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# The Political Economy of Bank- and Market Dominance

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## **Abstract**

Legislation affects corporate governance and the protection of stakeholders versus investor claims. We allow the preference of a political majority to determine both the governance structure and the extent of stakeholder claims. 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 stakeholder rents are exposed to undiversifiable firm-specific risk. In general, stakeholders and lenders prefer less corporate risk, since their claims are a concave function of firm profitability. This congruence of interests will lead the political majority in such a society to support bank over equity dominance. As shareholdings by the median voters increase, the dominance structure will switch towards favoring equity markets with riskier corporate strategies and higher profits.

# 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 markets have less influence, and strong direct ties exist between companies and financial intermediaries. In the more popular debate, banks are often accused of being too conservative and opaque, while markets are accused of forcing excessive short-term pressure on managerial decisions, and to be ruthless to stakeholders (Shleifer and Summers, 1988).

This paper takes a novel approach, more positive than normative, to answer the question of why such alternative governance structures come to exist in the first place. We model the political preference of a democratic majority over the allocation of corporate control. Specifically, we analyze when the prevailing view would be to grant *ex legis* a major governance role to banks rather than to markets, and specifically equityholders, and analyze the implication for corporate investment and economic growth. We show how dominant investors affect corporate investment decisions and what distributional effects this has between returns to financial and human capital. Thus governance affects the welfare of the median voter, and the preference of the political majority over governance depends on the distribution of financial wealth.<sup>1</sup>

In the modern theory of ownership, corporate control rights are assigned to equityholders outside of bankruptcy, and are residual to contractual obligations and legislation (Hart, 1995). Thus the legal environment constrains and defines control rights. Legislation on the role on the supervisory board and its composition, the possible creation of legal liability for intervening creditors, the ability of shareholders to act in concert, are all examples of a legally-determined allocations of control rights and have an obvious impact on the practice of corporate governance.<sup>2</sup>

Political influence on corporate governance arises not only from explicit

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<sup>1</sup>See Pagano and Volpin (2001) for an excellent survey of the emerging field of political economy and finance.

<sup>2</sup>The German *Depotstimmrecht*, where banks do not own the shares deposited with them by individual investors but are by default able to vote them, has been an example of a nontransferable source of voting rights separated from ownership.

codification of corporate law but also indirectly from the chosen degree of enforcement, or by trade or labor regulations, or by regulatory choices on the financial system (for the U.S. case, see Kroszner and Strahan (2000)), which may assign more legal or market power to institutions or management vis a vis dispersed investors. Thus firms may be either debt- or equity-dominated independently of the amount of capital provided or conventional voting arrangements.<sup>3</sup>

An influential literature on the determinants of financial development (La Porta, Lopez-di-Silanes, Shleifer, Vishny (1997,1998)) argues that the origin of the country's legal system influences the structure of financial markets and governance. According to North and Weingast (1986), the AngloSaxon legal system developed in a context of greater contractual autonomy for private owners and greater protection for investors, promoting capital market development. Yet even in the U.S. corporate governance has been significantly affected by political choices; Roe (1994) argues that popular opinion early in the last century forced legislation restricting any active governance role of institutional equity investors. Rajan and Zingales (2000) review the history of large reversals in capital market development across countries and argue that political considerations led to major changes in legislation, affecting significantly corporate governance.<sup>4</sup>

In our model, a democratic political majority determines both the form of return to human capital and the allocation of corporate control, which has relevance for the corporate investment decisions. Since investment choice has a distributional effect between returns to financial and human capital, it affects the welfare of the median voter.

In general, we show that both stakeholders and lenders prefer less risk, since their claims are a concave function of firm profitability, while equity investors prefer the alternative of higher risk and return. In particular, return to specific human capital invested in the firm cannot be diversified.<sup>5</sup>

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<sup>3</sup>The relative control of small and large equityholdings also depends on the degree of investor protection. Pagano and Volpin (2000) show how the degree of protection of minority shareholders offered by legislation may be the result of a political alliance between stakeholders and majority investors, which results in a "corporatist" system protecting their rents against financial market investors.

