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Stakeholder Capitalism, Corporate Governance and Firm Value

Finance Working Paper N° 190/2007
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ECGI Working Paper Series in Finance

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Abstract

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Keywords: Firm objective, co-determination, imperfect competition

JEL Classifications: G34, G38, L11

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1 Introduction

In their classic survey of corporate governance, Shleifer and Vishny (1997; p. 738) outline their focus in the following way: "Our perspective on corporate governance is a straightforward agency perspective, sometimes referred to as separation of ownership and control. We want to know how investors get the managers to give them back their money." In the US and UK and many other Anglo-Saxon countries there is wide agreement that this is what corporate governance is about. The law is clear that shareholders are the owners of the firm and managers have a fiduciary (i.e., very strong) duty to act in their interests.[1] Most of the academic literature on governance has taken this perspective (see, e.g., Becht, Bolton, and Röell, 2003, for a more recent survey).

However, moving beyond the cases of the US and the UK, firms' objectives vary by country and often deviate significantly from the paradigm of shareholder value maximization. As Denis and McConnell (2003; p. 6) point out in their survey of international corporate governance: "in many European countries shareholder wealth maximization has not been the only – or even necessarily the primary – goal of the board of directors." In Germany, for example, firms are legally required to pursue the interests of parties beyond just shareholders through the system of *co-determination* in which employees and shareholders in large corporations have an equal number of seats on the supervisory board of the company (see Rieckers and Spindler, 2004, and Schmidt, 2004).

Germany is by no means the only country where the interests of parties other than just shareholders have bearing on companies' policies, and we document differences across a variety of countries in the next section. The common theme among these regimes can be seen from surveys of managers reported in Yoshimori (1995). Figure 1 shows the choices of senior managers at a sample of major corporations in Japan, Germany, France, the US, and the UK, between the following two alternatives:

[1] This holds except when the corporation is near insolvency or is insolvent in which case the managers have duties to creditors and other stakeholders - see Campbell and Frost (2007).

(a) A company exists for the interest of all stakeholders (dark bar).

(b) Shareholder interest should be given the first priority (light bar).

In Japan the overwhelming response by 97% of the managers was that all stakeholders were important. Similarly, in Germany and France 83% and 78%, respectively, viewed the firm as being for all stakeholders. At the other end of the spectrum, managers in the US and the UK, by majorities of 76% and 71% respectively, stated that shareholders' interests should be given priority. The same survey also asked the managers what their priorities were with regard to employee layoffs. The answers show that, at least for Japan, Germany and France, firm continuity and employment preservation are important concerns.

The fact that in so many countries the legal system or social convention requires firms to take into account stakeholder concerns raises a number of important issues:

- How should the objective function of stakeholder oriented firms be modeled?
- How does this different objective function affect the way firms compete with each other? What are the effects on the prices they set and on their stock market values? How do these compare with the case where firms are solely oriented toward shareholders?
- With globalization firms from shareholder oriented societies often compete with firms that are stakeholder oriented. How does this mixed competition affect prices and firm values? How does the outcome compare to that with just shareholder or just stakeholder oriented firms? What does this imply in terms of entry of foreign firms?

The current literature on corporate governance does not provide an answer to the questions above. In most papers, since at least Jensen and Meckling (1976), the focus is on how to resolve agency issues concerning managers or employees so as to maximize shareholder value. Sometimes this involves including employees in the governance process to provide good incentives and increase firm value (e.g., Jensen, 2001). However, when stakeholder governance is imposed by law or social norm, the objective function involves the interests of both shareholders and other stakeholders. There is no formal analysis in the existing

corporate governance literature of how to model the objective function of stakeholder firms and of the implications of this for the way firms compete and for their value. The purpose of this paper is to address these issues and provide an understanding of how legislation or social norms imposing stakeholder governance affect firms' behavior even when this involves a trade-off between the interests of shareholders and those of other stakeholders.

We start by considering a standard two-period duopoly model with imperfect price competition where firms maximize shareholder value. In the first period firms are subject to a random shock, which can stem from two different sources of uncertainty: 1) shocks to the firms' marginal production costs; and 2) shocks to the firms' realized demand for their products. If these shocks are large enough the firms may be unable to continue operating. In choosing their first period prices, firms take into account the effects on first period profits as well as on the probability of surviving into the second period.

We first characterize how the different sources of uncertainty influence firms' product market decisions. When firms are uncertain as to what their realized costs will be, they have an incentive to keep prices high in order to reduce the likelihood that they will be unable to cover their actual costs. By contrast, when firms face demand uncertainty they prefer to err on the side of lower prices so as to assure themselves of having at least some sales.

