TI 2004-012/2
Tinbergen Institute Discussion Paper

The Political Economy of Bank- and Market Dominance

Enrico Perotti
Ernst Ludwig von Thadden

[1] *Faculty of Economics and Econometrics, Universiteit van Amsterdam, Tinbergen Institute, and CEPR,*
[2] *Université de Lausanne, FAME, and CEPR.*

Tinbergen Institute
The Tinbergen Institute is the institute for economic research of the Erasmus Universiteit Rotterdam, Universiteit van Amsterdam, and Vrije Universiteit Amsterdam.

Tinbergen Institute Amsterdam
Roetersstraat 31
1018 WB Amsterdam
The Netherlands
Tel.: +31(0)20 551 3500
Fax: +31(0)20 551 3555

Tinbergen Institute Rotterdam
Burg. Oudlaan 50
3062 PA Rotterdam
The Netherlands
Tel.: +31(0)10 408 8900
Fax: +31(0)10 408 9031

Please send questions and/or remarks of non-scientific nature to driessen@tinbergen.nl.
Most TI discussion papers can be downloaded at http://www.tinbergen.nl.

The Political Economy of Bank- and Market Dominance*

Enrico C Perotti University of Amsterdam and CEPR
Ernst-Ludwig von Thadden
Université de Lausanne, FAME, and CEPR

April 2003

Abstract

Legislation affects corporate governance and the return to human and financial capital. We allow the preference of a political majority to determine both the governance structure and the extent of labor rents. In a society where median voters have relatively more at stake in the form of human capital rather than financial wealth, they prefer a less risky environment even when this reduces profits, as labor rents are exposed to undiversifiable firm-specific risk. In general, labor and lenders prefer less corporate risk, since their claims are a concave function of firm profitability. This congruence of interests can lead the political majority to support bank over equity dominance. As shareholdings by the median voters increase, the dominance structure will move towards favoring equity markets with riskier corporate strategies and higher profits.

*We are grateful to Sudipto Bhattacharya, Pierre-André Chiappori, Paolo Fulghieri, Marco Pagano, Gilles Saint-Paul, and in particular to Howard Rosenthal for helpful comments. Thadden thanks the Swiss National Science Foundation for support through the NCCR FinRisk.

1 Introduction

A long running question in corporate governance theory concerns the relative merits of bank influence versus market discipline over corporate decision making. A considerable literature, following Mayer (1988) and others, has explored corporate performance in countries with active capital markets and those in economies such as Japan and Germany where financial intermediaries are very influential. In the popular debate, banks are often accused of being too conservative and opaque, while markets are seen as exerting excessive profit pressure on managerial decisions and being ruthless to stakeholders (Shleifer and Summers, 1988). In recent years, the attention has shifted to a systematic classification of financial systems, supported by broad empirical evidence on the relationship between legal structure, corporate governance, and financial performance in different countries (LaPorta, Lopez-de-Silanes, Shleifer and Vishny (1997,1998), and others).

Yet, as Rajan and Zingales (2001) have argued, these relationships need not be stable and can evolve over time. Thus the structure of the financial system may experience large reversals when a political majority decides to alter the legal framework underlying corporate financing and governance, as it happened, for example, in the US in the first third of the last century (Roe, 1994).

This paper takes the discussion towards a positive rather than normative approach, by asking how alternative legislative choices may come to exist in the first place. We propose a model that highlights how the distribution of financial wealth and the extent of undiversified human capital both influence political preferences over the choice of the relative importance of stakeholder and investor returns.

Specifically, we model the political preferences of a democratic majority over the allocation of corporate control to banks rather than to equityholders, and analyze the implications for corporate investment and economic growth. We show that since corporate governance affects corporate investment decisions, it has distributional effects, and thus affects the return to both financial and human capital. The choice of governance form thus affects the welfare of voters, and is therefore shaped by the preference of the political majority. In fact, we take this postive framework one step further, and allow politics to influence the return to human capital. In this sense, this paper is in the tradition of classic political economy.

In the modern theory of ownership, private control rights are residual to

contractual obligations and to legislation (Hart, 1995); thus the legal environment constrains and shapes the contents of control rights. Legislation on the role of the supervisory board and its composition, the bankruptcy code, the creation of legal liability for intervening creditors, the right of banks to represent small shareholders in corporate control, or the ability of large shareholders to act in concert, are all examples of direct legal determinants of control rights and the practice of corporate governance. Furthermore, political influence on governance arises not only from legal codification but also indirectly from trade and labor regulations, from the design of regulatory institutions (for the U.S. case, see Kroszner and Strahan (2000)), and any politically-determined choice on the degree of enforcement. Overall, we argue that stakeholder influence over corporate decision making derives more from political influence rather than from explicit bilateral contracting.

The starting point of our analysis is the insight that much of the risk associated with the returns to firm-specific human capital cannot be diversified. This is in contrast to markets for the sharing of many financial risks, which are remarkably well developed.[1] We argue that this market incompleteness gives voters an incentive to influence such income risks politically. Because a comprehensive economy-wide redistribution of income is not feasible or very costly in terms of efficiency, an important avenue for protecting human capital risk is to influence corporate risk taking.[2] Voters cannot realistically influence corporate risk taking directly, but they may delegate this power to those parties in the financial system whose interests are best aligned with their own. In our model, we focus on the two most important investor groups in corporate governance, equityholders and banks.

We show that the corporate investment risk choice has a redistributional effect between the return to financial and human capital, and affects individual utility differentially depending on the composition of individual wealth. The key point is that banks hold concave claims on corporate returns, and therefore are natural allies of stakeholders who want to limit corporate risk-taking. On the other hand, equity investors prefer the alternative of higher

[1] For forceful recent accounts and analyses of incomplete markets, see Allen and Gale (2000) and Shiller (1993).

[2] At the corporate level, Aoki (1988) argues that in a consensual corporate governance structure, such as in many Japanese firms, labor risk may be reduced by deliberate risk sharing such as corporate diversification. Hermalin and Katz (2000) show that this may be in the interest of shareholders, as it reduces the required compensation for employees investing in firm specific human capital.

risk, higher return investment. This group is the natural ally of agents for whom financial capital is more important than human capital.

However, this argument is incomplete, as the preferences over returns from financial versus human capital depend on the size and form of the returns to human capital, which are also strongly affected by politics. We therefore endogenize the political determination of the returns to labor, which we call more broadly labor rents, as they often include significant components over and above marginal productivity pay. For example, legislation on minimum wages, work security, severance pay, pensions, etc., all provide rents to labor that are largely unrelated to marginal productivity. Clearly, the higher these labor rents, the stronger is the political interest to protect them from corporate risk.[3] Yet these rents are exposed to undiversifiable risk. In fact, voters in our model could choose to limit these rents, which would eliminate their incentives to interfere with corporate risk choices. But many voters will not find this in their interest, because high-risk, high-return strategies benefit mostly wealthy financial investors who are well diversified. Hence we predict a tendency of poorer individuals to vote for high labor rents and bank control, and of richer individuals to vote for low labor rents and equity control.

We assume a democratic voting process and show that the Median-Voter Theorem applies in our context. When the distribution of financial wealth is skewed (i.e. when wealth is concentrated among the richer voters), the median voter has relatively more at stake in the form of firm-specific human capital, and therefore supports dominance by banks. If the median voter is sufficiently wealthy, she votes for equity dominance, which results in riskier investment strategies and a higher aggregate rate of innovation and growth, but leads to greater individual risk-bearing associated with firm-specific uncertainty.[4]

Our political economy approach in the determination of labor rents as

[3] Saint-Paul (2002) provides a careful analysis of the relationship between firm-specific human capital, labor rents, and employment protection in a growth model. Although our model of the labor market is much coarser than his, our labor rent variable H plays a role similar to his employment protection variable F. In particular, similar to us, Saint-Paul studies the political choice of F by the median voter, who trades off reduced human capital risk against lower income.

[4] In our interpretation, riskier investment strategies result in the acquisition of greater growth opportunities. There is both empirical evidence and a broad conceptual consensus in corporate finance that intangible assets require more equity finance, and their higher riskiness may require more dispersed shareholdings.

a political decision is different from the conventional view that workers bargain over their compensation with firms. While in practice firms do negotiate with workers directly, there are major components of this bargaining process which depend on legislation (such as pension plans, employee benefits, minimum wage, working conditions, legislation on labor union, or centralized versus firm-specific bargaining). These features, very important in practice, determine the degree of "corporatism" in the economy, a major political issue with its supporters and opponents.[5] It is common for economists to stress the differences between Europe and the U.S. in the matter of regulation on wages, pensions, and job security.

We do not argue here that the classical labor market is unimportant. Clearly, if wages or indirect labor costs are set too high by law, unemployment will follow. This may or may not affect the median voter. She may be a "labor insider", not much exposed to the risk of dismissal, or may have to trade off higher rents against the risk of reduced income, as long as it is cushioned by social insurance that she can influence politically. Our main argument on the political impact of different exposures to financial and human capital risk would still hold with an explicit modelling of the labor market. Similarly, it is of course clear that firms choose their own capital structure and can thus affect their own governance. What we point out is that these activities are influenced by system-wide political choices. We discuss in an extension how legislation may indirectly induce some firms to take on debt and thus accept lender dominance. An interesting implication that follows from that is that there may be different views on governance by workers in mature and in growth sectors.

The formal literature on the political determinants of financial structure is still fairly novel and relatively small.[6] Pagano and Volpin (2000) endogenize the relative power of small and large equityholdings as a political choice. They show how poor minority investor protection may be the result of a political alliance between stakeholders and large investors, which results in a "corporatist" system protecting their rents against financial investors. Bolton and Rosenthal (2002) analyze the incentives of various interest groups to politically change financial contracts through debt moratoria or write-offs, and use their results to interpret the evolution of U.S. debt markets in the

[5] For a similar classification, see Roe (2000), who defines a social democracy as a country where voters have concern for redistributional issues, and favor employees over investors.

[6] See Pagano and Volpin (2001) for an excellent survey.