<sup>4</sup>If the judiciary system is sensitive to political preferences (judges are often elected or politically appointed), then also actual enforcement may reflect political preferences, whatever the letter of the law.

<sup>5</sup>Aoki (1984, 1988) argues that in a consensual firm governance structure, such as in some Japanese firms, such risk may be reduced by deliberate risk sharing such as

Thus equity dominance is preferred by voters with a higher ratio of financial wealth to stakeholder rents. 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, whose compensation takes the form of stakeholder rents, and would therefore support bank dominance.<sup>6</sup> Equity dominance results in riskier investment strategies and potentially a higher rate of innovation and growth, but leads to greater risk bearing for firm-specific risks.

In addition, voters can also determine the return to human capital, by affecting legislation on minimum wage, work security and conditions, and pension and seniority rights. We show that stakeholder claims are endogenously determined to be of lower risk than financial claims, and thus concave in firm value. We finally show that societies with a more unequal distribution of financial holdings will vote for higher stakeholder rents. This implies that the political majority influences the risk and return profile of financial returns as well.

The political system is assumed to be a democracy, so that a majority of individuals chooses the legislators; as a result, political choices about the allocation of control over strategic decisions in the corporate sector will reflect the preferences of the middle class.

Table 1a: Proportions of share owning households

<b>Country</b>	<b>1989</b>	<b>1995</b>	<b>1998</b>
Germany	12.4	15.6	18.9
Italy	10.5	14.0	18.7
Netherlands	n.a	29.4	35.1
United Kingdom	n.a	n.a	31.4
United States	31.6	40.4	48.9

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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.

<sup>6</sup>In Biais-Perotti (2001), the diffusion of financial shareholdings itself may be affected by political decisions on the structure of large privatization programs, designed to ensure re-election.

Table 1b: Proportion of Households, 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
United Kingdom	4.9	11.9	37.8	71.1	31.4
United States	4.4	38.3	66.0	86.7	48.9

Source: Guiso, Haliassos and Jappelli (2001)

The model generates empirical implications based on the distribution of financial wealth and human capital. Guiso et. al. (2001) offer some information on the percentage of population holding stocks in different income classes (see table 1). The data suggests that in the US more than 50 % of citizens hold shares, and that even in the second quartile almost 40 % of households own shares. In the UK and (only in recent years) in the Netherlands, around 40 % of the middle class holds shares. Accordingly, we would expect equity market investors to be assigned significant control rights in these countries. The diffusion of shareholdings is much lower in Germany and in Italy, where banks and family holdings are granted significant control.<sup>7</sup>

Note here that the political economy approach allows us to move away from the conventional view that workers bargain over their compensation with firms, to assume that compensation is determined as a political decision. While in practice firms do negotiate with workers directly, there are major components of this bargaining process which depend on legislation (pension plans, employee benefits, minimum wage, working conditions, legislation on labor union, centralized versus firm-specific bargaining, etc.). These features, very important in practice, determine the degree of “corporatism” in the economy, a clear political issue with its supporters and opponents. It is common for economists, for instance, to stress the differences between Europe and the U.S. in the matter of regulation on wages, pensions and work conditions.

The political decision over the allocation of influence may indirectly affect the form of financing chosen by firms, by affecting the type of investment they

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<sup>7</sup>Family-owned control holdings may correspond to a risk-averse corporatist situation, either because of undiversified controlling shareholders, or as the outcome of a political coalition with stakeholders at the cost of minority shareholders (Pagano and Volpin, 2000).

make. In our interpretation, riskier investment strategies result in the acquisition of greater growth opportunities and is associated with equity control. Yet firms in practice make financial decisions in a decentralized fashion, and it is hard to imagine that their financing decision would not affect their governance. 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. We plan to model the financing choice aspect in an extension, in which political decisions affect the allocation of control only indirectly, and governance is therefore a decentralized choice.

The basic model is described in section II; section III provides the basic results; section IV (very incomplete right now) will offer extensions, and section V concludes.