We then introduce stakeholder governance by assuming that firms in stakeholder oriented societies put weight in their objective function on the effects of their behavior on stakeholders other than shareholders. The idea is that if firms do not survive, stakeholders face costs of searching for new opportunities, while, if they do survive, many stakeholders continue to earn rents from transacting with the firm. If a firm is stakeholder-oriented, it takes (at least part of) these costs and benefits into account in its decision making process. Interestingly, we find that a concern for stakeholders in the firm's objective function can magnify the effect of uncertainty. When firms face cost uncertainty, stakeholder governance leads to a further softening of competition: firms charge higher prices and their probability of surviving increases, thus benefitting stakeholders. But the shareholders can also be better off through

the strategic benefit of softening competition which increases firm value.

By contrast, when demand is uncertain, firms reduce prices even further when they are concerned about stakeholders. This increases the firm's probability of survival and benefits stakeholders, but since it increases competition it reduces overall firm value and hurts shareholders. For this case, therefore, the interests of stakeholders and those of shareholders are not aligned, and having stakeholder governance reduces shareholder value. Therefore, the effect on shareholders of adopting a stakeholder-oriented governance structure very much depends on the type of uncertainty firms face.

We then consider the case of globalization, where it has become commonplace for firms from shareholder societies to compete with firms from stakeholder societies. We identify the circumstances under which all firms stand to benefit from the stakeholder orientation of just one of them. This turns out to be when the primary uncertainty firms face is about their costs rather than their demand. We also compare firm value across regimes, contrasting these mixed equilibria under globalization with pure equilibria where all firms are either shareholder or stakeholder oriented. We again establish that a stakeholder orientation can benefit shareholders, but only in the case of cost uncertainty. The results have interesting implications for the political economy of foreign entry.

The main focus of the paper is on how mandated stakeholder orientation affects price setting and market power since these are the most important determinants of value for most corporations around the world. The result that stakeholder governance can increase firm value rather than decrease it finds some support in Gorton and Schmid (2004) and Fauver and Fuerst (2006), although the precise mechanism through which this happens is yet to be identified empirically. The importance of having a framework for modeling and understanding the differences between stakeholder firms and shareholder firms has also emerged in the current financial crisis. Even in the US, where the shareholder paradigm has long dominated, there has been much discussion recently about the desirability of this system. The US government under administrations of both political parties has intervened

extensively in the financial and automobile sectors. In both industries firms have received large amounts of funds and have been exhorted to make decisions that take into account the welfare of employees, consumers, and borrowers even when this goes against the interests of the shareholders.

Our paper is related to a number of strands of literature. The first is concerned with firms' objective functions. Blinder (1993) models the objective function of Japanese firms as the weighted sum of shareholder profits and a function of employee earnings and shows that this leads firms to maximize revenue. In contrast, we put the firm-specific costs and benefits stakeholders receive in the firm's objective function and show that the concern for stakeholders increases the concern for survival, which softens or hardens competition depending on the kind of uncertainty firms face. Acharya, Myers, and Rajan (2008) also analyze the effect of stakeholders on firm continuity. However, whereas they focus on the role of critical, younger employees in the internal operation of the firm and its continuity, we are interested in the effects of concerns for continuity on market equilibrium.

Our emphasis on product market competition links our analysis to several papers in industrial organization. Sklivas (1987) shows that in oligopolistic industries shareholders can choose managerial incentives to alter the way in which firms compete and shows that firm value can be affected in this way. Fershtman and Judd (1987) also consider the interaction between managerial incentives and competition in oligopolistic markets. They show that compensation contracts can optimally depend on things other than profits such as sales. In a similar spirit, Aggarwal and Samwick (1999) use a framework of imperfectly competitive product markets to explain the optimality of compensation contracts for managers based on both own and rival performance. Furthermore, there is a large literature, starting with Brander and Lewis (1986) and more recently Dasgupta and Titman (1998), showing that debt acts as a precommitment device that changes the way in which firms compete (Allen, 2000, contains a discussion of this literature). Our approach is related in that stakeholder governance has product market implications, but for most of the paper we abstract from any

additional strategic considerations introduced by incentive contracts or limited liability, and focus on the positive implications of stakeholder governance for firm value. However, in an extension we show that if managerial incentives are included in the analysis our results on the effects of stakeholder governance on product market competition remain valid. Moreover, and perhaps more importantly, differently from the industrial organization literature, we show how the effects of stakeholder governance vary depending on the source of uncertainty firms face.

A number of papers have been concerned with the normative issue of whether it is socially desirable for firms to pursue anything other than shareholder interests. Tirole (2001, 2006) takes a negative view on the desirability of adopting a stakeholder-oriented objective for the firm given the difficulty to measure stakeholder welfare and thus to charge managers with anything other than maximization of firm value. Allen and Gale (2000, Chapter 12) and Allen (2005) take a more optimistic view arguing that changing firms' objective functions from just focusing on shareholder wealth can correct for market failures and provide a Pareto improvement in welfare. In contrast to these papers, our focus is positive in that we are concerned with the likely effects of the stakeholder governance that is required in many countries.