19th century. Perotti and Volpin (2003) model the political lobbying by established firms to retard financial developent, in order to limit entry. Finally, Biais and Perotti (2002) propose a political theory of privatization policy, arguing that the diffusion of financial shareholdings may be designed to ensure re-election.

The remainder of this paper is organized as follows. Section 2 presents the basic model, which is then studied in Section 3. Section 4 offers extensions that endogenize the form of labor rents assumed in the base model, discuss taxation and social insurance, study labor co-determination, and decentralized governance decisions. Section 5 surveys some of the empirical evidence available to evaluate our theory. Section 6 concludes. A discussion of the Median-Voter Theorem in our context and a longer proof are in an appendix.

2 The Basic Model

As discussed in the Introduction, in modelling corporate decisions we take a different approach from existing work. We wish to capture the notion that many corporate decisions can be strongly influenced by stakeholders other than equityholders and that the influence of stakeholders depends on political choices through the legal, tax, and regulatory environment. We therefore assume in the base model that the corporate governance system (the identity of the dominant investor or stakeholder) and the level and protection of employee claims are decided economy-wide. The economy-wide allocation of corporate governance rights thus affects the choice of investment strategies by enterprises, and thus the risk and the competitive profile of the economy.

We assume that there is a continuum of individuals indexed by $i \in [0,1]$. Each individual is endowed with an equal amount of human capital and works in a firm $f(i)$. The individual's human capital is invested in skills specific to firm $f(i)$. The return to this firm-specific human capital is a function of the individual firm return $R_{f(i)}$ and is denoted by $h(R_{f(i)})$. Hence, the residual return of a firm j, net of returns to human capital, is $F_j = R_j - \int_{j=f(i)} h(R_j)di$. The value $h(R_{f(i)})$ represents all returns from firm-specific human capital, and is therefore broader than wages. In fact, given the absence of a labor market in the base model we ignore the role of wages as factor pay and focus on the rents obtained by employees. Hence, we interpret h broadly as pay above marginal productivity, rents from seniority and promotion arrangements, corporate pension plans, the quality of working

conditions, firing restrictions, etc., and often call it labor rents for simplicity.

Total financial returns in the economy are given by $F = \int_{j \in J} F_j dj$, where J is the set of all firms. Next to his human capital, each individual is endowed with a claim F_i on the financial wealth in the economy. The agents in the economy maximize the expected utility of total individual wealth $W_i = F_i + h(R_{f(i)})$. Utility functions are identical across agents and given by

$$U = E(W_i) - \frac{1}{2} A \text{var}(W_i) \tag{1}$$

where A is a measure of risk aversion.[7]

Individual firm profitability is uncertain and also depends on the firm's choice of strategy. Firms, or rather their dominant stakeholder, may choose between a riskier strategy or a safer investment in more established assets. We interpret the risky strategy as producing less certain returns but more growth opportunities. An investment strategy is given by a cumulative distribution function $G_\sigma(R)$ on $[0, \infty)$ that describes the distribution of returns generated by the investment. The safer strategy is given by G_s, the riskier by G_r. To capture the notion of different risks, we assume that there exists a unique $R_0 \in (0, \infty)$ such that (i) $G_r(R_0) - G_s(R_0) = 0$ and (ii) $G_r(R) - G_s(R) > 0$ if and only if $0 < R < R_0$. In words, the distribution G_r has more mass in the tails than G_s. This assumption implies that

$$\text{var } (R_s) < \text{var } (R_r). \tag{2}$$

Let $\overline{R}_\sigma$ denote the expected value of returns under strategy σ. Note that if $\overline{R}_s \geq \overline{R}_r$ the safe strategy s strictly dominates strategy r in our mean-variance world. This case is trivial. We therefore focus on the case

$$\overline{R}_s < \overline{R}_r. \tag{3}$$

We simplify the analysis by assuming away aggregate risk in the corporate sector and thus assume the Law of Large Numbers and consider a continuum of firms.[8] We can then normalize the number of firms to be equal to

[7] Note the slight abuse of notation in (1), where W_i denotes the distribution of individual wealth. For brevity, we use CAPM-type utilities and do not define utility over wealth levels.

[8] The assumption is much stronger than we need. Its role is to highlight the difference in risk-bearing capacity between diversified financial holdings and firm-specific, dedicated human capital.

that of individuals and assume that each firm employs one single individual. Hence, firms are also indexed by i and their return net of labor costs is $R_i - h(R_i)$. If all firms choose the same investment strategy σ, aggregate corporate returns in the economy are $\overline{R}_\sigma$, and aggregate financial returns $F = \overline{R}_\sigma - \int h(R) dG_\sigma(R)$.

Financial markets in this economy function perfectly. Therefore, it does not matter what type of financial claim an individual holds, which allows us to ignore the individual portfolio problem. Furthermore, this allows us to describe an individual i's financial wealth by a single number, $\alpha_i \geq 0$, which is his share in total financial wealth F. Note that α_i can be greater than one, as F is average total financial wealth. By construction, $E\alpha = 1$. The only restrictions on the α_i are that they are non-negative and that $\int_0^1 \alpha_i di = 1$. Without loss of generality we assume that individuals are ordered by their financial wealth, i.e. that α_i is non-decreasing in i. In contrast to the risk from financial wealth, which is perfectly insured through capital markets, the individual firm-related human capital risk cannot be insured away.

We adopt a very simple view of corporate finance, which is sufficient for our purposes. Capital structure is exogenous and, for expositional simplicity, identical across firms. Firms are funded with a mixture of debt and equity. Each firm has a bank loan with face value equal to B and bonds outstanding with face value D. Equity holds the claim to residual profits. It is essential for our argument that bank debt is not so high as to make banks risk-loving. Empirically, this assumption is certainly reasonable, except for a few outlier cases. The following assumption is stronger than needed, but makes the exposition simple:

$$B \leq R_0 \tag{4}$$

The political process plays a decisive role in our model. We use here the simplest possible model for majority decision making, that of the median voter. We assume that politics determines two key variables that affect corporate decision making. First, voters decide about labor rents h, which we will specify further below. And second, voters determine the overall corporate governance structure of firms within the economy. More specifically, legislation determines which of the two major financial stakeholders in the economy is most influential, equity holders or banks. In Section 4 we show in an extension how one can incorporate another important stakeholder, labor, into the analysis. While the exercise of influence by different stakeholders is clearly a complex problem, we simplify this point, by assuming that the firm's

broad investment strategy ($\sigma \in \{s, r\}$) is chosen by the dominant investor.

To summarize, the time sequence of the model is as follows:

1. A political majority chooses the amount of labor rents and what type of investor will dominate corporate decisions.

2. Firms decide their investment strategy under the influence of the dominant investor.

3. Production takes place, and payoffs are distributed to creditors, shareholders, and employees.

Up to now, we have left unspecified the shape of the h function. In the basic model presented here, we simply assume that

$$h(R_i) = \min(H, R_i), \tag{5}$$

where H is a constant describing the nominal level of labor rents for each agent. Because all agents are identical with respect to their productivity and employment status, their expected labor rents are all equal (ex post the level of these rents will, of course, depend on the fortunes of their company). Our formulation is the simplest possible version of a labor rent that is concave in overall returns, which is all we need for our argument. In fact, the formulation (5) is quite intuitive and can be endogenized (see Section 4), because for a given level of $E(h(R))$ voters in the economy would choose to minimize the risk from specific human capital borne by individuals. The reason is simply that this risk is fully diversifiable for investors. Therefore, granting the maximum level of insurance to employees for a given level of expected compensation (i.e. granting their claims highest seniority as in (5)) carries no additional financial cost.[9]

Our assumption about labor rents implies that these rents have higher priority than debt. In order to define the incentives of banks, we also need to specify the priority of bank loans over bonds. In line with the empirical evidence virtually everywhere,[10] we simply posit that banks have priority

[9] This solution is actually identical to the optimal functional form for outside financing if profits are not freely verifiable by outside investors; see Gale and Hellwig (1985).

[10] See, e.g., Welch (1997) and the evidence cited there.

over bond investors. Hence, a bank loan of face value B gives the bank a claim of

$$b(R) = \text{min. } (B, \text{Max } (0, R - H)) = \begin{cases} B & \text{if } L + H \leq R \\ R - H & \text{if } H \leq R \leq B + H \\ 0 & \text{if } R \leq H \end{cases}$$

While the priority assumption of bank loans is absolutely standard and certainly descriptively correct, the assumption about the priority of labor rents is quite an extreme simplifying assumption. In fact, while earned wages typically have priority over debt in bankruptcy, some labor rents are usually reduced or even eliminated in case of business problems. It is therefore important to point out that the exact division of claims among debt and labor is not essential for our argument. All that counts is that both tend to be more interested in the downside than the upside of profits.

3 The Analysis of the Basic Model

3.1 Corporate strategy

Given the political decision about stakeholder dominance and the level of labor rents H, the dominant investor in each firm chooses the firm's strategy $\sigma \in \{s, r\}$. This choice can easily be characterized as follows.

Lemma 1 *If equity is dominant in a given firm, it chooses the riskier strategy $\sigma = r$ regardless of H. If banks are dominant, there is a $H_0 > 0$ such that the following holds. If $H > H_0$, the dominant bank prefers $\sigma = r$ over s, and if $H < H_0$, it prefers $\sigma = s$.*

Proof: Equity has a convex claim and therefore favors risk (at least weakly). For banks, the preference depends on the parameter H (determining how much of the downside of returns they must cede) and B (determining how much of the upside they capture). Bank returns are

$$\int_H^{H+B} (R - H) dG(R) + (1 - G(H + B))B.$$

Hence, banks favor the safe strategy if and only if

$$\Delta(B, H) := \int_H^{H+B} (R - H) d(G_s(R) - G_r(R)) + (G_r(H + B) - G_s(H + B))B$$

is positive. By partial integration,

$$\Delta = \int_{H}^{H+B} (G_r(R) - G_s(R))dR. \tag{6}$$

If $H \geq R_0$, the integrand in (6) is negative by assumption. On the other hand, if $H = 0$, the integrand is positive if B is not too large (which is implied by assumption (4)). Since Δ is continuous in H, this proves the existence of the intermediate value H_0.