## 2 The Basic Model

In modelling corporate decisions, we take a drastically different approach from existing work. We want to capture the notion that many corporate decisions can be strongly influenced politically through the legal, tax, and regulatory environment. We therefore assume in the base model that many important characteristics of firms are directly determined by political decisions. In the base model, the only decision to be taken at the firm level is that about corporate strategy; corporate governance, the level and protection of stakeholder claims, and the firms' financial structure are all decided economy-wide. The allocation of corporate governance rights 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  $h_i(R_{f(i)})$ . Hence, the residual return of a firm  $j$ , net of returns to human capital, is  $F_j = R_j - \int_{j=f(i)} h_i(R_j) di$ . The value  $h_i(R_{f(i)})$  represents all returns from firm-specific 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  $h_i$  broadly

as pay above marginal productivity, seniority and promotion arrangements, corporate pension plans, the quality of working conditions, etc., and often call it stakeholder 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 on the financial wealth in the economy. We simplify the analysis by assuming that the composition of financial portfolios is the same for all individuals. Hence, we can 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  $\alpha_i$  can be greater than one, as  $F$  is average total financial wealth. The only restrictions on the  $\alpha_i$  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  $\alpha_i$  is non-decreasing in  $i$ .

The agents in the economy maximize expected utility over total individual wealth  $W_i = \alpha_i F + h_i(R_{f(i)})$ . We assume that the individual firm-related human capital risk cannot be insured away. Agents have identical von-Neumann-Morgenstern utilities over total individual wealth given by

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

where  $A$  is a measure of risk aversion.<sup>8</sup> For simplicity we assume  $A$  to be constant across the population, an assumption which can be easily relaxed.

Firms are funded with a mixture of bank debt and equity. Each firm has a bank loan with face value equal to  $L$ . Individual firm profitability is uncertain and also depends on the firm's choice of strategy. Firms, or rather their dominant investors, 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

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<sup>8</sup>Note the slight abuse of notation in (1), where  $W_i$  denotes the distribution of individual wealth. For brevity, we do not define utility over wealth levels.



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

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

$$\bar{R}_s < \bar{R}_r. \quad (3)$$

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.<sup>9</sup> We can then normalize the number of firms to be equal to that of individuals and assume that each firm employs one single individual. Hence, firms are also indexed by  $i$  and their return net of stakeholder rents is  $R_i - h_i(R_i)$ . If all firms choose the same investment strategy  $\sigma$ , aggregate corporate returns in the economy are  $\bar{R}_\sigma$ , and aggregate financial returns  $F = \bar{R}_\sigma - \int h_i(R_i) di$ .

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. While shareholders hold formal property rights, we assume that many corporate decisions and the influence rights over these decisions are strongly affected by legislation. To make this point as clearly as possible we assume that three areas of corporate decision making are determined by the political process. First, voters decide about the form and level of stakeholder rents  $h_i$ , which we will specify further below. Second, voters determine the level of debt in the system,  $L$ , for example through tax incentives or stock market legislation. And third, voters determine the overall corporate governance structure of firms within the economy. More specifically, legislation determines which of the two major players in the capital market is more influential, equity or banks. While the exercise of influence by different providers of capital is clearly a complex problem, we simplify this point, by assuming that the firm's broad investment strategy is chosen in the interest of the investor with dominant influence.

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

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<sup>9</sup>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.

1. A political majority chooses the amount of stakeholder rents, the level of debt and what type of investor will dominate corporate decisions.
2. Firms decide their investment strategy under the influence of the dominant investors.
3. Production takes place, and payoffs are distributed to creditors, stakeholders and shareholders.

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

$$h_i(R_i) = \min(H_i, R_i), \quad (4)$$

where  $H_i$  is a constant describing the level of stakeholder rents for agent  $i$ . Furthermore, as all agents are identical, we set  $H_i = H$ . Our formulation is the simplest possible version of a stakeholder return function that is concave in overall returns, which is all we need for our argument. In fact, the formulation (4) is quite intuitive and can be endogenized (see the next version), because for a given level of  $E(h_i)$  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 stakeholders for a given level of expected compensation (i.e. granting their claims highest seniority) carries no additional financial cost.<sup>10</sup>

