet this end. Generally, making best practices of corporate governance into mandatory corporate law could in most cases be interpreted as an attempt of the legislator to foster commitments of controlling shareholders.

Two particular legal provisions of corporate law seem to be particularly suited for propitiation of insiders' commitment. These are preemptive rights and rights of shareholders regarding changes in the capital structure.

### 2.4.3 *Preemptive Rights*

One advantage of preemptive rights is the fact that, with these rights in place, the controller cannot extract money from minority shareholders by selling stock to herself for a discounted price, openly or through some agents of the controlling shareholder.<sup>81</sup> Obviously, the same effect

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<sup>78</sup> See Hoshi, *Japanese Corporate Governance*, *supra* note 37.

<sup>79</sup> For a detailed analysis of controllers' incentives to set institutional arrangements, see Lucian Arye Bebchuk, *A Rent-Protection Theory of Corporate Ownership and Control*, Discussion Paper No. 260, John M Olin Center for Law, Economics, and Business, Harvard Law School (1999).

<sup>80</sup> The greatest incentive here is the implementation of takeover defenses. For a recent discussion of this issue, see John C. Coates IV, *Explaining Variation in Takeover Defenses: Failure in the Corporate Law Market*, Discussion Paper No. 297, John M Olin Center for Law, Economics, and Business, Harvard Law School (2000).

<sup>81</sup> Since one inherent feature of concentrated control is inter-corporate crossholdings, it might be very hard to assess whether the acquirer of shares is acting as an agent of the controlling shareholder or not.

could be achieved by requiring that shares cannot be sold below the market. However, if the controlling shareholder sells discounted shares to herself, this also causes the market price of outstanding shares to drop. Hence, relying on this price as a benchmark might be misleading. Another remedy against controllers' exploitation would be the requirement of always offering shares publicly. This would, however, take away some auspicious distribution strategies of private placements of shares, which are particularly helpful when capital markets are not so liquid. These arguments are not to say that the alternative methods of alleviating potential exploitation possibilities are not working at all. It just states that, while preemptive rights also come with a great degree of inflexibility, it seems to be a very powerful tool to prevent this kind of mischievous behavior of the controlling shareholder.

Since preemptive rights come with inflexibility, making them completely mandatory might not be the best regulatory strategy. Instead, supermajority requirements to abandon the preemptive rights for particular equity raising seem appropriate. By holding more than 50% of the voting capital, controlling shareholders have full control over the firm. With a supermajority requirement of above 50% (say 75%), the controller can commit to not exploit outside shareholders by diluting shares without their approval.

While this reasoning explains why having supermajority requirements regarding waiving preemptive rights in the charter might be a good thing for concentrated control, it still does not explain why there could be a need for mandatory law. When going public a controlling shareholder could just write a charter with a supermajority requirement regarding preemptive rights and write in another section that this section can only be altered with unanimity.<sup>82</sup> This would, however, impose severe inflexibility on the corporate governance of the firm. It might be that in future conditions change such that it becomes favorable to change the corporate governance strategy to dispersed control. With such a strategy, it is better to lower the supermajority requirement.<sup>83</sup> Leaving it to an outside party (the legislator) to decide when such conditions have been reached would at least take away eternal inflexibility while even enhancing the commitment. Other arguments for mandatory law could be the reduction in signaling costs or

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<sup>82</sup> Anything less than unanimity would lead to suboptimal solutions because, as soon as the controller has sold some of the cash flow rights, he faces distorted incentives to keep the charter efficient. He might, thus, face an incentive to alter the charter before the threshold for the alteration of the crucial passage is reached. For the case of the majority requirement being 50%, see Bebchuk, *A Rent-Protection Theory*, *supra* note 79.

<sup>83</sup> It is also obvious that the charter cannot be a complete contract that takes into account all the possible changes of conditions that might call for such a change in strategy.

the substitution for bad IPO pricing failing to account for the preemptive right. Both of these arguments depend crucially on the efficiency of the capital market. They vanish if the market is completely efficient. One could argue that, if every firm pursues the strategy of concentrated control, capital markets are less likely to be efficient because they are less transparent and less liquid.

#### *2.4.4 Changes in the Capital Structure*

Giving minority shareholders the right to decide about capital increases by imposing supermajority requirements is a way to protect them against changes in the controlling structure. As argued before, reputation of the controller is a mechanism to ensure low agency costs of the corporate governance strategy of concentrated control. Thus, it is in the minority shareholders' interest to ensure that the control structure cannot be changed easily. We said that one way of committing to a long-term engagement in the controlled firm are specific private benefits that act as compensation for the exerted monitoring effort. They ensure that the controller has an incentive to keep a controlling state in the firm. Exiting by selling everything is difficult, because she would have to find another controller that can make use of the exact private benefits that go with controlling the firm.

One way to reduce the required blockholding without foregoing the specific private benefits of control is to share control with new blockholders and strike side agreements that ensure the use of the private benefit compensation that has been set up. The control structure can easily be changed by selling new shares to new blockholders. This might even be in the interest of the minority shareholders since some of the efficiency gains, due to further risk diversification, could be shared with them. However, since the identity of the controller is crucial for their reputational ability to keep agency costs low, it is beneficial to give minority shareholders the right to decide whether they are in accordance with the new control structure or not. Giving them power over changes in the capital structure is a powerful tool to increase their say in changes in the control structure.

Regarding the question whether the same outcome could also be achieved with contractual commitments at the IPO, the same arguments hold true in favor of mandatory systems in countries whose firms mainly operate corporate governance systems of concentrated control as with provisions regarding preemptive rights.

### 2.4.5 *Incorporation in the Evolutionary Model*

Provisions as supermajority requirements for preemptive rights or changes in the capital structure are represented in the third chapter's model by the variable  $r_C$ . Non-controlling outside investors can rely upon the law for protection, in case a situation arises that produces new possibilities for the controller to change institutional arrangements to her advantage. The ability of controllers to rely on mandatory laws as commitment devices reduces agency costs that are associated with concentrated control.

As with mandatory disclosure as a device to mitigate agency costs of dispersed control, introduction of mandatory rules  $r_C$  regarding preemptive rights or changes in the capital structure entails social costs of inflexibility, denoted by  $R_C$ . Even if in some firms, it is efficient to deviate from some rule, it is no longer possible. Again, resulting rigidity costs also have to be born also by firms that do not benefit from the provided regulation. The discussed examples of preemptive rights and changes in the capital structure are more severe problems in the corporate governance scheme of concentrated control than with dispersed control. However, the costs of inflexibility have to be born by firms with dispersed control, as well.

## 2.5 **Network Effects via Capital Markets**

### 2.5.1 *Influence of Corporate Governance on Capital Market Liquidity*

Concentrated control comprises of strategic investment into illiquid assets that provide specific utility for the controlling owner. The controlling owner has to buy some additional cash flow rights<sup>84</sup> from the non-controlling shareholders and lock them in to make her commitment credible. Such investments reduce capital market liquidity. Thus, *ceteris paribus*, firms' choice of corporate governance influences the liquidity of capital markets. If more firms choose dispersed control as their corporate governance strategy, liquidity increases. If more firms choose concentrated control as their corporate governance strategy, liquidity decreases

### 2.5.2 *The Influence of Capital Market Liquidity on Corporate Governance*

The functioning of the takeover market as an institution to mitigate agency cost in the outsider system relies on the liquidity of capital markets. Potential acquirers need to be able to raise capital easily. As efficient market theory tells us, liquid markets are also good producers of

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<sup>84</sup> "Additional cash flow rights" here means cash flow rights in addition to the smaller proportion of cash flow rights that would minimize risk in an optimal portfolio.

information. With appropriate disclosure provisions in place, this enables correct relative pricing of firms with below average performance, which can subsequently be taken over. Since the outsider system is a market-based system of control, its efficiency increases in size and liquidity of the market.

The influence of capital market liquidity on the costs of capital of concentrated control is more ambiguous. On the one hand, benefits from efficient, liquid capital markets with respect to a better generation of information also come with markets for non-controlling shares. This improves the price setting for non-controlling shares and provides controllers with better incentives to come up with good institutional arrangements to mitigate agency costs. In addition, the reputation of a controller can be maintained better if information about all her actions is distributed quickly and thoroughly.

On the other hand, increasing liquidity improves a controlling owner's exit option. Larger stakes can be sold without severe price drops. This makes commitment less credible. The controller could exploit outsiders and then sell as fast as possible her stake to outsiders. Obviously, the price of outsider shares will drop after the exploitation by the insider, because the exploitation reveals information about the type of the insider. However, this price drop does not influence the price that the insider would receive by selling her control stakes because the new buyers know that she will not control the firm anymore after the sale. The improved exit option that is caused by more liquid markets leads to the relationship-based corporate governance to become less stable.

Liquidity of the capital market also influences the risk-bearing component of the costs of capital with concentrated control if we assume that an increase in market size improves the ability to reduce risk through diversification. In order to uphold a credible commitment, a controlling shareholder usually has to hold a significant fraction of cash flow rights along with the control rights. As long as the controller is wealth constrained, this produces some additional risk bearing costs. An increase in capital market liquidity lowers the risk of an optimal investment portfolio because diversification opportunities increase. Consequently, *opportunity costs* of block holding increase in capital market liquidity.

A useful device for a blockholder to mitigate risk-bearing costs of block-holding is diversification *within* the controlled company. However, if capital markets turn liquid and

competitive, diversification becomes cheaper on an individual level than on a firm level.<sup>85</sup> This gives rise to a so-called *conglomerate discount*: minority shareholders are willing to pay less for a share of a diversified conglomerate company than for disintegrated parts of it.<sup>86</sup> With increasing liquidity in the capital market, diversification becomes cheaper on that market. Consequently, the conglomerate discount increases. Thus, the price of “over-diversification” as a device to mitigate risk bearing costs of controllers is the higher the more liquid the market.

### **3. Evolutionary Model**

#### **3.1 Intention of the Model**

The subsequent model illustrates the interference of corporate governance, capital markets, and legal regulation of corporate governance. The analysis is separated in two parts. After a the set-up, it is first shown how the interaction of corporate governance and capital markets produces network effects that lead to a persistent coordination of corporate governance strategies between firms. In this section, the influence of law is taken as exogenous. It is shown how different regulatory environments influence the stability of corporate governance equilibria. In the following section, legal intervention is endogenized. It is assumed that a public regarding legislator takes the corporate governance systems of firms as given and sets the law accordingly. This behavior increases the stability of the resulting financial systems.

#### **3.2 Setup**

##### *3.2.1 Players*

In the closed model economy, there are two different sets of players  $L$  and  $\{F_1, \dots, F_n\}$ .

The *first* (degenerated) set consists of only one benevolent legislator  $L$  who sets the law as described by section 3.2.3.

The players of the *second* set  $\{F_1, \dots, F_n\}$  represent a large fixed number  $n$  of similar firms. Each firm chooses its strategy of corporate governance as described by the following section. While a firm is a legal entity, in the world of this model, economically it only represents a nexus of contracts. Thus, it might be hard to see how a *firm* could be a player when it does not

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<sup>85</sup> This is due to the fact of lower transaction costs of portfolio adjustments, see Brealey and Myers, *Principles*, *supra* note 55, at 178.