The first part of Lemma 1 is obvious: as equity is the residual claimant to profits, it will favor the riskier strategy, which increases the upside of profits.[11] Dominant banks, on the other hand, who receive the intermediate slice of returns, $R \in (H, H + B]$, will favor safer investments as long as H is not too large. If H is large ($H \geq H_0$), any debt claim has no downside gains but mostly upside gains, and debt holders will act like equity holders. However, if H is smaller, banks will be hurt more by the increase in profit variability than benefit from the increase in expected profits and thus prefer less risk.

3.2 The political determination of stakeholder rents

Given our assumption about the form of h, (5), the expected level of labor rents is (for any strategy choice G of firm i)

$$E(h(R_i)) = \int_{0}^{H} R_i dG(R_i) + H[1 - G(H)].$$

Financial wealth of the economy is equal to the sum of individual firm returns minus the value of the compensation of labor. From Lemma 1 we know that, if dominance and H are decided economy-wide, all firms choose the same strategy. Thus we have

$$\begin{aligned} F &= \overline{R} - E(h(R)) \\ &= \int_{0}^{\infty} \max(R - H, 0) dG(R). \end{aligned} \tag{7}$$

[11] As labor is the claimant to the downside of profits, with no (or more generally, little) claim to the upside, it would favor the safer strategy. See Section 5 for an explicit analysis of labor dominance.

Because aggregate financial wealth in the economy is deterministic, we can now rewrite the expected utility for individual i (for a given risk strategy, constant across firms) as a function of her share in aggregate financial wealth α_i, her labor rent H, and the corporate strategy σ:

$$\begin{aligned} U(\alpha_i, H, \sigma) &= E[\alpha_i F + h(R_i)] - \frac{1}{2} A \text{ var}(\alpha_i F + h(R_i)) \\ &= \alpha_i \overline{R}_\sigma + (1 - \alpha_i) E_R[\min(H, R)] - \frac{1}{2} A \text{ var}_R(\min(H, R)) \quad (8) \end{aligned}$$

Although the political decisions about labor rents and investor dominance are taken simultaneously, it is instructive to first study the choice of H for a given investment policy σ (i.e. a c.d.f. G), and then study the trade-offs underlying the choice of stakeholder dominance (which will determine σ by Lemma 1).

The simple structure of voter preferences (8), which are linear in α, allows us to work with the Median-Voter Theorem (for details, see the Appendix). As we have assumed the density α_i to be non-decreasing in i, the median voter is simply agent $m = 0.5$. Agents $i < m$ hold less financial wealth than the median voter and agents $i > m$ more.[12] The median voter considers both, her return to human capital and her stake α_m in the overall financial wealth of the economy. Her decision is given in the following proposition.

Proposition 2 *Suppose the firms' investment policy σ can be determined by the median voter directly and is identical across firms. Then, if $\alpha_m > 1$, the amount of labor rents chosen by the median voter is $H^*_\sigma = 0$. Otherwise, the median voter's utility is single-peaked in H and the optimal amount of labor rents is given by*

$$\int_0^{H^*_\sigma} G_\sigma(R) dR = \frac{1 - \alpha_m}{A}. \quad (9)$$

Proof: We have

[12] In general, the difference between α_m and average shareholdings will be correlated with measures of income inequality in the economy, but without further assumptions on the distribution of α_i we cannot rank economies in terms of inequality according to this difference.

$$
\begin{aligned}
& \operatorname{var}(\min(H,R)) \\
= \; & E[(\min(H,R))^2] - E[\min(H,R)]^2 \qquad (10) \\
= \; & \int_0^H R^2 dG(R) - \left(\int_0^H R dG(R)\right)^2 - 2H(1-G(H)) \int_0^H R dG(R) \\
& + H^2 G(H)(1-G(H))
\end{aligned}
$$

Hence, voter α's expected utility is, after inserting (10) into (8), partially integrating, and rearranging,

$$
\begin{aligned}
U(\alpha, H, \sigma) \; = \; & \alpha \overline{R}_\sigma + (1-\alpha)(H - \int_0^H G_\sigma(R) dR) \qquad (11) \\
& - A \left[H \int_0^H G_\sigma(R) dR - \frac{1}{2} (\int_0^H G_\sigma(R) dR)^2 - \int_0^H R G_\sigma(R) dR \right]
\end{aligned}
$$

Differentiating this yields

$$
\frac{\partial}{\partial H} U = (1 - G_\sigma(H)) \left[1 - \alpha - A \int_0^H G_\sigma(R) dR \right]. \qquad (12)
$$

Hence, utility is single-peaked in H (for σ fixed), and if $\alpha > 1$ the maximum is at $H = 0$. If $\alpha \leq 1$, the second order conditions are satisfied and the maximum is given by the first-order condition (9).

The value H^*_σ is the median voter's preferred choice of H given σ, i.e. the value of labor rents she would choose if her choice did not affect the dominant stakeholder's choice of strategy σ. This choice has some interesting features. If the median voter has financial claims $\alpha_m F$ less than the average financial holdings (which equal F), then there is an interior solution. At this solution, the optimal choice H^*_σ will trade off a higher but riskier stakeholder rent against a safer but lower financial return. This is the standard case of financial wealth distribution.[13]

As long as $\alpha_m > 0$, too high choices of H are never optimal, because there are efficiency gains from receiving income from corporate profits as a financial return rather than in the form of labor rents, which cannot be diversified.

[13] Note that the ideal value of H is finite even if the median voter has no financial wealth ($\alpha = 0$). This feature is due to the mean-variance structure of individual preferences. In fact, for quadratic utilities with coefficient $A/2$, a wealth level of $1/A$ represents bliss.

In the less realistic case that the median financial wealth is higher than the average ($\alpha_m \geq 1$), the ideal choice of H is as low as possible. In our case where we ignore factor pay according to marginal productivity, we have $H^*_\sigma = 0$. The reason is that the median voter has more wealth at stake as an investor than as a supplier of human capital. Since it is more efficient to diversify, the median voter ensures to receive all her income in financial form rather than as labor rent.

Given the monotonicity of condition (9), it is easy to note some interesting simple comparative statics results. In particular, for a fixed corporate strategy σ, the preferred level of labor rents is decreasing in the median voter's financial wealth and in her risk aversion. The reason for the former is what could be termed a simple "Thatcher effect": by making the median voter more interested in capital returns, she is led to discount labor rents. In other words, the opportunity cost of labor income increases if individuals have higher financial wealth. In general, the more skewed is the distribution of financial wealth, i.e. the more concentrated are financial holdings, the lower will be the median wealth holding relative to the average shareholdings, and the higher will be the desired labor rents.

Next, increasing risk-aversion in the economy tends to reduce labor rents. This may seem paradoxical, as more risk-averse agents should be more interested in protecting the risky returns to their firm-specific human capital, but is reasonable as soon as one realizes that higher risk-aversion lets the agents put more emphasis on riskless (diversified) financial capital.

Finally, it is interesting to note that if poorer agents vote less than richer agents, then labor rents tend to be lower than under full voter participation. Indeed, having poorer voters vote less than richer voters has the effect of shifting the median voter to the right, i.e. to higher financial holdings. As a result, ideal labor rents in the economy are reduced.

3.3 Determination of the dominant investor regime

We now can examine which of the investor groups in the economy, equityholders or banks, will be granted a dominant position through legislation in political equilibrium. This decision is taken together with that about the level of labor rents analyzed in Proposition 2.

Formally, voters' utility is determined by the decision about (H, c), where $c \in \{E, B\}$ denotes either equity control or bank control. Because the decision space is two-dimensional, this framework is not the usual one of the

Median-Voter Theorem. Yet, it is easy to see that because voters' objectives are linear in α_i, the median voter will be pivotal and the Median-Voter Theorem holds in our case (see the appendix for the full argument).

When choosing a nominal value of labor rents H, the median voter recognizes that the expected level of rents will depend on the riskiness of corporate profits, which she cannot control directly (but see Section 4 for a discussion of employee co-determination). Hence, when choosing stakeholder dominance, the median voter will prefer the party whose interests in corporate strategy are best aligned with her own.

Proposition 3 *The median voter chooses bank dominance if*

$$U(\alpha_m, \min(H_0, H_s^*), s) > U(\alpha_m, H_r^*, r) \tag{13}$$

and equity dominance otherwise. If (13) holds and $H_s^* < H_0$, she chooses $H = H_s^*$. If (13) holds and $H_s^* \geq H_0$, she chooses $H = H_0(-\varepsilon)$. If (13) does not hold, she chooses $H = H_r^*$.

Proof: From Proposition 2 we know that the median voter's preferences over H, given investment strategy σ, are single-peaked. From Lemma 1 we know that investment strategy $\sigma = s$ can be implemented through bank dominance, if and only if $H < H_0$.

If $H_s^* < H_0$, (13) therefore implies bank dominance. If $H_s^* \geq H_0$, the median voter's maximum utility with $\sigma = s$ is $U(\alpha_m, H_0, s)$, and thus (13) again provides the criterion for the median voter's choice.

The median voter's choice in Proposition 3 reflects a trade-off between labor rents and corporate riskiness that is determined by the median voter's financial wealth. If $U(\alpha_m, H_r^*, r) > U(\alpha_m, H_s^*, s)$, the decision is unambiguously in favor of higher financial returns, hence the riskier corporate strategy. If on the other hand, $U(\alpha_m, H_r^*, r) < U(\alpha_m, H_s^*, r)$ and $H_s^* < H_0$, the decision is clearly in favor of less risk, at the expense of higher financial profits. The interesting case is the case in which $U(\alpha_m, H_r^*, r) < U(\alpha_m, H_s^*, s)$ and $H_s^* \geq H_0$. In this case, the median voter's ideal choice would be the less risky strategy together with rents H_s^*. Yet, this choice is politically not feasible, because at this level of stakeholder rents the dominant investor would not want to implement the desired corporate risk choice. Hence, the median voter must trade off a reduction in nominal labor rents (to be able to provide

incentives to dominant banks) against a decrease in the riskiness of these rents.