Our assumption about stakeholder rents implies that these rents have higher priority than debt. More formally, a loan of face value  $L$  gives the lender a claim of

$$l(R) = \min(L, \max(0, R - H)) = \begin{cases} L & \text{if } L + H \leq R \\ R - H & \text{if } H \leq R \leq L + H \\ 0 & \text{if } R \leq H \end{cases}$$

This is quite an extreme simplifying assumption. In fact, while earned wages typically have priority over debt in case of bankruptcy, many stakeholder 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

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<sup>10</sup>This solution is actually identical to the optimal functional form for outside financing obtained in the case where profits are not verifiable but may be verified at some inspection costs, in which case the claim should be senior debt; see Gale and Hellwig (1985).

among debt and employees is not essential for our argument. All that counts is that both have a concave claim and are 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 investor dominance, the level of stakeholder rents  $H$ , and the level of debt  $L$ , the dominant investor chooses the firms' strategy  $\sigma \in \{s, r\}$ .

**Proposition 1** *If equity is dominant, it chooses the riskier strategy  $G = G_r$  regardless of  $H$  and  $L$ . If lenders are dominant, the following holds. If  $H \geq R_0$ , the dominant lender prefers  $G_r$  to  $G_s$  for all levels of  $L > 0$ . If  $H < R_0$ , there is a  $\hat{L} = \hat{L}(H)$  such that the lender prefers  $G_s$  if  $L < \hat{L}$  and prefers  $G_r$  if  $L > \hat{L}$ . The function  $\hat{L}(H)$  is decreasing in  $H$ .*

**Proof:** Equity has a convex claim and therefore favors risk. For lenders, the preference depends on the parameters  $H$  (determining how much of the downside of returns they must cede) and  $L$  (determining how much of the upside they capture). Lender returns are

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

Hence, lenders favor the safe strategy if and only if

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

is positive. By partial integration,

$$\Delta = \int_H^{H+L} (G_r(R) - G_s(R))dR. \quad (5)$$

Clearly,  $\Delta(0, H) = 0$  for all  $H$ . Furthermore,  $\Delta < 0$  for  $L$  sufficiently large, because  $\bar{R}_r > \bar{R}_s$ . By (5),  $\frac{d}{dL}\Delta < 0$  for all  $L$  if  $H \geq R_0$ . Hence,  $\Delta(L, H) < 0$  if  $L > 0$  and  $H \geq R_0$ .

If  $H < R_0$ , by the same token,  $\Delta(L, H) > 0$  if  $L \leq R_0 - H$ . Hence, there is a  $\widehat{L}(H) > R_0 - H$  such that  $\Delta(L, H) > 0$  if and only if  $0 < L < \widehat{L}(H)$ . Because  $\frac{d}{dL}\Delta$  changes sign only once,  $\widehat{L}(H)$  is unique and given by  $\Delta(\widehat{L}(H), H) = 0$ . Differentiating this identity shows that  $\widehat{L}$  is decreasing.

The first part of Proposition 1 is obvious: as equity is the residual claimant to profits, it will favor the riskier strategy, which increases the upside of profits. Dominant lenders, on the other hand, who receive the intermediate slice of returns,  $R \in (H, H + L]$ , will favor safer investments as long as  $H$  and  $L$  are not too large. If  $H$  is large ( $H \geq \widehat{H}$ ), any debt claim has no downside gains but mostly upside gains, and debt holders will act like equity holders. If  $H$  is smaller, but  $L$  large ( $L > \widehat{L}(H)$ ), debt may have some downside gains, but is disproportionately interested in the upside of profits, hence again behaves like equity. However, if stakeholder claims and debt are both not too large, lenders 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  $h$ , (4), the expected level of stakeholder rents is (for any strategy choice  $G$  of firm  $i$ )

$$E(h_i) = \int_0^H R_i dG(R_i) + H[1 - G(H)].$$

Financial wealth of the economy is equal to the sum of individual firm returns minus the value of the compensation of stakeholders. From Proposition 1 we know that, if dominance,  $H$ , and  $L$  are decided economy-wide, all firms choose the same strategy. Thus we have  $h_i = h$  independent of  $i$  and can write

$$\begin{aligned} F &= \bar{R} - E(h) \\ &= \int_0^\infty \max(R - H, 0) dG(R). \end{aligned} \tag{6}$$