<sup>86</sup> See *Id.* at 946.

have its own mind but is governed by a bunch of individuals. A justification and a description of *how* a firm “chooses” a strategy is described below in section 3.3.2.

### 3.2.2 *Strategies of Corporate Control*

Firms can “choose” between two different strategies  $S$  of corporate governance that are defined by their associated control structures.

$$(4) \quad S \in \{D, C\}$$

with  $D$ : disperse control (see Figure 1 on page 10)

$C$ : concentrate control (see Figure 2 on page 11)

The first strategy ( $D$ ) is to disperse formal control rights over the management of the firm among the shareholders by allocating control rights in proportion to cash flow rights through the implementation of one-share-one-vote provisions. When this strategy is chosen, costs of capital ( $COC_D$ ) are driven by the ability of the professional management to extract private benefits (see section 2.1.3).

The second strategy ( $C$ ) is to concentrate formal control rights over the firm’s management with one controlling shareholder while leaving the other shareholders non-controlling. This can be achieved by contractual deviations from one-share-one-vote, *e.g.*, by building up crossholdings. When this strategy is chosen, costs of capital ( $COC_C$ ) are driven by the ability of the controlling shareholder to extract excessive private benefits (see section 2.1.3).

The variable  $\delta \in [0,1]$  denotes the fraction of firms that is owned with dispersed control ( $D$ ). Correspondingly, a fraction  $(1-\delta)$  of firms exhibits concentrated control ( $C$ ). Since it is assumed that all firms are equal and can only “choose” between the two strategies of corporate governance, the behavior of *all* firms is fully described by  $\delta$ .

### 3.2.3 *Capital Markets*

In a first step, it is assumed that, in a closed economy,  $\delta$  fully determines and describes the extent of capital market liquidity  $\lambda$ . In accordance to the reasoning in section 2.5.1, the liquidity of capital markets  $\lambda$  is inversely dependent on the number of firms with concentrated control. As a first step, it is assumed that in a closed economy, *ceteris paribus*, capital market liquidity is fully determined by the fraction of firms with dispersed control  $\delta$ . This assumption will later be attenuated in the open economy model in section 4.3.

$$(5) \quad \lambda(\delta) \equiv \delta$$

The larger  $\delta$ , the smaller concentrated control, the greater is the liquidity of the capital markets.

As argued in section 2.5.2, it is assumed that the costs of capital ( $COC_D$ ) that are associated with dispersed control are a decreasing function of the market liquidity  $\lambda$  and, thus, decreasing in the number of users of the  $D$ -strategy ( $\delta$ ).

$$(6) \quad \frac{\partial COC_D(\lambda(\delta))}{\partial \delta} < 0$$

The discussion of the effects of increased capital market liquidity produced ambiguous results. However, since, in contrast to the case of dispersed control, with concentrated control increased liquidity also has aggravating effects on the costs of capital. Hence, it appears reasonable to assume that mitigating impact of capital market liquidity on the costs of capital is at least lower for the insider system (if not an aggravating one) than for the outsider system, which is the crucial assumption of the subsequent model.

$$(7) \quad \frac{\partial COC_C(\lambda(\delta))}{\partial \delta} > \frac{\partial COC_D(\lambda(\delta))}{\partial \delta} \quad \text{for all } \delta \in [0,1]$$

### 3.2.4 Legislative Strategies

In the model, the legislator can choose the relevant law  $\mathbf{L}$  from the following strategy set:

$$(8) \quad \mathbf{L} \in \{(r_D, r_C), r_D, r_C \in \{0,1\}\}$$

The variables  $r_D$  and  $r_C$  describe the degree of regulation in different legal fields. They can be interpreted as follows.

#### *Laws That Mitigate Costs of Capital of Dispersed Control ( $r_D$ )*

The variable  $r_D$  represents laws that solve failures in the market for institutional innovation with regards to provisions that mitigate the costs of capital of the corporate governance strategy of dispersed control. In section 2.3.3, it was suggested that the introduction of mandatory disclosure might is one of these legal devices that serve particularly firms with dispersed control. In this model,  $r_D = 1$  means that such legal provisions are in place. If the jurisdiction abstains from intervention in this field, this is represented by  $r_D = 0$ .

#### *Laws That Mitigate Costs of Capital of Concentrated Control ( $r_C$ )*

The variable  $r_C$  represents laws that solve failures in the market for institutional innovation with regards to provisions that mitigate the costs of capital of the corporate governance strategy of concentrated control. In section 2.4, it was suggested that the introduction of mandatory supermajority requirements regarding preemptive rights and changes in the capital structure are



two of these legal devices that serve particularly firms with concentrated control. In this model,  $r_C = 1$  means that such legal provisions are in place. If the jurisdiction abstains from intervention in this field, this is represented by  $r_C = 0$ .

This leaves the legislator with a choice between four possible legislative strategies. If we take the examples of disclosure requirements and preemptive rights, the legislator's choice can be described as presented by Table 3.

**Table 3**  
**Legislative Strategies L**

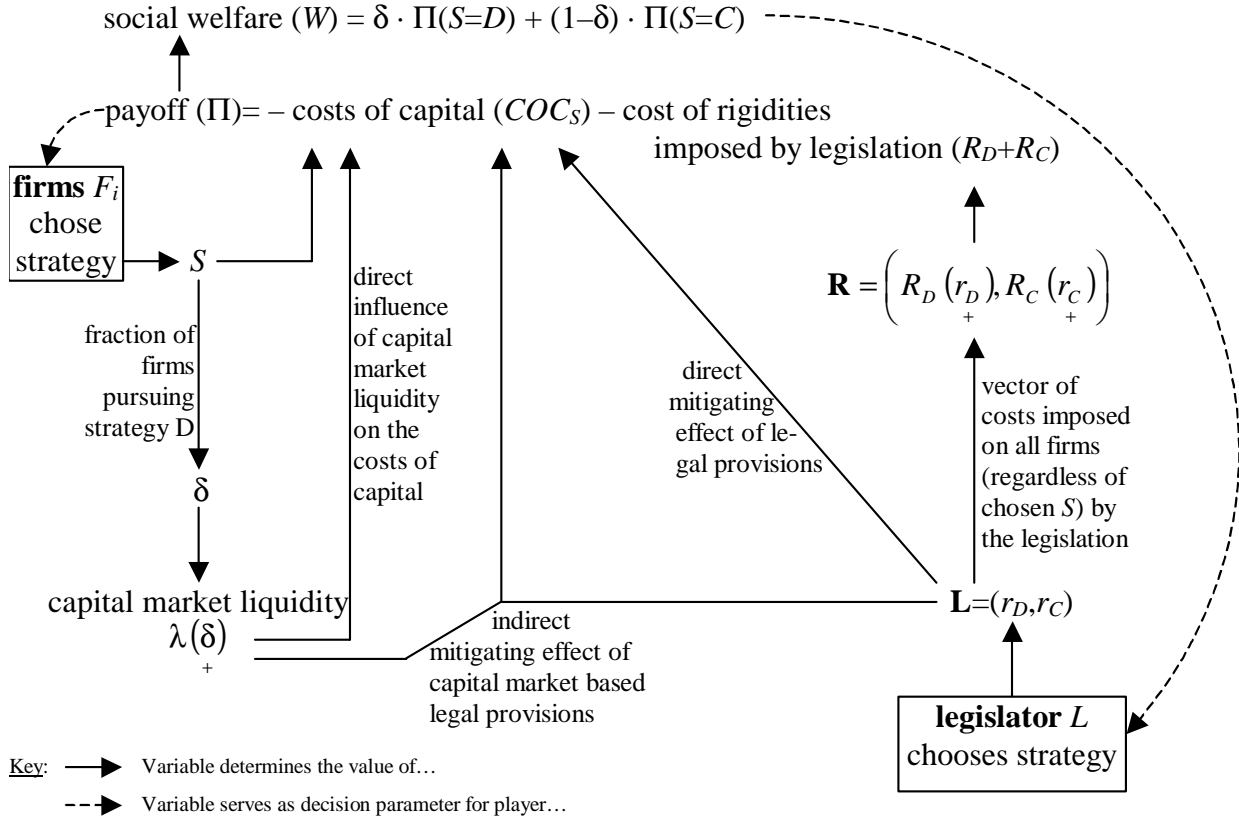
	$r_D = 1$	$r_D = 0$
$r_C = 1$	<b>L=(1,1):</b> strict on disclosure, strict on preemptive rights	<b>L=(0,1):</b> lax on disclosure, strict on preemptive rights
$r_C = 0$	<b>L=(1,0):</b> strict on disclosure, lax on preemptive rights	<b>L=(0,0):</b> lax on disclosure, lax on preemptive rights

### 3.2.5 Structure of the Model

The basic structure of the Model is illustrated by Figure 7. The firms'  $F_i$  decisions about the corporate governance strategy  $S$  are guided by the resulting payoff  $\Pi$ . The primary determinant of  $\Pi$  are the costs of capital ( $COC_S$ ) that are associated with the chosen corporate governance strategy  $S$ . Besides the chosen strategy itself, the  $COC_S$  are determined by the capital market liquidity  $\lambda$  and the legal provisions  $\mathbf{L}$  that are set by the legislator  $L$ . In the basic closed economy model, capital market liquidity  $\lambda$  is fully determined by the number of firms with dispersed control  $\delta$ .

The legal provisions also determine the second component of the firms' payoff  $\Pi$ . These are the costs  $R_D$  and/or  $R_C$  that have to be born by all firms due to the imposed rigidities that result from legislative provisions  $r_D$  or  $r_C$ , respectively, if in place. When deciding about these provisions, the legislator  $L$  is guided by a social welfare function that is derived from aggregation of the individual firms' payoff.

**Figure 7**  
**Structure of the Basic Model**



### 3.3 Corporate Governance

#### 3.3.1 Firms' Payoffs

A firm's payoff  $\Pi$  is the negative sum of the costs of capital  $COC_S$  and costs of imposed rigidities  $R_S$  when rules  $r_S$  are in place. Along the lines of the previous sections, the costs of capital  $COC_S$  of a firm depend on:

- the control strategy  $S \in \{D, C\}$  itself, chosen by  $F_i$ ,
- the law  $(r_D, r_C) \in \mathbb{B} \times \mathbb{B}$  that is provided by  $L$ ,
- capital market liquidity  $\lambda$ , which is determined by all firms' control structures, as described by  $\delta$ .