It is instructive to ask to what extent the median voter's optimal choice differs from being "first-best optimal". Clearly, if it were possible to perfectly redistribute financial and human-capital wealth in the economy everybody would favor equity dominance, because individual risk would be diversified away. Yet, this comparison makes little sense, because we explicitly build on the assumption that markets are incomplete. A more reasonable benchmark is the classical Rawlsian decision behind the "veil of ignorance", i.e. the voters' decision if they did not know their place in the wealth distribution. In such an ex-ante choice people would take the expectation over α of the expected utility $U(\alpha, H, \sigma)$ in (8). Given that $U(\alpha, H, \sigma)$ is linear in α and that $E\alpha = 1$ by construction, it follows directly from adapting Proposition 2 that this "ex-ante" optimal decision is to choose $H = 0$ and equity dominance. Hence, in expectation - or at an ideal legislative stage - people would prefer to minimize labor rents and to distribute all corporate returns through the financial market. Yet, in practice - once the α's are drawn - voters will choose positive labor rents, inefficient risk-sharing, and possibly bank dominance, because up to a limit they prefer more income over less even if it is risky.[14]

We can now turn to the main comparative statics analysis of interest in our context, and study how the distribution of financial wealth affects the choice of investor influence and labor rents in the economy. Formally, this requires studying how a voter´s α influences her preferences over (H, c), where $c \in \{B, E\}$ denotes either creditor control or equity control. To make this dependence explicit, we re-write the voter´s preferred level of labor rents for a given risk choice as $H^*_\sigma(\alpha)$. Remember from Proposition 2 that $H^*_\sigma(\alpha)$ is uniquely determined by

$$\int_0^{H^*_\sigma(\alpha)} G_\sigma(h)dh = \max(0, \frac{1-\alpha}{A}). \tag{14}$$

Proposition 4 *The preferences of voters with respect to the allocation of dominance in the financial system depend on α as follows.*

[14] "A sparrow in your hands is better than a pidgeon on the roof", as the old German saying goes. This assumes, of course, that the wealth distribution is skewed to the left ($\alpha_m < 1$), which is the case in practice. If $\alpha_m \geq 1$, the median voter produces no distortions.

1. *If*

$$\int_0^{H_r^*(0)} RG_r(R)dR > \int_0^{H_s^*(0)} RG_s(R)dR \tag{15}$$

all voters prefer equity dominance.

2. *If*

$$\int_0^{H_r^*(0)} RG_r(R)dR < \int_0^{\min(R_0, H_s^*(0))} RG_s(R)dR \tag{16}$$

there is an $\overline{\alpha} \in (0,1)$ *such that individuals with* $\alpha > \overline{\alpha}$ *prefer equity dominance, and individuals with* $\alpha < \overline{\alpha}$ *prefer bank dominance.*

3. *If neither (15) nor (16) hold, then there are critical values* $\underline{\alpha} < \overline{\alpha} < 1$ *such that individuals prefer equity dominance if* $\alpha > \overline{\alpha}$ *or if* $\alpha < \underline{\alpha}$*, and bank dominance if* $\alpha \in (\underline{\alpha}, \overline{\alpha})$*. Depending on the parameters, it is possible that* $\underline{\alpha} < 0$ *or that* $\underline{\alpha} > 0$*.*

The proof of the proposition is in the appendix. Proposition 4 provides a strong characterization of the possible voting outcomes. In particular, there are at most three possible regimes for α, and for a broad range of parameters (cases 1 and 2), there are at most two. Furthermore, despite their appearance, the sufficient conditions (15) and (16) are simple to evaluate: the integration bounds $H_\sigma^*(0)$ are straightforward to calculate from (14), and the integrals involve only the c.d.f.s G_σ.

In the first case (condition (15)), the risky strategy $\sigma = r$ is so attractive that all voters, and in particular the median voter, will favor it. In this case, the risk-return trade-off is trivial, because for all voters the risk of the riskier strategy is more than outweighed by its superior return.

In the second case, (condition (16)), the risky strategy is less attractive. Now individuals will choose equity dominance only if they have sufficient financial wealth. Note that the cut-off value $\overline{\alpha}$ is smaller than 1, which implies that individuals with average wealth ($\alpha = 1$) will favour equity dominance. This is not surprising as we know from Proposition 2 that the ideal rents for $\alpha = 1$ under both risk strategies are $H = 0$. Hence, a voter with average financial wealth disregards labor income completely in his choice of corporate governance. Since financial wealth is perfectly diversified, thus riskless, he

simply prefers the strategy with the higher average return. However, individuals with little financial wealth ($\alpha < \overline{\alpha}$) prefer the safer strategy, because they do not gain much from high financial returns, but stand to loose their undiversified labor rents from greater risk-taking.

The remaining case ($0 < \underline{\alpha} < \overline{\alpha} < 1$) highlights the complication that can arise from the fact that households cannot directly control corporate strategy. In this case, individuals with high financial wealth prefer equity dominance and risk-taking as before, and individuals with lower financial wealth are conservative and favor bank control, again as before. But bank control comes at a cost: as argued in Proposition 3: stakeholders who want the safe strategy to be implemented must limit their rents (to $H < H_0$), in order to give banks a sufficient interest in the downside of corporate risks. This constraint does not exist for the implementation of the risky strategy. If the preferred labor rents under the risky strategy are relatively high ($H_r^* \gg H_0$), individuals with very low financial wealth ($\alpha < \underline{\alpha}$) may prefer those rents even if they are riskier. In this case, the very poor and the very rich will both favor equity control. This case only arises in some parameter constellations. For example, it can be shown that it cannot arise if risk aversion A is sufficiently high.[15]

4 Extensions

In this section we sketch four extensions that shed some more light on the basic model of the preceding section and serve as a robustness check.

4.1 Endogenous claims

In the basic model, we have assumed that the human-capital specific claim by individuals had full priority over other claims, in particular over debt:

$$h(R_i) = \min(H, R_i).$$

In this subsection, we show that this form can in fact be derived as the optimal choice in a more general optimization problem in some parameter cases. In other cases, however, the more realistic choice of partial priority is optimal, in which labor and lenders share firm returns in case of bad performance.

[15] More precisely, as the proof in the appendix shows, for this case to arise it is necessary that $A \int_0^{H_0} G_s(R) dR < 1$.

Suppose that the median voter is free to design the form of the function $h(R_i)$. Because of risk aversion, it would clearly be optimal to choose the form (5) if the corporate strategy were fixed: this functional form minimizes the variance for any expected value of $h(R_i)$. However, if a form different from (5) allows to realize higher average rents or a less risky strategy, there is a potential trade-off: an increase in risk from individual rents against higher average rents or a decrease in risk from a change in corporate strategy. This trade-off is relevant when optimal labor rents are less than H_s^* under bank control or when equity is dominant in the basic model. However, if a labor rent of H_s^* is compatible with bank control and if this is optimal, then trivially there is no such trade-off.

Proposition 5 *Suppose that*

$$U(\alpha_m, H_s^*, s) > U(\alpha_m, H_r^*, r) \tag{17}$$

and that $H_s^* < H_0$. Then the median voter optimally chooses the form (5) for labor rents among all possible functions $h(R_i)$.

If (17) does not hold or if $H_s^* > H_0$, the median voter can find it optimal to give partial priority to banks. This allows to give banks a larger share in the downside of corporate profits and thus increase their incentives to intervene conservatively. This can either make it possible to implement the less risky strategy without ceding a higher expected return to the banks (if (17) does not hold), or allow labor to get a larger expected share of corporate profits under the safer strategy (if H_0 is small), which can more than outweigh the increased risk of these rents. In both these cases, our main argument continues to hold that imperfect risk-sharing opportunities affect labor rents and corporate control.

4.2 Redistributive taxation

In the basic model, employees are exposed to firm-specific risk, which may make them choose risk-avoiding arrangements for corporate governance. Clearly, if a perfect insurance market for human-capital risk existed, then there would be no need to suppress risk at the corporate level, so that the optimal political choice would be $\sigma = r$ and equity control. Our principal assumption

has been that such a market does not exist (or does not function well).[16] In this subsection we argue that substitute interventions, which are essentially equivalent to redistributive taxations, generate efficiency losses, and that the overall trade-off analyzed in the basic model is robust, once these inefficiencies are taken into account.

For rents to be riskless, in a world of idiosyncratic corporate risk, they must be based on diversification. In other words, revenues in the economy must be taxed, and the aggregate proceeds redistributed to individuals. In this sense, taxation achieves risk-sharing very much like the financial market in our model. Yet, unlike exchanges on financial markets, taxation typically creates deadweight losses, through distortions in effort provision and factor allocation. We model these losses very simply by assuming that if corporate returns R are taxed at a rate t, then they decrease even before tax. Formally, we assume that under a tax rate t, corporate returns are $R(t) = c(t)R$, where R has the distribution studied in the basic model (i.e., a c.d.f. G_s or G_r) and c is a decreasing function with $c(0) = 1$. We choose this simple formulation, because we have normalized productivity wages to zero, which means that a tax on corporate returns is the best way to describe more general taxation (such as labor income taxes) in our model.

In this extension, after-tax firm returns then are $(1-t)R(t)$ and total tax receipts available for redistribution $b = tR(t)$. We leave all the other features of the basic model unchanged, in particular, we continue to assume that labor rents are constant, have priority over bank debt (but of course not over taxes) and are therefore given by

$$h(R(t)) = \min(H, (1-t)R(t)).$$

Aggregate (individual) financial wealth in the economy is then, mirroring (7),

$$F = (1-t)c(t)\overline{R} - E_R h(c(t)R),$$

public financial wealth available for redistribution

$$b = tc(t)\overline{R} \tag{18}$$

and individual expected utility, mirroring (8),

[16] This assumption is explicitly or implicitly made in much of the labor and public economics literature. For an example of a nice contribution in the spirit of our argument, see Glaeser and Scheinkman (1998).

$$\begin{aligned}\widehat{U}(\alpha, H, t, G_\sigma) &= E_R[\alpha F + b + h(c(t)R)] - \frac{1}{2}A \text{ var}(\alpha F + b + h(c(t)R)) \\ &= b + \alpha(1-t)c(t)\overline{R}_\sigma + (1-\alpha)E_R[\min(H, (1-t)c(t)R)] \quad (19) \\ &\quad -\frac{1}{2}A \text{ var}_R(\min(H, (1-t)c(t)R)). \quad (20)\end{aligned}$$

The problem of the median voter is to choose H, t and the governance structure such as to maximize $\widehat{U}$ subject to the budget constraint (18). Two extreme cases are obvious. If the tax distortion c is nil (i.e. if $c(t) = 1$ for all t), the median voter prefers to obtain rents through taxation rather than through firm-specific compensation. Hence, in this case, $H = 0$, equity becomes dominant, chooses $\sigma = r$, and, as long as $\alpha_m < 1$, all corporate returns are taxed away and redistributed.[17] At the other extreme, if tax distortions are devastating (i.e. $c(t) = 0$ for all $t > 0$), the analysis of Section 3 applies unchanged. For a more realistic, intermediate setting we have an outcome between these two extremes. There will be some taxation and a greater propensity by voters to accept corporate risk. However, the allocational inefficiencies of taxation put limits on this propensity to accept risk. Therefore, although the thresholds identified in Proposition 4 will shift, the qualitative results remain unchanged.