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  $\alpha_i$ , her stakeholder rent  $H$ , and the corporate strategy  $G_\sigma$ :

$$\begin{aligned} U(\alpha_i, H, G_\sigma) &= E[\alpha_i F + h_i(R_i)] - \frac{1}{2}A \text{var}(\alpha_i F + h_i(R_i)) \\ &= \alpha_i \bar{R}_\sigma + (1 - \alpha_i)E_R[\min(H, R)] - \frac{1}{2}A \text{var}_R(\min(H, R)) \end{aligned} \quad (7)$$

Although the political decisions about stakeholder rents, debt, and investor dominance are taken simultaneously, it is instructive to first study the choice of  $H$  for a given investment policy  $G$ , and then study the trade-off underlying the choice of investor dominance (which will determine  $G$  by Proposition 1). The choice of  $L$  is of no direct concern to voters; they use  $L$  only to provide incentives to dominant debt holders.

The simple structure of voter preferences (7), which are linear in  $\alpha$ , allows us to work with the Median-Voter Theorem (for details, see the Appendix). As we have assumed the density  $\alpha_i$  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.<sup>11</sup> The median voter considers both, her return to human capital and her stake  $\alpha_m$  in the overall financial wealth of the economy. Her decision is given in the following proposition.

**Proposition 2** *Suppose the firms' investment policy  $G = G_\sigma$  can be determined by the median voter directly and is identical across firms. Then, if  $\alpha_m > 1$ , the amount of stakeholder 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 stakeholder rents is given by*

$$\int_0^{H_\sigma^*} G_\sigma(h) dh = \frac{1 - \alpha_m}{A}. \quad (8)$$

**Proof:** We have

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<sup>11</sup>In general, the difference between  $\alpha_m$  and average shareholdings will be correlated with measures of income inequality in the economy, but without further assumptions on the distribution of  $\alpha_i$  we cannot rank economies in terms of inequality according to this difference.

$$\begin{aligned}
& \text{var}(\min(H, R)) \\
&= E[(\min(H, R))^2] - E[\min(H, R)]^2 \tag{9} \\
&= \int_0^H R^2 dG(R) - \left( \int_0^H R dG(R) \right)^2 - 2H(1 - G(H)) \int_0^H R dG(R) \\
&\quad + H^2 G(H)(1 - G(H))
\end{aligned}$$

Hence, voter  $i$ 's expected utility is, after inserting (9) into (7) partially integrating and rearranging,

$$\begin{aligned}
U(\alpha_i, H, G_\sigma) &= \alpha_i \bar{R}_\sigma + (1 - \alpha_i) \left( H - \int_0^H G_\sigma(R) dR \right) \tag{10} \\
&\quad - A \left[ H \int_0^H G_\sigma(R) dR - \frac{1}{2} \left( \int_0^H G_\sigma(R) dR \right)^2 - \int_0^H R G_\sigma(R) dR \right]
\end{aligned}$$

Differentiating this yields

$$\frac{\partial}{\partial H} U = (1 - G_\sigma(H)) \left[ 1 - \alpha_i - A \int_0^H G_\sigma(R) dR \right]. \tag{11}$$

Hence, utility is single-peaked in  $H$  (for  $\sigma$  fixed), and if  $\alpha_i > 1$  the maximum is at  $H = 0$ . If  $\alpha_i \leq 1$ , the second order conditions are satisfied and the maximum is given by the first-order condition (8).

The value  $H_\sigma^*$  is the median voter's first-best choice of  $H$ , i.e. the value of  $H$  she would choose if her choice did not affect the dominant investor's choice of strategy  $G_\sigma$ . 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 for  $H_\sigma$ . At this solution, the optimal choice  $H_\sigma^*$  will trade off a higher but riskier stakeholder rent against a safer but lower financial return. This is certainly the more common case of financial wealth distribution in most economies.<sup>12</sup>

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 as stakeholder rent, which cannot be diversified.