The choice of corporate governance, *i.e.*,  $D$  or  $C$ , determines by which cost-of-capital-function the costs of capital of the firm are governed. If a firm chooses strategy  $D$ , its costs of capital are  $COC_D$ , which is a function of capital market liquidity  $\lambda$  and the extent to which a mitigating legal device  $r_D$  is in place. If a firm chooses strategy  $C$  its costs of capital are  $COC_C$ ,

which is also a function of capital market liquidity  $\lambda$  and the extent to which a mitigating legal device  $r_C$  is in place. Regardless of the chosen strategy, all firms' payoff is also influenced by the rigidities that result from legal intervention. If the legislator sets  $r_D = 1$  (*i.e.* she introduces measures that mitigate costs of capital of dispersed control), this imposes rigidities of  $(1 \cdot R_D)$  on all firms. Similarly, an introduction of  $r_C = 1$  leads to additional costs of  $R_C$ . These assumptions are summarized by

$$(9) \quad \Pi(S, \lambda, r_D, r_C) := -COC_S(\lambda, r_S) - r_D R_D - r_C R_C, \quad S \in \{D, C\}; \lambda \in [0, 1]; r_D, r_C \in \{0, 1\}.$$

In this setting, it is assumed that the influences of the provisions of the law are separable, *i.e.*,  $r_D$  mitigates  $COC_D$  while leaving  $COC_C$  unaffected, and vice versa.<sup>87</sup>

### 3.3.2 Decision Process

Under a given legislative strategy  $\mathbf{L}$  and a given capital market liquidity  $\lambda$ , the costs of capital are determined by the private benefits that can be extracted by the *de-facto* controller of the firm, *i.e.* the management in case of  $S=D$  or the controlling shareholder in case of  $S=C$ .<sup>88</sup> These costs have to be born by all shareholders.<sup>89</sup>

The choice of player  $F_i$  in this model can be interpreted as the outcome of a non-cooperative mechanism. Switching between strategies is possible through a temporary, total concentration of cash flow and control rights. Instead of representing “a firm”, more realistically,  $F_i$  represents the one and only shareholder of the firm at the time when the strategy is actually chosen.

If, *e.g.*, for a given  $(r_D, r_C)$  and  $\lambda$ , dispersed control ( $D$ ) yields a higher payoff than concentrated control ( $C$ ), *i.e.*,  $\Pi(D, \lambda, r_D, r_C) > \Pi(C, \lambda, r_D, r_C)$ , a controlling shareholder has an incentive to change the control structure. She can buy 100% of the cash flow rights, change the charter, and subsequently sell cash flow rights *with* attached control rights with a profit.<sup>90</sup> Analogously, a firm with dispersed control can be transformed into a firm with concentrated

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<sup>87</sup> In fact, there might even be trade-offs between the ability of institutional arrangements to mitigate agency costs of corporate finance, see Hansmann and Kraakman, *The Basic Governance Structure*, *supra* note 17. Integrating such trade-offs into the model would even strengthen its results.

<sup>88</sup> See section 2.1.3.

<sup>89</sup> This means that part of the costs of inefficient extracting of private benefits has to be born by the controlling shareholder – if existent –, as well.

<sup>90</sup> Of course, this process is not frictionless. Non-controlling shareholders could try to hold out the controller by not selling their shares and waiting for the change in charter. This is discussed in Bebchuk and Roe, *A Theory of Path Dependence*, *supra* note 19, at 146.

control by means of a takeover. An acquirer can buy all voting shares and sell non-voting shares with a profit.

### 3.3.3 Cost of Capital

To keep the analysis simple, the following Cobb-Douglas-type specification of the COC-functions  $COC_S(\lambda, r_S)$  is chosen:

$$(10) \quad COC_S(\lambda, r_S) := A_S \cdot N_S^\lambda \cdot B_S^{r_S} \cdot M_S^{\lambda \cdot r_S} \quad \text{with } S \in \{D, C\}; \quad \lambda \in [0, 1]; \quad r_D, r_C \in \{0, 1\}$$

$A_S > 0$  denotes the “autonomous” extent of  $COC_S$ , if the law does not provide any mitigating measures and markets are illiquid, *i.e.*,  $r_S = 0$  and  $\lambda = 0$ . It is assumed that  $A_D > A_C$  because the free-rider problem of dispersed control is primarily mitigated by a market for corporate control.<sup>91</sup> If markets are illiquid, this market is not functioning well. In one application of the model, it is assumed that  $A_S$  is influenced by the overall quality of law.<sup>92</sup> Other sources of influence could be social norms, competition on the product or labor markets, *etc.*

The effects of capital market liquidity  $\lambda$  on  $COC_S$  is introduced by the factor  $N_S > 0$ .<sup>93</sup>  $N_S$  denotes the relative influence of maximum liquidity, *i.e.* when every firm has dispersed control ( $\lambda \equiv \delta = 1$ ). An increase in liquidity has a mitigating effect on  $COC_D$  because it improves the functioning of the takeover market. Thus,  $N_D < 1$  is assumed. In contrast to that, increasing liquidity improves a controlling owner's exit option. Larger stakes can be sold without severe price drops. This makes commitment less credible. The relationship based means to mitigate agency costs become less reliable.<sup>94</sup> Thus,  $COC_C$  might even be increasing in  $\lambda$ , *i.e.*,  $N_C > 1$ . Generally, it is assumed that  $N_C > N_D$ .

Provisions of the law can influence costs of capital  $COC_S$  in two ways.

First, they can mitigate  $COC$  directly. The relative benefits of the introduction of appropriate laws  $r_S$  on  $COC_S$  are denoted by  $B_S \in ]0, 1]$ .  $B_S$  represents a constant fraction of  $COC_S$  that remains after the introduction of appropriate measures  $r_S$  compared to  $COC_S$  without the regulation regardless of capital market liquidity.

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<sup>91</sup> See section 2.3.1.

<sup>92</sup> See section 4.1.

<sup>93</sup> This variable is called  $N$  because it represents a form of *network* effect. The number of players who choose a certain strategy affects the capital market liquidity. This, in turn, affects the payoff associated with the strategy choice.

<sup>94</sup> See section 2.4.1.

Second, provisions can improve market mechanisms of agency cost mitigation. Such provisions only function if  $\lambda > 0$ . The relative enhancement effect of such market-based provisions is denoted by  $M_S \in ]0,1]$ .  $M_S$  gives the fraction of remaining  $COC_S$  with  $\lambda = 1$  when appropriate measures  $r_S$  are in place.

In general, both  $B_S$  and  $M_S$  can vary between 1 (no mitigation) and close to zero (nearly complete mitigation). Provisions to mitigate  $COC_D$  like mandatory disclosure requirements are market-based and do not work if no other firm is using strategy  $D$ . Thus,  $B_D = 1$  and  $M_D < 1$  is assumed. The workings of provisions that mitigate agency costs of concentrated control, like mandatory provisions regarding the corporate charter, are independent of the strategy choice of all other firms and the resulting liquidity. Thus, it is assumed that  $B_C < 1$  and  $M_C = 1$ .

Despite the level of abstraction, the function in (10) satisfies some important requirements.  $\lambda \equiv \delta = 1$  only represents maximum liquidity for a given state of the *closed* economy if everybody chooses dispersed control. The opening up of financial markets or simple economic growth can produce even greater values for  $\lambda$ . However, greater liquidity only *mitigates* the agency costs of dispersed control (described by the term  $N_D \lambda$ ). It can never completely obliterate all agency costs. Thus, at least for great values of  $\lambda$ , one would expect diminishing returns in the effectiveness of liquidity-induced agency cost mitigation, asymptotically approaching zero agency costs for great values of  $\lambda$ .

It is furthermore realistic to assume an increasing detrimental effect of greater liquidity on the agency costs of concentrated control *if*  $N_C > 1$ . Relationship-based ways of corporate finance can probably endure small increases in  $\lambda$  very well, they might turn out to be unstable as soon as critical mass of liquidity is reached. Modeling the resulting costs of capital as a smooth decreasing, concave function can be regarded as an approximation.<sup>95</sup>

By taking logs, the expression (10) for  $COC_S$  can be simplified to:

$$(11) \quad coc_S(\lambda, r_S) = a_S + r_S b_S + (n_S + r_S m_S) \lambda, \quad S \in \{D, C\}$$

with

$$coc_S(\lambda, r_S) := \ln[COC_S(\lambda, r_S)], \quad a_S := \ln(A_S), \quad b_S := \ln(B_S), \quad n_S := \ln(N_S), \quad m_S := \ln(M_S)$$

---

<sup>95</sup> As established in section 2.5.2, this detrimental effect could also be outweighed by enhancing effects due to better information processing. In the model, this would refer to  $N_C < 1$ , with decreasing mitigating effects on the agency costs as with  $N_D$ .

The assumptions regarding the values of the parameters translate to:

$$(12) \quad a_D > a_C, \quad n_D < n_C, \quad b_D = 0, \quad m_D < 0, \quad b_C < 0, \quad m_C = 0.$$

### 3.3.4 Strategy Choice

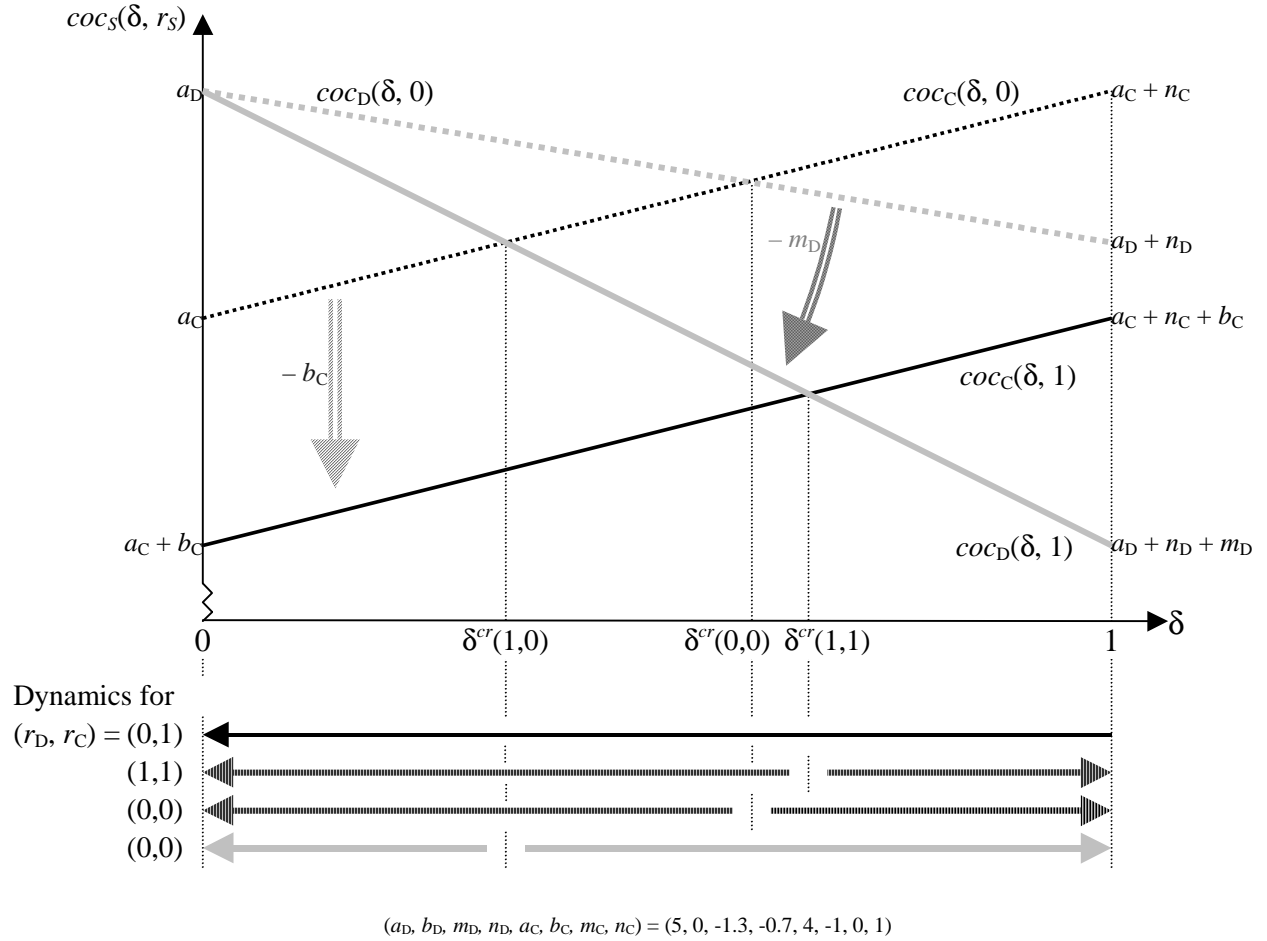
As we can see in equation (9) on page 40, shareholders cannot influence the rigidity costs of mandatory rules  $R_S$  by their choice of a strategy  $S$ . Thus, their strategy choice  $\tilde{S} \in \{D, C\}$  is only determined by minimizing cost of capital  $COC_S$  – or  $coc_S$  since  $\ln(\cdot)$  is a monotone function. With  $\delta \equiv \lambda$ , this choice is given by

$$(13) \quad \tilde{S} = \arg \min_S \{coc_S(\delta, r_S) \mid \delta, r_D, r_C\}, \quad S \in \{D, C\}$$