Proposition 6 *In the extended model with redistributive taxation, there are critical values* $\underline{\eta} < \overline{\eta} < 1$ *such that*

- *the voter prefers equity dominance if* $\alpha > \overline{\eta}$,
- *the voter prefers lender dominance if* $\alpha \in (\underline{\eta}, \overline{\eta})$,
- *the voter prefers equity dominance if* $\alpha < \underline{\eta}$.

Compared to the base model, we have $\overline{\eta} < \overline{\alpha}$ *and* $\underline{\eta} < \underline{\alpha}$. *In particular,* $\overline{\eta}$ *and* $\underline{\eta}$ *can be negative.*

[17] Formally, for $H = 0$, utility becomes $b + \alpha_m(1-t)\overline{R}_\sigma = \alpha_m \overline{R}_\sigma + (1-\alpha_m)t\overline{R}_\sigma$.

4.3 Labor Co-determination

Although employees' interests have played an important role in the analysis of the main model, we have not allowed for the possibility of direct labor control, and rather focused on equityholders and banks as the two main potential dominant stakeholders. Yet, in practice employees are a third group of stakeholders that can have considerable weight, and its explicit or implicit influence on corporate governance is strong in many countries.[18] In this extension, we show that our framework allows to also study labor dominance in a simple and natural way.

To this end, we generalize the model to allow for labor as the third possible choice of dominant stakeholder in the political decision process. This means that the voters at the political decision stage determine (H, c) where H is the level of labor rents and $c \in \{E, B, L\}$ denotes the choice of dominant stakeholder between equity, banks, and labor. To make the model more realistic we assume that labor control over corporate decision making tends to be inefficient. As has been widely discussed in the literature on employee co-determination,[19] labor control suffers from at least two main difficulties, the lack of expertise and the free-rider problem in collective decision making. An alternative possibility is that labor delegates corporate control to the state via state ownership, a less efficient (or less controllable) form of governance than private ownership.

To formalize these inefficiencies in a simple way, we assume that labor, when in control of corporate strategy, is unable to make its preferred decision with some probability. In this case, management goes along with equity or banks with some probability each, so that overall labor can impose its favorite strategy only with probability p. We refer to p as labor's effective control capacity.

In this framework, the choice of strategy at the firm level is given by the following immediate generalization of Lemma 1.

Lemma 1 (bis): *If equity is dominant in a given firm, it chooses the riskier strategy $\sigma = r$ regardless of H. If labor is dominant, it prefers the safe strategy $\sigma = s$ if H is not too high. If banks are dominant, there is a $H_0 > 0$*

[18] See Allen and Gale (2000, chapter 4) for an excellent discussion of labor influence and co-determination in an international context.

[19] For some interesting recent contributions, see Gorton and Schmid (2000) or Pistor (1998) and the references therein.

such that the following holds. If $H > H_0$, the dominant bank prefers $\sigma = r$ over s, and if $H < H_0$, it prefers $\sigma = s$.

For the choice of the dominant stakeholder, voters now have a priori two possibilities to implement the safe strategy. Labor control has the downside that the implementation is imperfect, and bank control has the downside that it only yields the desired result if labor rents are restricted to values $H \leq H_0$. The following generalization of Proposition 3 describes this trade-off.

Proposition 2 (bis): *If $H_s^* \leq H_0$, the median voter chooses bank dominance if*

$$U(\alpha_m, H_s^*, G_s) > U(\alpha_m, H_r^*, G_r)$$

and equity dominance otherwise. If $H_s^* > H_0$, there is a $\overline{p} < 1$ such that for $p > \overline{p}$ (high effective labor control), the median voter chooses labor dominance if

$$pU(\alpha_m, H_s^*, G_s) + (1-p)U(\alpha_m, H_s^*, G_r) > U(\alpha_m, H_r^*, G_r)$$

and equity control otherwise. If $H_s^* > H_0$ and $p < \overline{p}$ (low effective labor control), the median voter chooses bank dominance if

$$U(\alpha_m, H_0, G_s) > U(\alpha_m, H_r^*, G_r$$

and equity control otherwise.

It is interesting to note that the medium voter would always choose the safe strategy in his own firm (Lemma 1 bis), but may prefer equity control in the political choice for the system as a whole. Ideally, an individual with sufficient financial wealth would want everybody to adopt the high-risk-high-return strategy, because the risk is fully diversified in the aggregate, but to protect his human capital through a less risky strategy in his own firm. As this is not possible, he renounces his possible direct influence through labor control and commits to the risky strategy by making equity dominant. Proposition 2 (bis) provides a very rough taxonomy of stakeholder influence. If ideal labor rents are not too high (i.e., if the median voter is sufficiently rich financially and sufficiently risk averse), then bank dominance is a better tool to curtail corporate risk taking than direct labor control, because the banks' incentives are perfectly aligned with those of labor and banks are better at corporate governance than labor (or the state). However, if ideal labor rents

are high and labor can control corporate decision making effectively, the median voter may make labor dominant at the expense of banks and equity.

This simple extension has compared labor and bank interests explicitly. In particular, when in control, both labor and banks share the objective of reducing risk. Note that in this case, banks' and employees' incentives are not fully congruent because banks are less conservative than labor. One of the model's shortcomings is that it treats labor control and bank control as substitutes, whereas in practice these may be complements.

4.4 Decentralized Governance Decisions

The assumption that the structure of corporate governance is a direct political decision for all firms is simplistic. A political majority will make legislative choices which in turn affect decision making at the firm level. Yet in any decentralized market economy individual firms may choose their own leverage; and if a firm had no debt at all, it is hard to see how they may be dominated by lenders. [20]

In this section we outline an extension in which legislation may indirectly affect the attractiveness of dominant investor choices, and firms individually determine their own governance system by choosing their amount of leverage.

We introduce a realistic feature of any financial system, namely the fact that debt offers a fiscal advantage to firms.[21] The idea is that a political majority interested in controlling the riskiness of corporate performance may offer some fiscal advantage to shareholders which accept a significant role for lenders in their investment decision. While shareholders of firms with excellent risky opportunities may still opt out of this choice to retain discretion over their investment choices, those for which opportunities are less attractive may accept to become bank dominated.

We distinguish thus between type HG firms, which have investment opportunities with high growth potential but high uncertainty; and type LG firms, whose investment opportunities are less attractive, although more so than the safe strategy. We assume that a political majority can define a

[20] On the other hand, if capital markets are underdeveloped and banks dominate access to capital, they may have vast influence even on currently unlevered firms aiming to expand.

[21] This feature is hard to explain in economic terms, since interest payments are not a business cost but represent returns to investors just as dividends and capital gains, which are usually taxed.

threshold level of leverage such that the firm becomes lender dominated, L_o, and a maximum amount of tax-deductible leverage $r_M L_M$, [22] where r_M is defined as the interest rate such that lenders break even on a loan of size L_M. Thus individual firms may choose to remain equity controlled if they choose a leverage level below L_o, and may not borrow more than L_M. We assume no bankruptcy costs.

With minimal loss of generality, we set $L_o = 0$. In other words, firms which wish to remain equity dominated cannot borrow at all. The political majority will choose a level of L_M to determine the attractiveness of debt financing. The tax saving equals the amount of interest paid to lenders times the profit tax rate t. For the shareholders of both types of firms the choice is between a growth strategy, which requires equity dominance and thus equity financing, and S, which allows it to lever up to L_M. It is easy to see that the shareholders of firms with low growth perspectives have less incentives to invest in their risky investment option.[23]

Note that for both types the return under equity control is independent of the choice L_M, while the value of a safe strategy increases in the tax shields generated by debt, and thus rises with L_M. Thus it is easy to see that there is a L_M^* such that if $L_M \geq L_M^*$, then HG firms will choose all equity financing and equity control while LG firms will choose leverage and bank dominance.

Interestingly, the political choice on governance may depend on whether the median voter happens to be employed by a firm in a mature or in a growth industry. While a worker in a mature industry would prefer a bank dominated system, the worker in a high growth sector whose shareholders opt out of bank dominance would strictly prefer market dominance for the whole economy.

Suppose alternatively that richer voters are more likely to work for a HG firm (perhaps because this requires higher education, and education may depend on family wealth). Then there may be a visible divide in the population's preferences over the role of markets, as poorer citizens working for mature sector seek to avoid equity dominance in their sector, while financially wealthier citizens would prefer overall equity control. Note here that even the poorer voters would prefer the high growth firms to maximize profits, since this increases tax revenues and thus social insurance.

[22] A maximum leverage is realistic as an unlimited tax-deductible leverage would alter lender incentives, and may lead to excessive risk taking.

[23] Since the composition of all individual portfolios is the same and includes lenders' return, there are no redistributional effects of debt versus equity besides any fiscal effect.