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<sup>12</sup>Note that the first-best value of  $H$  is finite even if the median voter has no financial wealth ( $\alpha = 0$ ). This feature is due to the structure of individual preferences (1), which attributes much weight to the variance.

In the less realistic case that the median financial wealth is higher than the average ( $\alpha_m > 1$ ), the political preference goes to a system where  $H$  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 the income to which she is entitled in financial form rather than as risky stakeholder rent.

Given the monotonicity of condition (8), it is easy to provide some basic comparative statics results:

**Proposition 3** *For a fixed corporate strategy  $G_\sigma$ , the first-best level of stakeholder rents  $H_\sigma^*$  is decreasing in the median voter's financial wealth and in her risk aversion. If poorer agents vote less than richer agents, then first-best stakeholder rents will be lower than under full voter participation.*

The mathematics of Proposition 3 are trivial (the left hand side of (??) is increasing in  $H$ ). Yet, its message is interesting. First, an increase in financial wealth of the median voter has the effect of reducing the politically preferred amount of stakeholder claims. The reason is what could be termed a simple ‘‘Thatcher effect’’: by making the median voter more interested in capital returns, she is led to discount stakeholder rents more. 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 shareholding, and the higher will be the desired stakeholder rents.

Next, increasing risk-aversion in the economy leads to lower first-best stakeholder rents. This may seem paradoxical, as more risk-averse agents will be more interested in protecting the risky returns to their firm-specific 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, if poorer voters vote less than richer voters, this has the effect of shifting the median voter to the right, i.e. to higher financial holdings. As a result, first-best stakeholder rents in the economy will be reduced.

### 3.3 Determination of the dominant investor regime

We now can examine whether the political equilibrium will favor legislation granting a dominating position to lenders or to equityholders. This decision

is taken together with that about the debt level in the system and the level of stakeholder rents analysed in Proposition 2.

As noted earlier, the decision concerning the debt level  $L$  does not affect the voters directly; debt is just chosen to affect the incentives of debtholders. Hence, voters' utility is determined by the decision about  $(H, c)$ , where  $c \in \{C, E\}$  denotes either creditor control or equity 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  $\alpha_i$ , the median voter will be pivotal and the Median-Voter Theorem holds in our case (see the appendix for the full argument).

While the median voter can choose a promised level of stakeholder compensation  $H$ , she recognizes that its expected level will depend on the riskiness of corporate profits. Hence, when choosing the dominance in the financial system, she will prefer the party whose interests are best aligned with her own.

**Proposition 4** *The median voter will choose lender dominance if and only if*

$$U(\alpha_m, \min(R_0, H_s^*), G_s) > U(\alpha_m, H_r^*, G_r). \quad (12)$$

*If (12) holds and  $H_s^* < R_0$ , she chooses  $H = H_s^*$  and any debt level  $L \in (0, \widehat{L}(H_s^*))$ . If (12) holds and  $H_s^* \geq R_0$ , she chooses  $H = R_0(-\varepsilon)$  and debt level  $L = 0(+\varepsilon)$ . If (12) does not hold, she chooses  $H = H_r^*$  and equity dominance, and the debt level is indeterminate.*

**Proof:** From Proposition 2 we know that the median voter's preferences over  $H$ , given investment strategy  $G_\sigma$ , are single-peaked. From Proposition 1 we know that investment strategy  $\sigma = s$  can be implemented, through lender dominance, if and only if  $H < R_0$ .

If  $H_s^* < R_0$ , (12) therefore implies lender dominance and the indicated level of debt. If  $H_s^* \geq R_0$ , the median voter's maximum utility with  $\sigma = s$  is  $U(\alpha_m, R_0, G_s)$ , and thus (12) provides the criterion for the median voter's choice.