An example for the  $coc_S(\delta, r_S)$ -functions, determining shareholders' decision, is depicted by Figure 8. Due to the mitigating network effect for the capital costs of dispersed control ( $n_D < 0$ ),  $coc_D(\delta, 0)$  slopes downward. If, additionally, mitigating provisions are in place ( $r_D=1$ ), the negative slope is increased by  $-m_D$ . So  $coc_D(\delta, 1)$  is even steeper. For concentrated control, an aggravating effect of market liquidity on the associated costs is assumed ( $n_C > 0$ );  $coc_C(\delta, 0)$  slopes upward. The introduction of appropriate provisions ( $r_C=1$ ) mitigates  $coc_C$  by a constant  $-b_C$ .

As expressed by equation (13), firms choose to minimize costs of capital. Resulting dynamics depend on the law that is provided by the legislator  $\mathbf{L} \in (r_D, r_C)$ ,  $r_D, r_C \in \{0, 1\}$ . Whenever  $coc_D(\delta, r_D) > coc_C(\delta, r_C)$  for a given legislative strategy  $\mathbf{L}$ , firms  $F_i$  switch their control strategy from dispersed control  $D$  to concentrated control  $C$ , and consequently  $\delta$  drops. When  $coc_D(\delta, r_D) < coc_C(\delta, r_C)$ , shareholders switch their control strategy from concentrated control  $C$  to dispersed control  $D$ , and  $\delta$  rises.

**Figure 8**  
**Costs of Capital under Different Legal Regimes**



It is assumed that changing strategies is not a frictionless instantaneous process. It takes time. Thus, not all firms change their control structure at once. It is also assumed that each player  $F_i$  takes the state of the game as given when making her choice. Resulting dynamics depending on starting points and prevailing law-profiles  $(r_D, r_C)$  are depicted by the arrows below the graph. By equating  $coc_D(\delta, r_D)$  and  $coc_C(\delta, r_C)$  from (11), we can derive the critical  $\delta^{cr}(r_D, r_C)$ , where firms are indifferent between the two strategies under a given law-profile  $(r_D, r_C)$ :

$$(14) \quad \delta^{cr}(r_D, r_C) = \frac{a_D - a_C + r_D b_D - r_C b_C}{n_C - n_D + r_C m_C - r_D m_D}$$

Whenever  $\delta < \delta^{cr}(r_D, r_C)$ ,  $C$  is chosen. Whenever  $\delta > \delta^{cr}(r_D, r_C)$ ,  $D$  is chosen, formally:<sup>96</sup>

<sup>96</sup> In the following, the case of  $\delta = \delta^{cr}(r_D, r_C)$  is omitted in order to avoid complicated notations. It is assumed that this state does induce **no switch** of strategy.

$$(15) \quad \tilde{\delta}(r_D, r_C) = \begin{cases} C & \text{for } \delta < \delta^{cr}(r_D, r_C) \\ D & \text{for } \delta > \delta^{cr}(r_D, r_C) \end{cases}$$

### 3.3.5 Equilibria

The existence of different equilibria of corporate governance strategy depends on the values of the critical capital market liquidities  $\delta^{cr}(r_D, r_C)$ . If we introduce the assumptions (12) into equation (14), we can see that  $\delta^{cr}(r_D, r_C) > 0$  for all possible values of  $(r_D, r_C)$ . Thus, equation (15) tells us that everybody using  $C$  can always be an equilibrium for the firms' strategies under any law. If  $\delta=0$ , strategy  $C$  is pursued by all firms which induces  $\delta$  to stay zero.

For eligible values of  $a_D, a_C, n_C, n_D, m_D$ , and  $b_C$ ,  $\delta^{cr}(r_D, r_C)$  can be below 1 for all possible  $(r_D, r_C)$ . In such a case, at  $\delta=1$ , everybody would pursue strategy  $D$ , which would induce  $\delta$  to stay one. For  $\delta^{cr}(r_D, r_C) < 1$  there is also an internal equilibrium, where a fraction  $\delta^{cr}(r_D, r_C)$  of the players  $F_i$  pursue strategy  $D$  and  $1 - \delta^{cr}(r_D, r_C)$  of the players  $F_i$  pursue strategy  $C$ .<sup>97</sup>

Thus, each law profile  $(r_D, r_C)$  can potentially produce three different Nash equilibria regarding the chosen control strategy.<sup>98</sup> Two corner equilibria, where every firm plays the same strategy, and one internal equilibrium at  $\delta = \delta^{cr}(r_D, r_C)$ . Since every small invasion of mutants destabilizes the internal equilibrium, only the corner equilibria are evolutionary stable (ESS)<sup>99</sup>.

Both  $D$  and  $C$  can, thus, be evolutionary stable corporate governance strategies for  $\delta = 1$  and  $\delta = 0$  respectively as long as  $\delta^{cr}(r_D, r_C) < 1$ . When  $\delta^{cr}(r_D, r_C) \geq 1$ , the law is able to “force” control structure to be concentrated ( $C$ ) regardless of the starting point. In the depicted example of Figure 8, this is true for the law favoring concentrated control  $(r_D, r_C) = (0, 1)$ , which triggers  $\delta = 0$  regardless of the starting point. Two cases that can provide such an outcome will be explored in chapter 4:

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<sup>97</sup> For this internal equilibrium to exist, one has to assume that indifference induces agents to stay with their strategy, see *supra* note 96.

<sup>98</sup> Note that although the equilibria have been introduced by evolutionary reasoning, they also constitute Nash equilibria. *E.g.*, if all players play  $S=C$  there is no incentive for a player  $F_i$  to deviate from her choice.

<sup>99</sup> For an introduction into this concept, see, *e.g.*, G. Mailath, *Do People Play Nash Equilibrium? Lessons from Evolutionary Game Theory*, JOURNAL OF ECONOMIC LITERATURE, Vol. 36, No. 3 (September), 1347-1374 (1998).



1. Autonomous agency costs of dispersed control  $a_D$  are very high compared to the agency costs of concentrated control  $a_C$ . This could be the case when the overall quality of law is very weak.<sup>100</sup>
2. Autonomous network effects of dispersed control as described by  $-n_D$  are very weak. Since these network effects depend on the normalized variable  $\delta$ , this could be caused by the fact that the jurisdiction is a small closed economy.<sup>101</sup>

The relative locations of  $\delta^{cr}(r_D, r_C)$  depending on  $(r_D, r_C)$  can be derived by combining equation (14) with assumptions (12):

$$(16) \quad \delta^{cr}(1, 0) < \delta^{cr}(0, 0) < \delta^{cr}(0, 1) \quad \text{and} \quad \delta^{cr}(1, 0) < \delta^{cr}(1, 1) < \delta^{cr}(0, 1)$$

The stability of equilibria in evolutionary game theory is usually expressed by their basin of attraction.<sup>102</sup> In a corresponding static formulation, the stability of an equilibrium can be expressed by the critical mass of simultaneous deviations to upset it,  $\epsilon^{CR}$ .<sup>103</sup> In this context,  $\epsilon_S^{CR}(r_D, r_C)$  corresponds to the absolute difference between the  $\delta$  at the point where the strategy  $S$  is evolutionary stable and the critical  $\delta^{cr}(r_D, r_C)$ , where  $coc_D(\delta, r_D)$  and  $coc_C(\delta, r_C)$  intersect for a given law profile  $(r_D, r_C)$ :

$$(17) \quad \epsilon_D^{CR}(r_D, r_C) = \min\{1 - \delta^{cr}(r_D, r_C), 0\}, \quad \epsilon_C^{CR}(r_D, r_C) = \max\{\delta^{cr}(r_D, r_C), 1\}$$

With (16) this leads to

$$(18) \quad \epsilon_C^{CR}(1, 0) < \left\{ \begin{array}{l} \epsilon_C^{CR}(0, 0) \\ \epsilon_C^{CR}(1, 1) \end{array} \right\} < \epsilon_C^{CR}(0, 1) \quad \text{and} \quad \epsilon_D^{CR}(1, 0) > \left\{ \begin{array}{l} \epsilon_D^{CR}(0, 0) \\ \epsilon_D^{CR}(1, 1) \end{array} \right\} > \epsilon_D^{CR}(0, 1)$$

If law concentrates on the mitigation of agency costs of one particular form of equity financing, it makes that strategy more stable in equilibrium.

### 3.4 Legislation and Financial System

#### 3.4.1 The Legislator's Payoffs

When devising law, the legislator is assumed to attempt to maximize the utilitarian social welfare of the owners of firms at a given state (described by  $\delta$ ). If we insert  $\delta \equiv \lambda$  in equation (9) on page 39, utilitarian social welfare  $W$  can be computed as

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<sup>100</sup> See section 4.1.

<sup>101</sup> See section 4.3.

<sup>102</sup> See, e.g., Mailath, *Do People Play*, *supra* note 99.

<sup>103</sup> Ralf Peters, *Evolutionäre Stabilität in sozialen Modellen*, München, Acedo (1998).

$$(19) \quad W(\delta, r_D, r_C) = \delta(-COC_D(\delta, r_D) - r_D R_D - r_C R_C) + (1-\delta)(-COC_C(\delta, r_C) - r_D R_D - r_C R_C).$$

To see how firms' behavior influences the public regarding legislator, it is useful to define two variables regarding  $COC_S(\delta, r_S)$ .

$$(20) \quad OC_S(\delta) := COC_S(\delta, 0)$$

$OC_S(\delta)$  gives the amount of original agency costs of strategy  $S$  *without* mitigating provisions ( $r_S = 0$ ).

$$(21) \quad MC_S(\delta) := COC_S(\delta, 0) - COC_S(\delta, 1)$$

$MC_S(\delta)$  is the mitigating effect when  $r_S = 1$  is in place. This gives us:

$$(22) \quad COC_S(\delta, r_S) = OC_S(\delta) - r_S MC_S(\delta)$$

Of course, provisions can only be helpful if their benefits  $MC_S(\delta)$  through the mitigation of agency costs exceed the costs that are caused by the regulatory rigidities. For a provision  $r_S$  to be beneficial, it has to produce net gains for firms that choose the associated control structure  $S$ , at least if every other firm is using it, too. Hence, we can assume that

$$(23) \quad MC_C(0) > R_C \text{ and } MC_D(1) > R_D.$$

At  $\delta=0$  every firm is using the corporate governance strategy of concentrated control ( $C$ ). Minimal requirement criterion for  $r_C$  is that it produces net gains at least in this situation. The same has to hold true for  $\delta=1$  and the introduction of  $r_D$  when every firm is using strategy  $D$ .