Of course, in practice the tax rate will also be an endogenous choice.[24] If we assume that tax revenues are used to fund social benefits, there is a natural trade off between controlling firms' idiosyncratic risk by governance, which requires a fiscal discount, and compensating workers exposed to greater risks by using fiscal revenues paid by their firms. In fact, since there is presumably a fiscal disincentive in profit taxation, it may be efficient to subsidize fiscally reduced corporate risk via a deduction on payments to lenders. This could thus represent a justification for the deductibility of interest but not of dividend payments.[25]

5 A Review of Empirical Evidence

The model generates empirical implications for corporate governance and the extent of stakeholder rents as a function of the distribution of financial wealth and human capital in an economy. In a nutshell, the model predicts different clusters of governance and legislative features associated with more or less unequal distribution of financial wealth, as well as with the relative endowment in human capital. Note that as our approach relies on the assumption of a fully democratic process, it is better suited to describe institutional choices in more developed countries.

One configuration we predict to be associated with a diffused distribution of financial wealth, is equity dominance, weak employee protection, low or no minimum wages, developed equity markets, arrangements for ensuring congruence of interests between management and shareholders (such as a permissive takeover code), weak control rights of creditors in bankruptcy, more volatile corporative earnings, and higher bankruptcy rates (holding the leverage ratio constant). Another possible configuration we predict is bank dominance, possibly some employee representation in corporate decision making, active intervention by lenders in states of financial distress, less developed equity markets, a weak or nonexistent market for corporate control, strong

[24] Note that if the risky strategies were much more profitable and not discouraged by taxation, even a voter with zero financial wealth would prefer the higher social benefits permitted by the higher tax revenues associated with equity control and risky strategies.

[25] The tax subsidy L_M^* necessary for bank governance to be chosen by some firms is a decreasing function of t, so in the presence of some disincentive effects (such as discussed in Section 4.3) there will be an optimal tax rate which balances the two forms of risk control.

stakeholder rights, high labor costs and less volatile earnings.[26]

Unfortunately, comparative data on many of these variables are limited. Concerning our independent variables, the model compares human-capital-related wealth with financial wealth for the median class. If we assume that human-capital-related wealth is more or less similar in advanced economies with similar GDP per capita, we need to know the distribution of financial wealth in different countries. Only limited data is available on this distribution.

Table 1: Gross financial assets ultimately owned by households

Country	$ billion	Value/GDP	% held directly	% held by pension funds
Germany	2,900	1.46	67	4
France	2,689	1.90	62	2
Japan	12,936	2.71	71	10
U.K.	3,107	2.97	40	24
U.S.	20,815	3.00	58	17

Note: Aggregation of direct asset holdings, pension fund assets, assets of insurance companies, and assets in mutual funds and other collective investment schemes, end of 1994
Source: Miles (1996), cited in Allen and Gale (2000)

Fortunately, some data on the size and distribution of financial wealth in several countries of particular interest interest is available. Table 1 shows that, in the group of the U.S., U.K., Japan, France, and Germany, total financial asset holdings (per GDP) are highest in the U.S. and the U.K., and far lower in France and Germany. In this ranking, Japan is close to the U.S. and the U.K.

Table 2: Portfolio allocation of households' total financial wealth

[26] Additional features of equity dominance, not identified in this model but analyzed elsewhere (Perotti and von Thadden, 2001) are a higher level of competition, corporate transparency, and more informative stock prices.

Country	Cash and Cash equivalents	Bonds	Loans and Mortgages	Equity
Germany	36	36	4	13
France	38	33	2	16
Japan	52	13	6	12
U.K.	24	12	1	52
U.S.	19	28	3	45

Note: Aggregation of direct asset holdings, pension fund assets, assets of insurance companies, and assets in mutual funds and other collective investment schemes, in percent, end of 1994
Source: Miles (1996), cited in Allen and Gale (2000)

Table 2 shows the breakdown of assets in Table 1 into the main asset classes. The U.S. and the U.K. are again at one end of the spectrum, France and Germany are at the other extreme, joined by Japan. The average household in the U.K. and the U.S. in 1994 held around 50 percent of his total financial wealth in shares, the average household in Germany, France, and Japan only around 15 percent. Although in the model we do not consider the households' portfolio choice over risky and riskless asset classes, this information is quite suggestive in the light of our analysis. According to these data, households in the U.K. and the U.S. should be much more concerned with equity returns than households in Germany, France, and Japan.

Table 3: Proportion of Households owning shares, Wealth Quartiles

Country	Quartile 1	Quartile 2	Quartile 3	Quartile 4	Average
Germany	6.6	17.6	22.1	29.3	18.9
Italy	3.4	10.8	19.6	38.9	18.7
Netherlands	4.4	16.9	36.8	75.9	35.1
U.K.	4.9	11.9	37.8	71.1	31.4
U.S.	4.4	38.3	66.0	86.7	48.9

Note: Data from 1998
Source: Guiso, Haliassos and Jappelli (2002)

Finally, there exist some data on the distribution of financial wealth in the population, mostly with respect to share ownership. Guiso, Halassios, and

Japelli (2002) present survey data from several countries on the percentage of the population holding stocks across income classes (see Table 3). In 1998, direct and indirect stock market participation by the median income class, the critical voting group, was around 20 % in Italy and Germany.[27] On the other hand, 2/3 of the households in the median income class in the U.S. owned shares, with slightly below 40 percent in the Netherlands and the U.K.

These direct data on household wealth put the U.S. and the U.K. into one group and France and Germany into another, with Japan closer to Germany, Italy and France. An important indirect source of household wealth, pensions, confirms this dichotomy. For many medium income households, pensions are the main form of long-term savings. It is therefore interesting to note (see Table 1) that in the U.K. and the U.S. private pension funds are an important vehicle for household savings, whereas they play a negligible role in France and Germany, with Japan occupying a middle ground. Since capitalized pension funds rely on market returns for their performance, whereas the pay-as-you-go systems of France and Germany rely on redistributional taxation this has a considerable impact on households' appreciation of financial market returns. It is interesting to note that in the U.S., according to a recent study Merrill Lynch, 43 percent of the workforce is covered by capitalized pension funds, suggesting that the performance of pension funds, in sharp contrast to Germany and France, probably is high on the agenda of a large part of the voting population.

The distinction outlined above corresponds fairly clearly to the distinction between outsider/arm's length systems versus insider systems (La Porta et al. (1998), Mayer (1998)). This classification identifies the U.S., the U.K. and some other common law countries such as Australia and Canada as equity-market oriented. Large firms in these economies are typically characterized by diffuse ownership, in part pooled in large institutional funds (such as mutual or pension funds), and stock markets are well developed. In contrast, in most of Continental Europe and Japan banks hold a very influential position, and capital markets are historically relatively underdeveloped.[28]

The comparison in the literature between insider and outsider systems has focused on issues of efficiency and distributional issues among investors.

[27] More aggregate data exists for France and Austria, which also indicate a fairly unequal distribution of equity holdings.

[28] For an excellent survey of the main issues and evidence on these different types of financial systems, see Allen and Gale (2000).

The focus of our approach is instead on risk choices and distributional issues between investors and stakeholder interests. There is much evidence that political priorities on the protection of stakeholder rents are quite different in the U.S. and the U.K. on the one hand, and in France, Germany and Japan on the other. A telling piece of evidence is given by Yoshimori (1995, cited by Allen and Gale (2000)). When asked whether the company exists for the interest of all stakeholders or whether shareholders should be given first priority, 97 percent of surveyed senior managers in Japan, 83 percent in Germany and 78 percent in France responded that all stakeholders were important. On the other hand, 76 and 71 percent, respectively, of U.S. and U.K. managers put shareholders first.

The differences on the role of banks are well documented. Carney (2002) shows evidence that the ratio of bank assets to stock market capitalization is correlated with greater labor influence and a history of left-wing governments, as well as with proportional voting systems (versus majoritarian voting). Prowse (1995) argues that even when main banks in Germany and Japan hold equity in their borrowers, their behavior appears to be dominated by their role as lenders. Both for Germany and Japan, there is evidence that bank dominance may bias the borrowers' investment decision towards low risk projects (Gorton and Schmidt (2000), Morck and Nakamura (2000), Nakatani (1984)).

On the evidence for a different orientation to risk, Claessens and Klapper (2002) find that bankruptcy rates are higher in market oriented and in common law countries than in those with a German and French legal origin, after controlling for leverage, firm size and business cycles. This suggests more corporate risk-taking in economies dominated by diffused equity. To the extent that less risky corporate strategy reflect less aggressive competition, we expect bank dominance to be associated with less entry, exit and more stability in product markets. Interesting evidence to this effect is offered by He, Morck and Yeung (2003), who find that countries in which there is less turnover in the ranking of the largest companies tend to have more state intervention, higher taxes, less developed equity markets and more debt financing. In fact, corporatist societies appear to discourage entry and what they consider excessive competition, and favor the interests of producers (and thus stakeholder rents) over those of consumers. In this sense, our argument is similar to that of Hellwig (1998), who argues that bank control can simply be a collusive device that protects management from outside pressure in the financial or product markets.

In many Continental European countries, and even more so in Asian and Latin American countries, family ownership and governance together with equity pyramids and corporate group structures play a major role (see, e.g., Carpenter and Rondi (2000) for the case of Italy). Although our model does not feature family ownership, it is simple to extend it to include concentrated ownership. Family owners share a large risk exposure to undiversifiable firm-specific risk with the less wealthy, thus we would expect their risk preferences to be rather aligned with those of banks than with diversified equity investors.[29] This is consistent with the finding by Anderson, Mansi and Reeb (forthcoming, 2003) that founding-family ownership in large, publicly traded firms is associated with a lower cost of debt financing.

In the model, dominance is the result of a politically-directed legislative choice, even if firms choose their own capital structure. Thus it is not necessarily the amount of capital supplied that grants control to debt versus equity, but the legislative and regulatory context. The level of lender influence is influenced by many types of regulation, which together with tax laws can affect the attractiveness of bank debt, the influence of large banks or discourage equity market development and financing. Legislation hostile to takeovers can discourage diffuse equity holdings and reduce their influence vis-a-vis large shareholders. Banking regulation can influence the degree of competition among banks and thus their bargaining power vis a vis borrowers. Corporate law can directly dictate the creation of supervisory boards where lenders and stakeholders have influence, as in Germany and Austria, and to a somewhat lesser extent in Switzerland and France. An interesting case in point are IPOs, the classical means for a firm to emancipate itself from bank dominance. In a study of the German IPO market, Franzke, Grobs, and Laux (2001) note that between 1988 and 1995 there were only 151 IPOs in Germany, compared to more than 1000 in the U.K. They argue that this large discrepancy was due partly to legal impediments, and partly to the resistance of banks, who had significant influence on the relevant stock exchange committees and the listing process.