The median voter's choice in Proposition 4 reflects a tradeoff between stakeholder rents and corporate riskiness that is determined by the median voter's financial wealth. If  $U(\alpha_m, H_r^*, G_r) > U(\alpha_m, H_s^*, G_s)$ , the decision is unambiguously in favor of higher financial returns, hence the riskier corporate



strategy. If on the other hand,  $U(\alpha_m, H_r^*, G_r) < U(\alpha_m, H_s^*, G_s)$  and  $H_s^* < R_0$ , the decision is clearly in favor of less risk, at the expense of higher financial profits. The interesting case is the case in which  $U(\alpha_m, H_r^*, G_r) < U(\alpha_m, H_s^*, G_s)$  and  $H_s^* \geq R_0$ . In this case, the median voter's first-best choice is 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 strategy. Hence, the median voter must trade off a reduction in nominal stakeholder rents (to be able to provide incentives to dominant lenders) against a decrease in the riskiness of these rents.

We can now study how the distribution of financial wealth affects the choice of investor influence and stakeholder rents in the economy. Given the simplicity of the voting model, the only relevant information for these comparative statics is the relative wealth of the median voter, as expressed by  $\alpha_m$ .

**Proposition 5** *There is a  $\hat{\alpha} \in [0, 1)$  such that the median voter chooses equity dominance if  $\alpha_m > \hat{\alpha}$ .*

**Proof:** Define  $\alpha_0 < 1$  by

$$\begin{cases} \int_0^{R_0} G_s(R) dR = \frac{1-\alpha_0}{A} & \text{if } \int_0^{R_0} G_s(R) dR < \frac{1}{A} \\ \alpha_0 = 0 & \text{if } \int_0^{R_0} G_s(R) dR \geq \frac{1}{A} \end{cases}$$

By (8), the median voter's first-best choice of  $H$  under the safe strategy satisfies  $H_s^* < R_0$  if and only if  $\alpha_m > \alpha_0$ . Hence, if  $\alpha_m > \alpha_0$ , the median voter chooses among the two first-best utility levels (obtained by inserting (8) into (10))

$$\begin{aligned} V_\sigma(\alpha_m) &= U(\alpha_m, H_\sigma^*(\alpha_m), G_\sigma) \\ &= \begin{cases} \alpha_m \bar{R}_\sigma & \text{if } \alpha_m \geq 1 \\ \alpha_m \bar{R}_\sigma - \frac{(1-\alpha_m)^2}{2A} + A \int_0^{H_\sigma^*(\alpha_m)} R G_\sigma(R) dR & \text{if } \alpha_m \leq 1 \end{cases} \end{aligned}$$

for  $\sigma = s, r$ . The  $V_\sigma$  are continuous and satisfy  $V_r(1) > V_s(1)$ , which proves the proposition.

Proposition 5 states that the median voter will choose equity dominance if she has sufficient financial wealth. Note that the cut-off value  $\alpha_0$  is smaller

than 1, which implies that the proposition predicts equity control if the median voter has average wealth. For  $\alpha_m = 1$  this result is not surprising. In this case we know from Proposition 2 that the first-best rents under both risk strategies are  $H = 0$ . Hence, the median voter only considers financial wealth. Since financial wealth is perfectly diversified, thus riskless, the median voter chooses the strategy with the higher average return.

## 4 Extensions

In this section we provide three 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:

$$h_i(R_i) = \min(H_i, R_i).$$

In this subsection, we endogenize the form of these claims. It turns out that in some cases, full priority as assumed in the base model is indeed optimal, in others, only partial priority is optimal.

Suppose that the median voter is free to design the form of the function  $h_i(R_i)$ . Because of risk aversion, it would clearly be optimal to choose the form (4) if the corporate strategy were fixed (the median voter's first-best choice). However, if a form different from (4) allows to realize higher average rents or a less risky strategy, there is a potential tradeoff: an increase in risk from individual rents against higher average rents or a decrease in risk from a change in corporate strategy. This tradeoff is relevant when stakeholder rents are less than first-best or when equity is dominant in the basic model. However, if first-best stakeholder rents are compatible with bank control and if this is optimal, then trivially there is no such tradeoff.