### 3.4.2 Strategy Choice

By inserting expression (22), equation (19) can be rewritten as:

$$(19^*) \quad \begin{aligned} W(\delta, r_D, r_C) &= -\delta(OC_D(\delta) - r_D \cdot MC_D(\delta)) - (1-\delta)(OC_C(\delta) - r_C \cdot MC_C(\delta)) - r_D R_D - r_C R_C \\ &= -[\delta \cdot OC_D(\delta) + (1-\delta)OC_C(\delta)] + r_D [\delta \cdot MC_D(\delta) - R_D] + r_C [(1-\delta)MC_C(\delta) - R_C] \end{aligned}$$

Since the first bracket in the derived expression (19\*) does not include  $r_D$  or  $r_C$ , this term does not influence the legislator's strategy choice. She is not influenced by the actual level of agency costs but only by the potentials for their mitigation and associated costs.

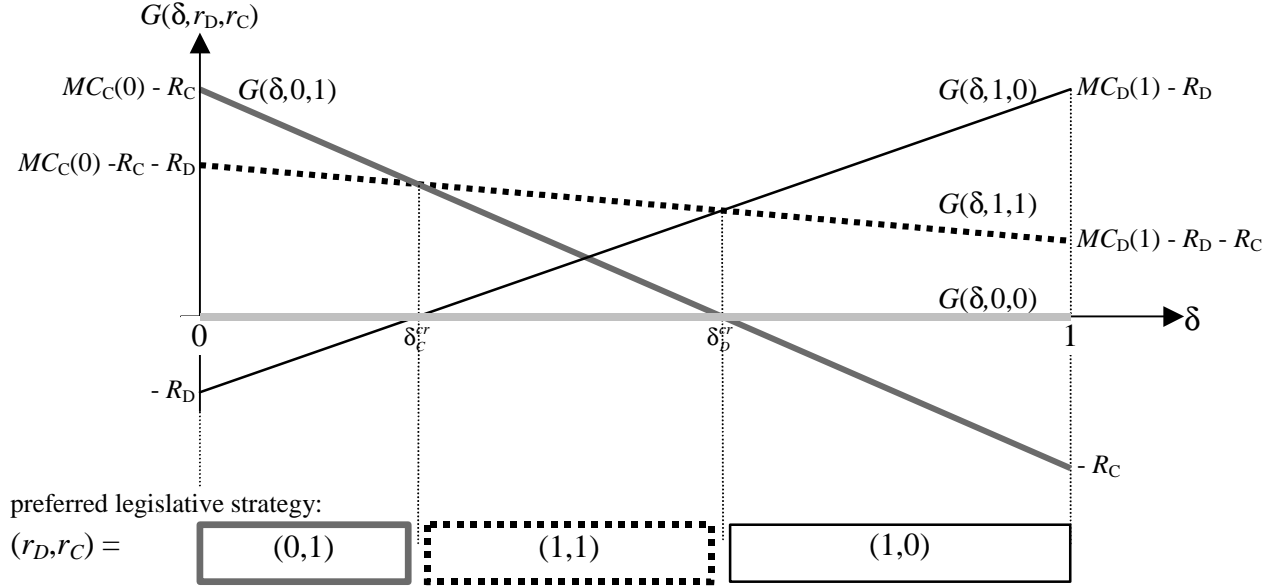
The legislator's choice  $(\tilde{r}_D, \tilde{r}_C)$  is governed by the following maximization:

$$(24) \quad (\tilde{r}_D, \tilde{r}_C) = \arg \max_{(r_D, r_C)} \{G(\delta, r_D, r_C) \mid \delta, r_D, r_C \in \{0,1\}\}$$

$$\text{with } G(\delta, r_D, r_C) := r_D [\delta \cdot MC_D(\delta) - R_D] + r_C [(1-\delta)MC_C(\delta) - R_C]$$

being the net effect of the legislator's interference.  $G(\delta, r_D, r_C)$  could be regarded as the outcome of a cost benefit analysis of the legislator. An example for the  $G(\delta, r_D, r_C)$  functions is represented by Figure 9 for the simple case of  $MC_S(\delta)$  being constants.<sup>104</sup>

**Figure 9**  
**The Efficacy of Legal Intervention Depending on Firms' Corporate Governance**



Regardless of the actual shape of  $MC_S(\delta)$ , three different legislative strategy choices can result from the maximization problem in (24). Depending on  $\delta$ , these are<sup>105</sup>:

- I) for  $0 \leq \delta < \delta_c^{cr}$  with  $\delta_c^{cr} := \{\delta \mid G(\delta, 0, 1) > 0 \wedge G(\delta, 1, 0) < 0\}$   
 $\Rightarrow (\tilde{r}_D, \tilde{r}_C) = (0, 1)$

In this case, many firms use the strategy of concentrated control. The legislator chooses the corresponding strategy of only imposing measures that mitigate agency costs of concentrated control.

<sup>104</sup> Note that due to its definition, it holds that  $G(\delta, 1, 1) = G(\delta, 1, 0) + G(\delta, 0, 1) \forall MC_S(\delta), \delta$  and  $G(\delta, 0, 0) = 0 \forall MC_S(\delta), \delta$ .

<sup>105</sup> Regarding the case of  $\delta = \delta_s^{cr}$ , see *supra* note 96.

$$\text{II) for } \delta_D^{cr} < \delta \leq 1 \text{ with } \delta_D^{cr} := \{ \delta \mid G(\delta, 1, 0) > 0 \wedge G(\delta, 0, 1) < 0 \}$$

$$\Rightarrow (\tilde{r}_D, \tilde{r}_C) = (1, 0)$$

In this case, many firms use the strategy of dispersed control. The legislator chooses the corresponding strategy of only imposing measures that mitigate agency costs of dispersed control.

What happens for intermediate values of  $\delta$  (i.e.,  $\delta_C^{cr} < \delta < \delta_D^{cr}$ ) depends on the actual shape of  $G(\delta, 1, 0)$  and  $G(\delta, 0, 1)$ . If an increase in  $\delta$  turns  $G(\delta, 1, 0)$  positive before it turns  $G(\delta, 0, 1)$  negative (as in Figure 9), both provisions produce positive net gains. The *introduction of both* measures maximizes  $G(\delta, r_D, r_C)$ . If however, a rise in  $\delta$  makes  $G(\delta, 1, 0)$  negative before  $G(\delta, 0, 1)$  turns positive, the *relaxation of both* provisions maximizes the legislator's utility:

$$\text{III) for } \delta_C^{cr} < \delta < \delta_D^{cr}$$

$$\Rightarrow (\tilde{r}_D, \tilde{r}_C) = \begin{cases} (1, 1) & \text{if } G(\delta, 1, 0) > 0 \wedge G(\delta, 0, 1) > 0 \\ (0, 0) & \text{if } G(\delta, 1, 0) < 0 \wedge G(\delta, 0, 1) < 0 \end{cases}$$

Note that as long as we assume  $G(\delta, 1, 0)$  and  $G(\delta, 0, 1)$  to be monotone functions of  $\delta$ , only one of the two sub-cases of case III can occur. Together with assumption (23) it also implies that  $0 < \delta_C^{cr} \leq \delta_D^{cr} < 1$ .

The results from this analysis can be summarized as follows. As soon as (almost) every investor chooses the same strategy of corporate governance, legislators always have an incentive to *concentrate* on the mitigation of the associated agency costs. Only if chosen strategies are sufficiently diverse, legislators deviate from this narrow approach. In such situations, lawmakers will either have both types of laws in place  $(\tilde{r}_0, \tilde{r}_1) = (1, 1)$ , or, if associated costs are high, deregulate with respect to both provisions  $(\tilde{r}_0, \tilde{r}_1) = (0, 0)$ . This result is driven by two assumptions that do not appear unrealistic. First, a change in law does not cause an immediate shift in the ownership structures. Second, legislators care about the immediate effect of their actions because they want to be reelected.

### 3.4.3 Financial System

Figure 10 finally combines the analysis of the previous section with strategy choices of the firms. On top of this figure, Figure 8 is repeated. On the bottom, Figure 9 is reproduced for the actual

specified  $COC_S$ -functions<sup>106</sup> and the values of the example of Figure 8 as well as  $R_D = R_C = 10$ . Vertical arrows in the middle of the graph indicate the legislator's strategy choice  $(\tilde{r}_D, \tilde{r}_C)$  depending on  $\delta$ . As long as  $a_D + n_D + m_D < a_C + n_C$ , there are always two evolutionary stable equilibria. Each starting point leads to one of these equilibria.

One of these equilibria is at  $\delta = 0$  with  $(r_D, r_C) = (0,1)$ . Every firm is choosing concentrated control and the legislator provides law that specializes in mitigating associated agency costs. This equilibrium is interpreted as the *insider system*.

The other equilibrium is at  $\delta = 1$  with  $(r_D, r_C) = (1,0)$ . Every firm is choosing dispersed control and the legislator provides law that specializes in mitigating associated agency costs. This equilibrium is interpreted as the *outsider system*.

The fact that the system always converges towards one end is due to condition (16). If a disturbance moves  $\delta$  to a value  $\delta'$  between  $\delta_C^{cr}$  and  $\delta_D^{cr}$ , the legislator will set the law at  $(r_D, r_C) = (1, 1)$ .<sup>107</sup> Because of  $n_D < n_C$  the system will still either move towards  $\delta = 0$  or  $\delta = 1$ .

According to (15), if  $\delta' < \delta_C^{cr}(1,1)$ , firms pursue strategy  $C$  and  $\delta$  diminishes. Once  $\delta_C^{cr}$  is reached, the legislator omits the dispensable provision  $r_D$ . Due to condition (16), the now relevant  $\delta^{cr}(0,1)$  is even greater than the previous  $\delta^{cr}(1,1)$ . Thus, the actual  $\delta$  will definitely be smaller than  $\delta^{cr}(0,1)$ . Firms keep pursuing strategy  $C$  until, eventually, every firm uses that strategy at  $\delta=0$ .

If  $\delta' > \delta_D^{cr}(1,1)$ , firms pursue strategy  $D$  and  $\delta$  increases. Once  $\delta_D^{cr}$  is reached, the legislator omits the dispensable provision  $r_C$ . Due to condition (16), the now relevant  $\delta^{cr}(1,0)$  is even smaller than the previous  $\delta^{cr}(1,1)$ . Thus, the actual  $\delta$  will definitely be greater than  $\delta^{cr}(1,0)$ . Firms keep pursuing strategy  $D$  until, eventually, every firm uses that strategy at  $\delta=1$ .

Finally, one of the two financial systems will be reached. Both processes are illustrated by the thick arrows in the center of Figure 10.