Finally, bankruptcy law is a good example of a legally-determined allocation of control rights in times of financial distress or default. It directly influences the allocation of control in firms in financial distress, as it dictates who

[29] Roe (2000) proposes that insider governance systems (both the bank and the family dominance models) thrive in social democracies because in socially-oriented political cultures, more oriented towards redistribution, owners need to establish controlling position to resist the strong bargaining power by stakeholders.

has the most bargaining power once financial distress arises, and to whom control may shift. Main banks in Japan and Germany are very influential in managing restructuring for firms in financial distress,[30] unlike the US where Chapter 11 allows managers and shareholders to remain in charge during restructuring. In many countries there are forms of state-aided debt renegotiation which grants significant influence to banks (e.g. Italy); in France, state judges have a strong statutory role and typically aim at protecting stakeholders. Since to exert control, debt holders must act in a concerted manner, legislation and tax laws on bonds typically affect the importance of institutions versus markets. An extreme example is Japan, where until the 1980s corporate bond issues were (rarely) authorized by a committee dominated by the main banks. Armour, Cheffins, and Skeel (2002) point at a correlation between bankruptcy laws and insider systems.

Ultimately, a structural model should explain not just the cross sections of financial system features but also their evolution. Institutional arrangements have great inertia, but political majorities tend to press for reform at critical historical junctions. Roe (1994, 2000), Biais and Perotti (2002) and Rajan and Zingales (2000, 2001) have suggested that major shifts in governance arise from legislative changes in response to political pressure.

In terms of our model, any financial crisis or bouts of very high inflation resulting from war which wipes out the financial holdings of the middle class may produce a political majority which chooses to protect stakeholders and suppress the role and scope of financial markets. Some European and Latin American countries adopted greater regulatory constraints on capital markets, more state ownership and protectionism in the interwar period, in response to the crash of 1929 and the Great Depression. In general, state ownership emerged in many countries (France, Italy, Austria) in the 1930s as a political reaction to the financial market collapse and output decline which affected most of the population. State ownership or state spending has been associated with a political desire for social insurance in periods of great uncertainty. Rodrik (1998) shows evidence that developed countries with large exposure to trade have larger public sectors, and interprets it as a political choice for greater social insurance in the face of uncertainty induced by more competition.

A rich body of evidence suggests that stronger minority investor protections reduces the value of control and encourage diffusion of financial holdings

[30] See Brunner and Krahnen (2000) for detailed evidence on Germany.

(LaPorta et al., 1997, 1998). An interesting first interpretation has viewed most of these distinctions as historically determined through the countries' legal origin; but recent evidence has suggested that the relative ranking of capital market development as well as the concentration of ownership varies over time across countries, and thus cannot be solely described by its static legal origin. For instance, civil law countries such as France and Belgium appear to have been markedly more financially developed than the US for a long period early last century (Rajan and Zingales, 2000). Historical studies of incorporation laws (Lamoreaux and Rosenthal, 2001) suggest that protection of passive partners (i.e. investors not involved in management) was better in France than in the US in the 1800s (although rules for entry of new incorporated firms was more restrictive). This may have well reflected the interests of the richer (and voting) *rentier* part of the population. Interestingly, entry was significantly relaxed under Napoleon 3rd, at the time of the political emergence of a more entrepreneurial, commerce-oriented bourgeoise.

Roe (1994) has argued that the sharper separation of ownership and control in the US which produced diffused ownership occurred as the result of a strong popular backlash against concentration of financial power. A first reform wave occurred at the time of trust-busting at the turn of the previous century. A second took place after the crisis of 1929, forcing banks and large institutional investors not to become too involved in corporate governance, strengthening individual investor rights as well as undermining the creation of powerful nationwide banks.[31] In contrast, in other countries a high concentration of ownership may have emerged to defend ownership rights to capital against strong labor demands (Roe, 2000). Our argument is that the key to the different political response of the US (and to some extent the UK) relative to Continental Europe and Japan may well reside in the greater stability of the investment portfolio of the middle class, never devasted by extreme inflation as France, Germany, Italy and Japan were after the first World War.

6 Conclusions

This paper advocates the view that both finance-related legislation and the form of corporate governance must be endogenous to the evolving political

[31] The tightening of minority protection rules in the UK in 1948 have been connected with a political backlash against opportunistic behavior by large owners during the 1930s.

majority view.

In our model the principal governance decision is between bank versus equity dominance, although we also discuss a role for labor control, state ownership, or family-controlled groups. We restrict attention to truly democratic societies, as the pivotal decision maker in our approach is the median voter. Her preference for either more risk-averse lenders or risk-inclined equity holders is shown to depend on the distribution of financial wealth relative to human capital. This distribution is skewed when financial holdings are concentrated among the richer voters. In that case the median voter has relatively more at stake in the form of human capital invested within the firm, whose compensation takes the form of stakeholder rents. Such a voter prefers bank dominance as this ensures more conservative firm behavior relative to the case of equity dominance.

The combination of high stakeholder rent protection, weak rights for shareholders, a strong role for institutions and a relatively conservative approach to investment resembles the structure of so called corporatist economic systems, such as continental Europe or Japan. We have identified as possible implications of our theory several related features of these systems.

Our approach can help to explain what seems to be the UK-puzzle in corporate governance theory: "The United Kingdom presents an interesting contrast to the United States. It has a similar separation of ownership and control in corporations but very different financial institutions. In particular, the banking system is concentrated and ... there are few if any explicit restrictions on the activities that banks may undertake ... Nevertheless, banks have chosen not to become involved in corporate governance... This comparison is difficult to reconcile with the idea that it is politics and legal and regulatory constraints that is the sole determinant of differences in corporate governance across countries" (Allen and Gale (2000), pp. 110-111). Our theory suggests that this conclusion is too simple. As the evidence on financial wealth in the last section shows, the median voter in the UK is very similar to the one in the U.S. in his orientation to financial returns. Hence, it is not surprising that he also supports political structures that restrict the banks' powers and enhance the role for market investors.

A challenge for future research is to introduce some genuine dynamics in the analysis. In principle, the approach has implications for major institutional changes as a result of changes in voter preferences as the relative endowment and distribution of human and financial capital evolves over time. This evolution may be the result of external technological change (which may

alter the relative attractiveness of risky investment), demography (which may affect the evolution of pension financing), or by economic and financial integration (which may induce more competition among institutional forms). It may also be affected by political choices which influence the allocation of individual portfolios. In our opinion, the recent literature on the political economy of finance holds some promise to explain both the foundations of institutions relevant for financial development and growth, as well as their evolution.

7 Appendix

7.1 The Median-Voter Theorem:

In this appendix we show that the Median-Voter Theorem holds in our two-dimensional decision problem. The argument is trivial (but it may be useful to see it developed).

Consider two alternative propositions (H^A, c^A) and (H^B, c^B) put before the electorate. Let σ^A and σ^B be the strategy choices by the dominant investors under the two alternatives (which are uniquely defined by Lemma 1). Then, using the explicit utility function derived in (11), voter α prefers A over B if and only if

$$\alpha(\overline{R}_{\sigma^A} - H^A + \int_0^{H^A} G_{\sigma^A}(R)dR) + T(\sigma^A, H^A) \tag{21}$$

$$> \quad \alpha(\overline{R}_{\sigma^B} - H^B + \int_0^{H^B} G_{\sigma^B}(R)dR) + T(\sigma^B, H^B), \tag{22}$$

where $T(\sigma, H)$ is a term not involving α. Because of the linearity of (21) in α, the choice of the median voter is the unique Condorcet winner of the vote (supported either by all $\alpha < \alpha_m$ or all $\alpha > \alpha_m$).

7.2 Proof of Proposition 4:

To simplify notation, denote the integral of G_σ by

$$\Gamma_\sigma(R) = \int_0^R G_\sigma(r)dr.$$

Then (14) becomes $\Gamma_\sigma(H^*_\sigma(\alpha)) = \max(0, \frac{1-\alpha}{A})$.
Define $\alpha_0 < 1$ by

$$\alpha_0 = \max(0, 1 - A\Gamma_s(H_0)).$$

By (14), the voter's preferred choice of H under the safe strategy satisfies $H^*_s(\alpha) < H_0$ if and only if $\alpha > \alpha_0$. On the other hand, by Proposition 3, if $\alpha \leq \alpha_0$ and the voter wants to implement bank control, she chooses $H = H_0$

In order to evaluate the voter´s preferences over bank versus equity control, we first compare the ideal levels of utility under the safe and the risky strategy. By inserting (14) into (11), these utility levels are

$$\begin{aligned} u_\sigma(\alpha) &= U(\alpha, H^*_\sigma(\alpha), \sigma) \\ &= \begin{cases} \alpha\overline{R}_\sigma & \text{if } \alpha \geq 1 \\ \alpha\overline{R}_\sigma - \frac{(1-\alpha)^2}{2A} + A\int_0^{H^*_\sigma(\alpha)} RG_\sigma(R)dR & \text{if } \alpha \leq 1 \end{cases} \end{aligned} \tag{23}$$

for $\sigma = s, r$. The u_σ are continuously differentiable, and the Envelope Theorem implies

$$\begin{aligned} u'_\sigma(\alpha) &= U_\alpha(\alpha, H^*_\sigma(\alpha), \sigma) \\ &= \int_{H^*_\sigma(\alpha)}^{\infty} (R - H^*_\sigma(\alpha))dG(R) \\ &> 0 \end{aligned} \tag{24}$$

Furthermore, for $\alpha < 1$,

$$u''_\sigma(\alpha) = \frac{dH^*_\sigma(\alpha)}{d\alpha}\left(-\int_{H^*_\sigma(\alpha)}^{\infty} dG(R)\right) > 0$$

Hence, the u_σ are strictly increasing and are strictly convex for $\alpha < 1$. The final property of u of interest is a single-crossing property. By the definition of R_0 (as the intersection of G_s and G_r), we have $\Gamma_r(R) > \Gamma_s(R)$ for all $R \leq R_0$. Therefore and because $H_0 < R_0$, if $H^*_s(\alpha) \leq H_0$, then $H^*_r(\alpha) < H^*_s(\alpha)$. As argued above, $H^*_s(\alpha) \leq H_0$ iff $\alpha \geq \alpha_0$. Combining this with (24) shows that for $\alpha \geq \alpha_0$,

$$u'_r(\alpha) > u'_s(\alpha). \tag{25}$$

Hence, for $\alpha \geq \alpha_0$ the graphs of u_s and u_r can intersect at most once.