**Proposition 6** *Suppose that*

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

*and that  $R_0 > H_s^*$ . Then the median voter optimally chooses the form (4) for stakeholder rents among all possible functions  $h_i(R_i)$ .*

## 4.2 Redistributive taxation

In the basic model, we have assumed that the only way for employees to obtain rents is through the firm they work for. This exposes them to firm-specific risk, which, in turn, may make them choose system-wide inefficient low-risk arrangements for corporate governance. If, however, there are mechanisms by which employees can obtain riskless rents, then there is no need to opt for less risk on the corporate level, and the optimal political choice can be  $G = G_r$  and equity control. In this subsection we argue that such mechanisms, which are essentially equivalent to redistributive taxation, generate efficiency losses, and that the overall tradeoff 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 wage 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 employee rents are constant, have priority over 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 (6),

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

public financial wealth available for redistribution

$$b = tc(t)\bar{R} \quad (13)$$

and individual expected utility, mirroring (7),

$$\begin{aligned} \widehat{U}(\alpha_i, H, t, G_\sigma) &= E_R[\alpha_i F + b + h(c(t)R)] - \frac{1}{2}A \text{var}(\alpha_i F + b + h(c(t)R)) \\ &= b + \alpha_i(1-t)c(t)\bar{R}_\sigma + (1-\alpha_i)E_R[\min(H, (1-t)c(t)R)] \\ &\quad - \frac{1}{2}A \text{var}_R(\min(H, (1-t)c(t)R)). \end{aligned} \quad (15)$$

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 (13). Intuitively, 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 and chooses  $G = G_r$ , and, as long as  $\alpha_m < 1$ , all corporate returns are taxed away and redistributed.<sup>13</sup> 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.

## 5 Conclusions

This paper advocates the view that both finance-related legislation and the forms of legal enforcement must be endogenous to the evolving majority political view. As Rajan and Zingales (2001) have indicated, the degree of financial development is not a stable function of legal origin; it evolves over time, and may experience large reversals when a political majority decides to alter the legal framework of financial markets and corporate governance, as it happened in the US around the turn of the century (Roe, 1993) and in Europe and in the U.S. during the Great Depression. However, we do not attempt here a dynamic model of political choice; rather, we highlight how political preferences over the structure of the productive system and the degree of competition in a democratic nation affect the choice over the relative importance of lenders in corporate governance. We have analyzed the allocation of nontransferable control rights as politically determined.

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<sup>13</sup>Formally, for  $H = 0$ , utility becomes  $b + \alpha_m(1-t)\bar{R}_\sigma = \alpha_m\bar{R}_\sigma + (1-\alpha_m)t\bar{R}_\sigma$ .

In our model the principal governance decision is between bank versus equity dominance, and the pivotal decision maker is the median voter. Her preference for either more risk-averse tenders or risk-inclined equity holders is shown to depend on the initial risk 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 a more conservative investment strategy by firms 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. In such a corporatist system, a political majority may also prefer a system which protects established producer rents via the regulatory framework on product market competition, at the expense of new entrants; a less competitive marketplace may result in lower average financial returns but also reduces the risks associated with individuals' stakeholder rents.<sup>14</sup>

## 6 Appendix

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  $(H^A, L^A, c^A)$  and  $(H^B, L^B, c^B)$  put before the electorate. Let  $\sigma^A$  and  $\sigma^B$  be the strategy choices by the dominant investors under the two alternatives (which are uniquely defined by Proposition 1). Then, using the explicit utility function derived in (10), voter  $\alpha$  prefers  $A$  over  $B$  if and only if

$$\alpha(\bar{R}_{\sigma^A} - H^A + \int_0^{H^A} G_{\sigma^A}(R)dR) + T(\sigma^A, H^A) \quad (16)$$

$$> \alpha(\bar{R}_{\sigma^B} - H^B + \int_0^{H^B} G_{\sigma^B}(R)dR) + T(\sigma^B, H^B), \quad (17)$$

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<sup>14</sup>This is consistent with the often made observation that oligopoly is more related to stable than to maximum profitability.

where  $T(\sigma, H)$  is a term not involving  $\alpha$ . Because of the linearity of (16) in  $\alpha$ , the choice of the median voter is the unique Condorcet winner of the vote (supported either by all  $\alpha < \alpha_m$  or all  $\alpha > \alpha_m$ ).

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