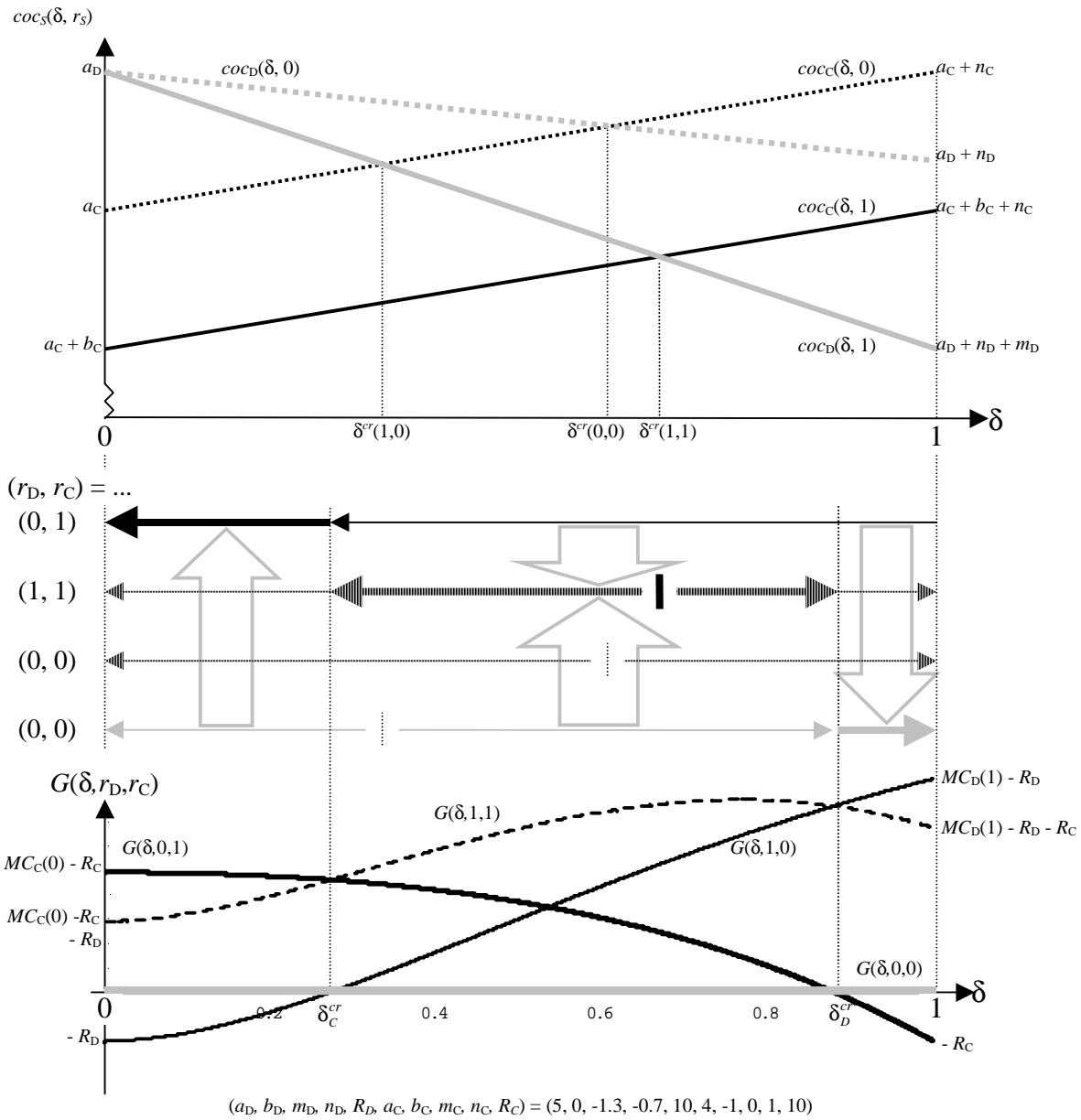
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<sup>106</sup> Inserting (10) into (24) using definition (21) and  $\lambda \equiv \delta$  yields

$$G(\delta, r_D, r_C) = r_D \left( \delta \cdot A_D \cdot N_D \cdot \delta \cdot \left( 1 - B_D \cdot M_D \cdot \delta \right) - R_D \right) + r_C \left( (1 - \delta) \cdot A_C \cdot N_C \cdot \delta \cdot \left( 1 - B_C \cdot M_C \cdot \delta \right) - R_C \right)$$

<sup>107</sup> Analogously, if the associated costs of the provisions are relatively high, the legislator will set the law at  $(r_D, r_C) = (0,0)$  (see section 3.4.2). The subsequent arguments hold for  $\delta' < \delta^{cr}(0,0)$  and a later introduction of the beneficial provision, once  $\delta_C^{cr}$  or  $\delta_D^{cr}$  is reached.

**Figure 10**  
**The Evolution of Financial Systems**



This explains why economies can exhibit a different financial system if, *e.g.*, they started into industrialization under different conditions. It also illustrates that the network effects of corporate governance systems are even enforced by the attempt of legislators to support their firms in their pursuit of corporate governance. The complementarity between law and corporate governance structure makes the systems even more stable. This leads to a persistence of the two corporate governance systems even if one of them is more efficient. Even if all other conditions in the countries (industries, labor market, quality of law, etc.) are completely the same today, they could still exhibit a persistent difference in their financial system.

It is also shown that both systems could even be equally effective although they are different. This is a feature of this model that is in sharp contrast to theories of corporate governance like the legal theory by La Porta *et al.* Their theory predicts that insider systems must be clearly less efficient than outsider system. This is due to the fact that they explain the existence of the insider system by the deterring exogenous effect of a bad legal history. Consequently, in their framework, it is hard to explain why firms from countries like France have been able to compete on the product market with firms from countries like the United States.<sup>108</sup>

In contrast to the legal theory, the model forwarded here, does allow for different but equally effective financial systems. In fact, this case is depicted by Figure 10. The value of  $coc_C(\delta,1)$  at  $\delta=0$  is equal to the  $coc_D(\delta,1)$  at  $\delta=1$ . These two points are the relevant costs of capital of all firms operating under the insider system or the outsider system, respectively. Together with the assumed equal  $R_S$ , this implies that, despite their differences, both systems happen to be equally effective.

### 3.5 Empirical Relevance

The analysis above explains why different financial systems can persist for a long time even if their firms compete on the product markets. The result even holds for partial competition on financial markets, as long as the capital markets are not fully integrated. Partial competition without full integration here refers to a state where arbitrage in differences in rates of return is possible but other features of full integration like cross border takeovers are not.

One prediction of the model is that laws should differ between jurisdictions with different corporate governance structures. Countries with firms mainly operating a corporate governance system of dispersed control should exhibit strong mandatory regulations in fields that display failures in the market for institutional innovation or provisions that mitigate agency costs of dispersed control. One example of these provisions is mandatory disclosure regulation. Countries with firms mainly operating a corporate governance system of concentrated control should exhibit strong mandatory regulations in fields that display failures in the market for institutional

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<sup>108</sup>They are, of course, aware of this shortcoming and conclude that “France and Belgium, after all, are both very rich countries.” See La Porta, Lopez-de-Silanes, Shleifer, and Vishny, *Law and Finance*, *supra* note 15, at 1152.

innovation of provisions that mitigate agency costs of concentrated control. Examples of these are mandatory regulations regarding preemptive rights and changes in the capital structure.<sup>109</sup>

It is important to note that the presented model does not claim that one should not observe any legal convergence. All rules that produce positive net gains for both dispersed and concentrated control strategies should, in fact, be subject to convergence pressure. In addition, with full integration of capital markets including the market for corporate control, we might observe a quantum jump towards the outsider system. This will be explored further down in section 4.3.

Table 4 gives some first suggestive support for the theories of the previous section. Countries are arranged according to an index of ownership concentration. This index is the unweighted average of the two alternative measures of ownership concentration that are given in the first two columns. The following columns describe the countries' approach with regards to some selected legal provisions that have been identified in the previous sections as serving particularly one specific strategy of corporate governance. The accounting standard rating is used as a proxy for the countries' disclosure requirements. As we can see, countries with concentrated ownership, have provisions that are serving this sort of corporate governance but have weak disclosure standards. The opposite is true for countries with dispersed ownership.

On the right hand side of the table, there are also two variables describing the capital market in the respective countries. As we can expect, capital markets are bigger in countries with dispersed ownership than with concentrated ownership. The same holds for the markets' M&A activities.

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<sup>109</sup> Another interesting example of legal intervention to ensure long-term commitments of controlling owners, which is not included in this section, is the influence of German tax law. Under the prevailing law, a huge tax loss would arise if companies like banks or insurance companies were to sell their large corporate holdings. Thus, they are locked in as controllers of these firms. Interestingly, as the continental European capital markets turn to be more and more Anglo-Saxon, the corresponding provisions are going to be abolished.

Also ignored is the interesting fact that in some jurisdictions with an *insider system*, the legal understanding of corporate governance even includes the mitigation of agency costs between the shareholders and other stakeholders. For example, whilst in the UK, the board is supposed to serve shareholders' interest, in Germany, it is the board's purpose to serve the "general interest" of the company, taking all stakeholders into account, see Arndt Stengel, *Directors' Powers and Shareholders: A Comparison of Systems*, INTERNATIONAL COMPANY AND COMMERCIAL LAW REVIEW, Vol. 9, No. 2, 49–56, (1998) p. 51. Such alternative notions of corporate governance, which put more emphasis on different groups of stakeholders exerting control over the company cooperatively, are more and more vanishing during the last 15 years, see Henry Hansmann and Reinier Kraakman, *The End of History for Corporate Law*, Discussion Paper No. 280, John M Olin Center for Law, Economics, and Business, Harvard Law School (2000).



**Table 4**  
**Legal and Financial Differences in 17 Wealthy Countries**

Country	Legal Family*	Ownership Concentration			Legal Differences			Capital Markets	
		Median Ownership by 3 largest shareholders in 10 largest firms	Percentage of closely held medium firms	Index of ownership concentration	Preemptive Rights – Material Examination by courts	Authorized Cap Super-Majority requirement	Accounting standards rating	Market capitalization over GDP	M&A Activity
US	e	0.12	0.5	0	0	0	71	114	23.73
Canada	e	0.24	0.6	0.22	0	0	74	86	23.99
Ireland	e	0.36	0.5	0.24	0	0	N/A	49	17.75
Japan	g	0.13	0.8	0.31	0	0	65	66	0.48
UK	e	0.15	0.9	0.43	0	0	78	142	32.52
Switzerland	g	0.48	0.6	0.46	1	1	68	136	18.82
Sweden	s	0.28	0.9	0.56	0	0	83	95	22.93
Netherlands	f	0.31	0.9	0.59	0	0	64	95	17.78
Norway	s	0.31	0.9	0.59	0	1	74	36	24.71
France	f	0.24	1	0.62	1	1	69	38	10.11
Finland	s	0.34	1	0.72	0	1	77	49	25.39
Germany	g	0.5	0.9	0.78	1	1	62	28	9.03
Denmark	s	0.4	1	0.78	0	1	62	41	16.78
Spain	f	0.5	1	0.88	1	1	64	33	4.13
Austria	g	0.51	1	0.89	1	1	54	15	7.46
Belgium	f	0.62	0.9	0.9	1	1	61	44	8.89
Italy	f	0.6	1	0.98	1	1	62	21	4.08

Note: \* e = English, g = German, s = Scandinavian, f = French

Sources: La Porta, Lopez-de-Silanes, Shleifer, and Vishny, *Law and Finance and Legal Determinants*, supra note 15, La Porta, Lopez-de-Silanes, and Shleifer, *Corporate Ownership*, supra note 7, Eddy Wymeersch, *Das Bezugsrecht der alten Aktionäre in der Europäischen Gemeinschaft: eine rechtsvergleichende Untersuchung*, DIE AKTIENGESELLSCHAFT, No. 8 (1998), Julian Maitland-Walker, *Guide to European company laws*, 2<sup>nd</sup> ed., London, Sweet & Maxwell (1997), Marco Pagano and Paolo Volpin, *The Political Economy of Corporate Governance*, CSEF Working Paper No. 24 (2000), Commercial Codes.