As argued in Proposition 3, if an individual wants the risky strategy to be implemented, she chooses equity control and $H = H_r^*(\alpha)$. However, if she wants the safe strategy, she chooses lender control and $H = H_s^*(\alpha)$ if $\alpha \geq \alpha_0$ or $H = H_0$ if $\alpha < \alpha_0$. Hence, the optimal utility from the safe strategy is, using (11),

$$v_s(\alpha) = \begin{cases} u_s(\alpha) & \text{if } \alpha \geq \alpha_0 \\ \alpha(\overline{R}_s - H_0 + \Gamma_s(H_0)) + T & \text{if } \alpha < \alpha_0 \end{cases}$$

where

$$T = \frac{A}{2}\Gamma_s(H_0)^2 - (1 + AH_0)\Gamma_s(H_0) + H_0 + A\int_0^{H_0} RG_s(R)dR. \tag{26}$$

One easily verifies that v_s is continuous and differentiable. Clearly, $v_s < u_s$ for $\alpha < \alpha_0$ (the individual has to make a concession to the lender to have her preferred strategy implemented).

Individual α´s choice therefore is between $u_r(\alpha)$ and $v_s(\alpha)$.

As $\alpha_0 < 1$, we have $u_r(1) > v_s(1)$, which proves that $\overline{\alpha} < 1$: for $\alpha \geq 1$ risky investment and equity dominance are preferred. Furthermore, by the single-crossing property (25), the strict convexity of u_r and because v_s is linear for $\alpha < \alpha_0$, the graphs of u_r and v_s can intersect at most twice. They intersect not at all if $u_r(0) > u_s(0)$ (by (23) this is (15)); in this case, the graph of u_r lies above that of u_s for the whole of $[0, 1]$. If they intersect twice, $v_s < u_r$ to the left of the left intersection ($\underline{\alpha}$) and to the right of the right intersection ($\overline{\alpha}$), while $v_s > u_r$ for $\alpha \in (\underline{\alpha}, \overline{\alpha})$.

The two graphs intersect exactly once iff $v_s(0) > u_r(0)$. If $\alpha_0 = 0$ this condition is simply $u_s(0) > u_r(0)$, which is equivalent to

$$\int_0^{H_s^*(0)} RG_s(R)dR > \int_0^{H_r^*(0)} RG_r(R)dR.$$

As $\alpha_0 = 0$ implies $H_s^*(0) \leq H_0$, this yields one part of condition (16).

If $\alpha_0 > 0$, note that by the definition of α_0, $\Gamma_s(H_0) < 1/A$ and that $v_s(0) = T$, given by (26). Using the fact that the real-valued function $y(x) = Ax^2 - 2(1 + AH_0)x$ is strictly decreasing for $x < 1/A$, we can, therefore, replace $\Gamma_s(H_0)$ in (26) by $1/A$ to obtain

$$\begin{aligned} v_s(0) &> \frac{A}{2}(\frac{1}{A})^2 - (1 + AH_0)\frac{1}{A} + H_0 + A\int_0^{H_0} RG_s(R)dR \\ &= -\frac{1}{2A} + A\int_0^{H_0} RG_s(R)dR. \end{aligned}$$

As $\alpha_0 > 0$ implies $H_s^*(0) > H_0$ and as $u_r(0) = -\frac{1}{2A} + A\int_0^{H_r^*} RG_r(R)dR$, this shows that condition (16) is indeed sufficient for $v_s(0) > u_r(0)$ also in this case.

8 References

Allen, Franklin and Douglas Gale (2000), *Comparing Financial Systems*, Cambridge: MIT Press.

Anderson, Ronald, Sattar Mansi and David Reeb (2003), "Founding Family Ownership and the Agency Cost of Debt", forthcoming, *Journal of Financial Economics*.

Aoki, Masahiko (1988), *Information, Incentives and Bargaining in the Japanese Economy*, Cambridge University Press, Cambridge.

Armour, John, Brian Cheffins and David Skeel (2002), Corporate Ownership Structure and the Evolution of Bankruptcy Law: Lessons from the UK, mimeo, University of Cambridge

Biais, Bruno and Enrico Perotti (2002), "Machiavellian Privatization," *American Economic Review*, March.

Bolton, Patrick and Howard Rosenthal (2002), "Political Intervention in Debt Contracts", *Journal of Political Economy* 110, 1103-1134.

Brunner, Antje and Jan-Pieter Krahnen (2000), "Multiple Lenders and Corporate Distress: Evidence on Debt Restructuring", manuscript, Universität Frankfurt.

Carpenter and Rondi (2000), "Italian Corporate Governance, Investment and Finance", mimeo, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=245450.

Carney, R.W., The Political Economy of Financial Systems", PhD dissertation, Political Scirence Department, UC San Diego, 2002.

Claessens, Stijn and Leora Klapper (2002), "Bankruptcy around the World: Explanations of its Relative Use", Manuscript, World Bank.

Franzke, Stefanie, Stefanie Grobs, and Christian Laux (2001), "Initial Public Offerings and Venture Capital in Germany", manuscript, Universität Mannheim.

Glaeser, Edward C. and Jose Scheinkman (1998), "Neither a Borrower nor a Lender Be: An Economic Analysis of Interest Restrictions and Usury Laws", *Journal of Law and Economics* 41, 1-36.

Gorton, Gary and Frank Schmidt, (2000), "Universal Banking and the Performance of German Firms", *Journal of Financial Economics* 58, 46-47

Guiso, Luigi, Haliassos, M. and Tullo Jappelli (2002), "Introduction", in: *Household Portfolios*, MIT Press, Cambridge.

Hart, Oliver, 1995, *Firms, Contracts and Financial Structure,* Oxford University Press.

He, Kathy, Randall Morck, and Bernard Yeung (2003), "Corporate Stability and Economic Growth", mimeo, New York University

Hellwig, Martin (1998), "On the Economics and Politics of Corporate Finance and Corporate Governance", manuscript, Universität Mannheim.

Hermalin, Benjamin and M. Katz, "Corporate Diversification and Agency", in P. Hammond and G. Miles (eds.), *Incentives, Organizations and Public Policy: Essays in Honor of Sir James Mirrlees*, Oxford University Press, Oxford

Kroszner, Randall S. and Philip E. Strahan, (2000) "Obstacles to Optimal Policy: The Interplay of Politics and Economics in Shaping Bank Supervision and Regulation Reforms, forthcoming in Frederic S. Mishkin (ed.), *Prudential Supervision: What Works and What Doesn't*, NBER, Cambridge, Mass.

Lamoreaux, Naomi and Jean Laurent Rosenthal, (2001), Organizational Choice and Economic Development: A Comparison of France and the US during the Mid-18th Century, mimeo, UCLA

LaPorta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny (1997), "Legal Determinants of External Finance", *Journal of Finance* 52, 1131-1150.

LaPorta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny (1998), "Law and Finance", *Journal of Political Economy* 106,

Mayer, Colin (1988), "New Issues in Corporate Finance", *European Economic Review* 32, 1167-1183.

Mayer, Colin (1998), "Financial Systems and Corporate Governance: A Review of the International Evidence", *Journal of International and Theoretical Economics* Vol 144, 154

Morck, Randall and Masao Nakamura (2000), "Japanese Corporate Governance and Macroeconomic Problems", HIID Dp 1893.

Pagano, Marco and Paolo Volpin (2000), "The Political Economy of Corporate Governance", manuscript CSEF, Università di Salerno.

Pagano, Marco and Paolo Volpin (2001), "The Political Economy of Finance", manuscript CSEF, Università di Salerno.

Perotti, Enrico and Ernst-Ludwig von Thadden (2001), "Strategic Transparency and Dominant Investors", manuscript, Université de Lausanne.

Pistor, Katharina (1998), "Co-Determination in Germany: A Socio-Political Model", *Corporate Governance Today* (Columbia Law School), 387-

Prowse, Steve (1995), "Corporate Governance in an International Perspective: A Survey of Corporate Control Mechanisms Among Large Firms in the U.S., U.K., Japan and Germany", *Financial Markets, Institutions, and Instruments* 4, 1-63.

Rajan, Raghuram, and Luigi Zingales (2000), "The Great Reversals: The Politics of Financial Development in the 20th Century", Working Paper, University of Chicago.

Rajan, Raghuram, and Luigi Zingales (2001), "The Politics of Financial Development", working paper, University of Chicago.

Rodrik, Dani, (1998) "Why Do More Open Economies Have Bigger Governments?", *Journal of Political Economy* 106, 997-1032.

Roe, Mark (1994), *Strong Managers Weak Owners: The Political Roots of American Corporate Finance*, University Press, Princeton, NJ

Roe, Mark (2000), "Political preconditions for separating ownership from corporate control", *Stanford Law Review* 53, 561-66.

Saint-Paul, Gilles (2002), "The Political Economy of Employment Protection", *Journal of Political Economy* 110, 672-704.

Shiller, Robert (1993), *Macro markets: creating institutions for managing society's largest economic risks*, Oxford: Oxford University Press.

Shleifer, Andrei and Larry Summers (1988), "Breach of Trust in Hostile Takeovers", in A. Auerbach (ed.), *Corporate Takeovers: Causes and Consequences*, University of Chicago Press, 33-56.

Welch, Ivo (1997), "Why Is Bank Debt Senior? A Theory of Asymmetry and Claim Priority Based on Influence Costs", *Review of Financial Studies*, 10, 1203-1236.