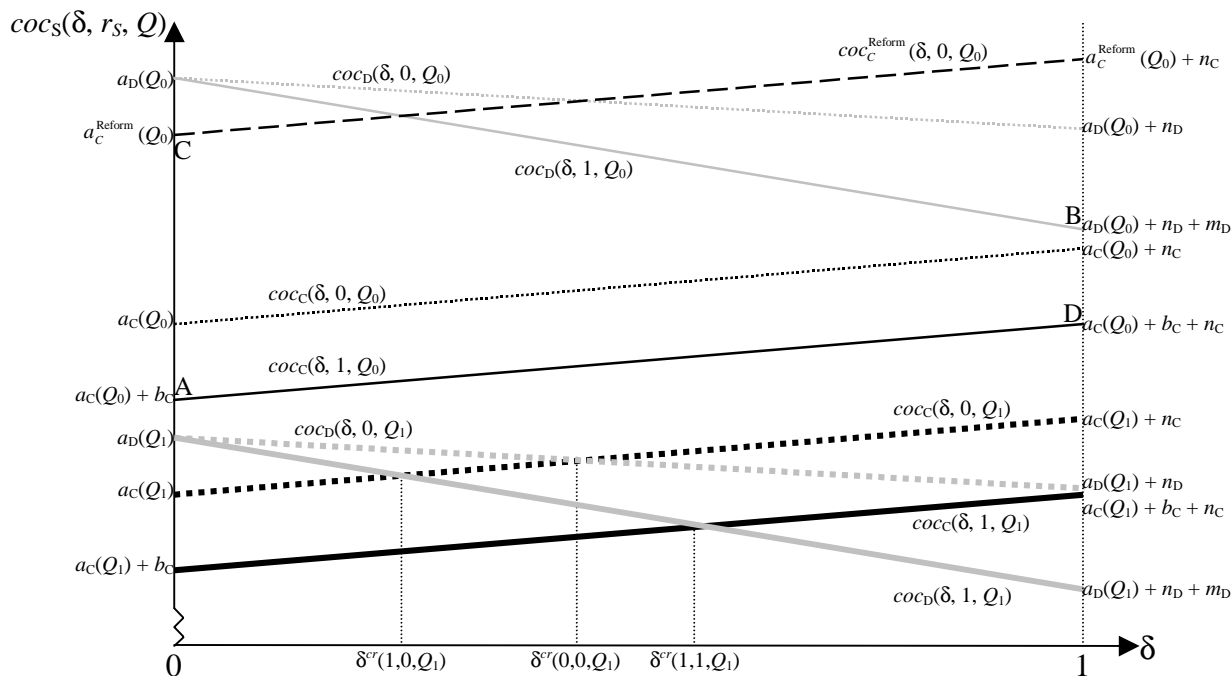
## 4. Implications

### 4.1 Sequencing of Reforms

As has been suggested in section 3.3.1, the amount of autonomous cost of capital  $a_S$  is decreasing in the overall quality of law  $Q$  (e.g. contract law, law enforcement, etc.). Since the outsider system relies heavily on arm's length financing in contrast to the relationship-based insider system, it is reasonable to assume that the autonomous costs of capital of the outsider system  $a_D$  decrease faster in  $Q$  than the autonomous costs of capital of the insider system  $a_C$ . Then, for a

country with a weak overall quality of law of  $Q_0$ , the outsider system might never be an efficient financial system, regardless of regulatory strategy and capital market liquidity. Such a case is depicted by the *thin* lines in Figure 11. The country is at equilibrium in point A.

**Figure 11**



with  $Q_0$  without reform:  $(a_D, b_D, m_D, n_D, a_C, b_C, m_C, n_C) = (9.5, 0, -1.3, -0.7, 6.25, -1, 0, 1)$   
with  $Q_0$  with reform:  $(a_D, b_D, m_D, n_D, a_C^{Reform}, b_C, m_C, n_C) = (9.5, 0, -1.3, -0.7, 8.75, -1, 0, 1)$   
with  $Q_1$ :  $(a_D, b_D, m_D, n_D, a_C, b_C, m_C, n_C) = (4.75, 0, -1.3, -0.7, 4, -1, 0, 1)$

Any legal reform aimed at the direct alteration of the financial system from the insider one to the outsider one<sup>110</sup> would only increase the associated agency costs. Such reforms could include the introduction of mandatory one-share-one-vote requirements combined with a prohibition of cross-holdings and pyramids.

If these reforms are accompanied by an alteration of the relevant regulations from a regulation that supports the insider system  $[(r_D, r_C) = (0,1)]$  to a regulation that supports the outsider system  $[(r_D, r_C) = (1,0)]$ , and successfully induce a shift towards everybody using the strategy of dispersed control ( $\delta=1$ ), the economy ends up at point B. Costs of capital actually rise as a result of the reform. Even worse, the reform could fail to induce a shift towards dispersed ownership. In this case, firms would stick with their strategy of concentrated control but they face

<sup>110</sup> Despite its inefficiency, such an action could still be called for by other countries that operate an outsider system. This will be explained in section 4.3.

extra costs of circumventing the new provisions that were introduced during the reform. In the graph, this is represented by a rise of  $a_c(Q_0)$  to  $a_c^{\text{Reform}}(Q_0)$ . As long as all firms circumvent the intention of the introduced measures, they are stuck at the equilibrium represented by point C.

Hence, altering firms corporate governance strategy should not be the first step in reforming equity markets.<sup>111</sup> Instead, reformers should first concentrate on the improvement of the relevant law (*e.g.*, contract law), the implementation of hard budget constraints, and strict law enforcement.<sup>112</sup> Once such measures have improved the overall quality of law, measures to alter the financial system can be advisable, as the next step, if the outsider system becomes the efficient system. In Figure 11, this situation is depicted by the *thick* lines. However, even if the outsider system becomes the efficient system for a great enough value of  $Q_1$ , this does not trigger an automatic shift towards it. The insider system still remains a stable equilibrium. This yields some other implications, dealt with in the next section.

## 4.2 Hysteresis of Inefficient Systems

By inserting (10) into (19), keeping the simplification  $\lambda \equiv \delta$ , we can calculate social welfare  $W$  for the specified cost of capital function as follows:

$$(25) \quad W(\delta, r_D, r_C) = -\left( \delta A_D N_D \delta B_D r_D M_D \delta r_D + (1-\delta) A_C N_C \delta B_C r_C M_C \delta r_C \right) - r_D R_D - r_C R_C$$

An example for the resulting function is given in Figure 12 for the same values as in Figure 11 for  $Q_1$ , assuming  $R_D = R_C = 10$ . There are two peaks. One peak is at the *IS* equilibrium with  $\delta = 0$  and  $(r_D, r_C) = (0,1)$ , which produces social welfare of  $W_{IS}$ . The other peak is at the *OS* equilibrium with  $\delta = 1$  and  $(r_D, r_C) = (1,0)$ , which produces social welfare of  $W_{OS}$ .

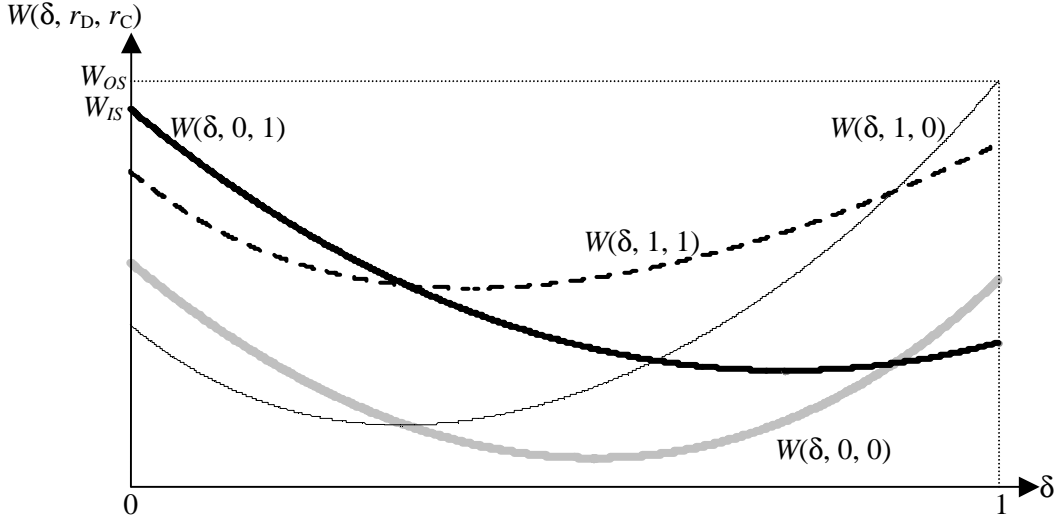
In the depicted example, the increase in the quality of law  $Q$  has made  $W_{OS} > W_{IS}$ . However, this does *not* trigger a shift from the insider system to the outsider system, automatically, because of two coordination problems.

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<sup>111</sup> In fact, with overall high agency costs of direct equity finance (regardless of the chosen system), an immediate priority for financial sector reform may well be to establish a healthy commercial banking sector, see Hans J. Blommestein and Michael G. Spencer, *The Role of Financial Institutions in the Transition to a Market Economy*, IMF Working Paper, Washington (1993).

<sup>112</sup> For the sequencing of such reforms, see R. Barry Johnston, *Sequencing Capital Account Liberalization and Financial Sector Reform*, IMF Paper on Policy Analysis and Assessment (1998).

Figure 12



$$(A_D, B_D, M_D, N_D, R_D, A_C, B_C, M_C, N_C, R_C) = (e^{4.75}, 1, e^{-1.3}, e^{-0.7}, 10, e^4, e^{-1}, 1, e, 10)$$

First, a legislator does not have an immediate incentive to change the law because the instant effect is always a decrease in welfare, as may also be seen in Figure 12.<sup>113</sup> Nevertheless, the long-run benefits of a shift to the other system outweigh these short-term losses. To solve this problem, the provision of information about the long-run benefits to both politicians and the public is helpful. Additionally, financial assistance could cushion the losses of the transition period. As we will see in the following section, foreign investors from *OS* countries receive immediate gains from a shift towards the outsider system if they have access to the capital market of the depicted economy. Hence, there is room to let these investors participate in the financing of the transition period.

The second coordination problem stems from the network effects of dispersed control. Even if the legislator enacts a change in law, say to (1, 0), it is not clear that a shift towards the efficient outsider system will be achieved. Since  $A_C < A_D$ , the strategy of concentrated control *C* still dominates the strategy of dispersed control *D* as long as the critical mass of strategy switchers  $\delta^{cr}(1,0,Q_1)$  is not achieved (see Figure 11). For a less developed, closed economy, reaching such a critical mass (*e.g.*, by subsidies) may prove to be very difficult. However, capital market integration can lessen the extent of this problem. This shall be explored further in the following section.

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<sup>113</sup> As long as  $\delta = 0$ , it is definitely below  $\delta_C^{cr}$ , see section 3.4.2.

Another way to induce a shift could be the temporary introduction of measures like one-share-one-vote requirements that increase the costs of concentrated control, as already discussed in the previous section. Such measures should be abolished once the shift has occurred because of the inherent costs of rigidities.

If we compare Figure 11 to Figure 12, we also see that policy-makers face a dilemma regarding the appropriate law for the transition period. In order to mitigate the losses in welfare during the transition period, it is advisable to implement provisions that mitigate agency costs of both control structures, *i.e.*,  $(r_D, r_C) = (1, 1)$ .<sup>114</sup> However, if we compare  $\delta^{cr}(1,1,Q_1)$  with  $\delta^{cr}(1,0,Q_1)$  in Figure 11, we see that this leaves the still existent equilibrium at  $\delta = 0$  more stable than an immediate switch from  $(r_D, r_C) = (0, 1)$  to  $(r_D, r_C) = (1, 0)$ . Thus, there is a trade-off between a *fast* and a *mild* transition.

### 4.3 Effect of Capital Market Integration

In this section, the effects of capital market integration are analyzed. Capital market integration here does not refer to an increase in the competition for capital that might eventually lead to a convergence of financial systems. In fact, even in the basic model in section 3, firms could compete for capital on a world financial market and still operate different systems of corporate governance in different jurisdictions without any convergence pressure.<sup>115</sup> The form of capital market integration that is analyzed in the framework of the model can be interpreted best as a complete integration, including the market for corporate control. On the one hand, such integration increases the functioning of the takeover market as a disciplining device to mitigate agency costs of dispersed control. On the other hand, it destabilized the reputation-based mechanisms of concentrated control.

Figure 13 illustrates the effects of capital market integration on the costs of capital of the different corporate governance strategies. The left half of the graph recapitulates Figure 8. It represents two *identical* closed economies *A* and *B*. For historical reasons both economies are at different equilibria regarding their financial system.

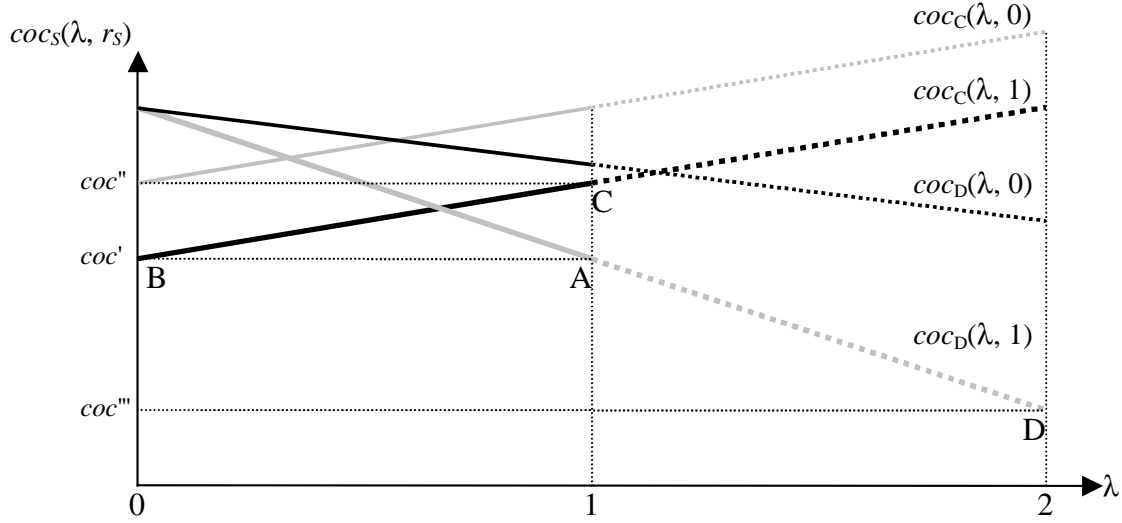
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<sup>114</sup> Analogously, if the associated costs of these provisions are relatively high, the relaxation of both provisions is advisable in the transition period, see section 3.4.2. The subsequent arguments hold for this case, as well.

<sup>115</sup> One could think of the famous Italian family Agnelli owning a control block of the Italian car manufacturer Fiat and holding a diversified portfolio of American shares at the same time and making the same rate of return at the margin with both investments.

A has an outsider system (point A), *i.e.*  $\lambda^A \equiv \delta^A = 1$  and  $(r_D^A, r_C^A) = (1, 0)$  in equilibrium. The gray lines depict  $coc_s(\lambda, r_s)$  under the law pertaining to A. B has an insider system (point B), *i.e.*  $\lambda^B \equiv \delta^B = 0$  and  $(r_D^B, r_C^B) = (0, 1)$ . The black lines depict  $coc_s(\lambda, r_s)$  under the law pertaining to B.

**Figure 13**



$$(a_D, b_D, m_D, n_D, a_C, b_C, m_C, n_C) = (5, 0, -1.3, -0.7, 4, -1, 0, 1)$$

If we assume  $R_D = R_C = R$  in this example, social welfare  $W^i(\lambda^i, r_D^i, r_C^i)$  equals  $W^A(1, 1, 0) = W^B(0, 0, 1) = -e^{coc'} - R$  in both countries. If the capital markets of the two countries integrate, costs of capital are not influenced anymore by the individual countries' liquidity  $\lambda^i \equiv \delta^i$ . Investors in both countries now face total liquidity that amounts to  $\lambda^T = \lambda^A + \lambda^B = 1$ . This leaves costs of capital in country A unchanged. In B, however, the increase in  $\lambda$  aggravates problems of its insider system and costs of capital rise to  $e^{coc''}$ . In the graph, this is represented by a move to point C. If the impact of the laws is still strong enough (as in the graph's example), this increase in costs of capital does not trigger a change of strategies of the investors in B. Consequently, the law profile in B also remains  $(r_D, r_C) = (0, 1)$ . The insider system in B prevails at point C, despite it now being less efficient ( $W^B(\lambda^T, 0, 1) = -e^{coc''} - R$ ).

If we look at the right half of Figure 13, we see that investors from country A have incentives to call for political action in their neighbor country B. Any small increase in  $\delta^B$  lowers their costs of capital. They might, *e.g.*, call for the introduction of  $(r_D, r_C) = (1, 1)$  in B. While the immediate effect is an even lower social welfare in B of  $W^B(1, 1, 1) = -e^{coc''} - 2R$ , in the long run *both* countries benefit if B gives in to the pressure from abroad because a change in law moves B

also to the outsider system. In this abstract model, they would both finally end up at point D with a maximum social welfare of  $W^A(2, 0, 1) = W^B(2, 0, 1) = -e^{coc^m} - R$ .

The implications of this analysis are two-fold. First, it provides a strong argument for advocating the introduction of the market-based outsider system in all countries along with the integration of capital markets. In the long run, all countries benefit from such a “standardization” of financial systems. Since the outsider system relies on the takeover market, each jurisdiction with an outsider system benefits if other jurisdictions change their system to an outsider system, as well, because this enhances the market for corporate control and, thus, lowers agency costs of the outsider system.

Second, this section identifies possible different intermediate effects of capital market integration. Three different situations can result here. In the best case, the extra liquidity immediately induces a shift of investors’ strategies to dispersed control.<sup>116</sup> In this situation, the integration itself is enough to trigger a move towards a more efficient financial system.<sup>117</sup> Legislators always face the right short-run incentives to provide their firms with the efficient law and start introducing provisions to mitigate costs of capital of dispersed control, as soon as a sufficiently large fraction of firms is owned that way.

The above example describes the second situation that might occur. Capital market integration provides the country with the needed liquidity to switch rather easily to a more efficient outsider system. However, the required change in the law implies some short-run losses in the transition period.

In the worst case, the increase in liquidity has a harmful effect on the insider system (*i.e.*  $N_C > 1$ ) plus the overall quality of the law is so weak that the only effect of the extra liquidity is an increase in the costs of capital of the insider system. In Figure 11 on page 55, this would be represented by a move from point A to point D. In this case, the capital market integration has a detrimental effect on the working of the institutions that cannot be addressed by a change in the financial system. As established in section 4.1, reforms should first address improvement of the overall quality of law. The analysis of this section suggests that there should also be a minimum quality of law *prior* to the opening up of capital markets. This is, of course, only true if the

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<sup>116</sup>In the above example, this would be the case if after capital market integration, it already holds that  $coc_D(1,0) > coc_C(1,1)$ .

<sup>117</sup>This may well be what presently happens in the European Union.

detrimental effect on the financial system outweighs other possible benefits from capital market integration.

## 5. Conclusion

Notwithstanding the level of abstraction, the results of the model square well with stylized variations between the different financial systems. Due to the complexity of the analyzed issues, the model makes some very rough simplifications about reality. One of these is the assumption that all firms are equal. Different firms require different corporate governance structures under the same constraints.<sup>118</sup> This may explain why, in reality, we also see variations regarding corporate governance within jurisdictions. The model can still give some hints as to why, one observes different equilibria of corporate governance in different jurisdictions.

One of the main implications of the model is that while insider systems may serve very well in closed capital markets, capital market integration, especially the integration of markets for corporate control, will eventually make outsider systems dominate. This is due to the fact that the outsider system functions the better the more jurisdictions adopt it. However, it is also shown that even when the outsider system dominates the insider system, there need not be an immediate shift towards that system. In contrast to other publications, this result is derived *without* introducing rent seeking by parties that benefit from the insider system. It is shown that, due to two sorts of network externalities, an inefficient insider system might persist even if legislators are benevolent.

Since the effectiveness of the outsider system is increasing with the degree of capital market integration, in the long run, financial regulation should also attempt to move in the direction of outsider systems in order to enable firms' use of the corporate governance strategy of dispersed control. However, trying to *push* corporate governance directly into that direction by *mandating* the desired form of corporate governance, should be regarded with caution because it can have detrimental effects. It is argued that the outsider system will evolve "naturally" as soon as its use becomes efficient if two conditions have been met. First, priority should be given to improvement of the overall quality of the regulatory business environment. Second, a complete liberalization of capital markets including the market for corporate control allows for an "import"

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<sup>118</sup>For a recent assessment of this matter, see Colin Mayer, *Ownership Matters*, Paper written for the inaugural lecture of the Leo Goldschmidt Chair in Corporate Governance at the Université de Bruxelles, 10 February (2000).



of the liquidity of the world market for corporate control that mitigates the costs of capital of dispersed control. Both measures bolster the effectiveness of the corporate governance strategy of dispersed control and enable an evolution towards the outsider system. Once such evolution has been initiated, the transition can be strengthened by the introduction of appropriate legislation, like the introduction of disclosure requirements whilst first leaving mandatory corporate law provisions in place to protect existing non-controlling shareholders.

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