In contrast to finance and economics, stakeholder governance has received considerable attention in other disciplines. There is a large managerial literature on how stakeholder governance can be implemented. For example, Blair (1995) has suggested that firm-specific investments by employees and other stakeholders are crucial. She argues that these parties should be given residual claimant status along with shareholders. O'Sullivan (2000) stresses the importance of building organizations that are able to continuously innovate and ensuring all stakeholders are involved in this process. There is also a large legal literature that is surveyed in Licht (2004).

The remainder of the paper proceeds as follows. In the next section we discuss how governance arrangements vary across countries, and provide some institutional details. Section

3 presents a model analyzing the effects in terms of price competition and firm value of having firms that care about other stakeholders in addition to shareholders. Section 4 looks at globalization where different types of firms compete with each other. Section 5 analyzes a number of extensions, and Section 6 presents the empirical implications of our analysis. Section 7 concludes.

2 Governance Arrangements in Different Countries

As discussed above, the system of co-determination in Germany provides a clear example of a country where firms' objectives encompass a broader set of stakeholders in the firm than merely those who own shares. However, Germany is by no means the only country with such a system. For example, China has a two-board system with a supervisory board above the management board. The 2005 reforms in China's Company Law required that employee representatives account for no less than one third of the supervisory board. The reforms also codified the requirement that firms bear in mind their social responsibilities in conducting their business operations (Wang and Huang, 2006).

As documented by Wymeersch (1998), several other countries have some form of co-determination. Austria has a system of co-determination similar to that in Germany. The Netherlands has a system known as the *structuurvennootschap* that is applicable to all larger companies except for those with an international group structure such as Royal Dutch Shell and Unilever. Here the labor representation is indirect in that directors must have the confidence of employees. Members of the supervisory board must take care of the interest of the company and its related enterprise.

In Denmark, Sweden, and Luxembourg, there is employee representation on one-tier boards. In Denmark, a third of the board is elected by employees (with a minimum of two) in companies with more than 35 employees. In Sweden, companies with more than 25 employees must have two labor representatives on the board, while companies with more

than 1,000 employees must have three. The rights and duties of these board members are the same as for all other board members, namely that they should serve the best interests of the company as a whole. In Luxembourg, firms with more than 1,000 employees and some firms with a state connection have one third of the board elected by the employees.

The system in France is that partially privatized companies must reserve two or three board positions (depending on board size) to be elected by employees. Also, employees in companies where at least 3% of shares are employee owned have the right to elect one director (Ginglinger, Megginson, and Waxin, 2009).

In Japan, the situation is yet again different from the US and UK. Managers do not have a fiduciary responsibility to shareholders. The legal obligation of directors is such that they may be liable for gross negligence in the performance of their duties, including the duty to supervise (Scott, 1998). In practice, it is widely accepted that stakeholder interests and in particular employee interests play a predominant role (see Dore, 2000; and Jackson and Miyajima, 2007). Milhaupt (2001) argues that this system is enforced by social norms.

It is readily seen that, while the specifics of the systems of governance in each country vary widely, they have as a common objective the inclusion of parties beyond shareholders into firms' decision-making processes. In particular, in many countries workers play a prominent role, being regarded as important stakeholders in the firm. The analysis that follows focuses on this aspect of what we term "stakeholder governance."

3 Models of Governance

In this section we develop a simple model where different forms of governance are associated with different objective functions for the firms. We start with the standard case where firms maximize shareholder value. We then analyze how a concern for stakeholders affects the way firms compete. Finally, we compare the overall value of firms in the different governance structures.

3.1 Shareholder firms

Consider first a simple one-period model where two firms, $i \in \{1, 2\}$, offer differentiated products and compete in prices. Each firm i faces a demand curve given by

$$D_i = A - bp_i + dp_j$$

for $i \neq j$, where p_i and p_j are the prices charged by firms i and j, respectively, and b and d depend on consumers' preferences over the good sold by firm i relative to that sold by firm j. We assume throughout that $b \geq d$, so that firm i's demand is at least as sensitive to its own price as it is to the price charged by its competitor. Each firm i chooses its price to maximize profit as given by

$$\max_{p_i} \pi_i = \max_{p_i} (p_i - c) D_i = \max_{p_i} (p_i - c) \left(A - bp_i + dp_j\right),$$

where c represents the marginal cost of producing one unit of output, and is the same for both firms. The first order condition for profit maximization gives

$$(A - bp_i + dp_j) - (p_i - c)b = 0, \tag{1}$$

which yields the reaction function

$$p_i = \frac{A + bc}{2b} + \frac{d}{2b} p_j.$$

Given a similar expression for firm j, we can solve for the symmetric equilibrium prices $\widehat{p}$ to obtain:

$$\widehat{p} = \frac{A + bc}{2b - d}.$$

In order to ensure that profits are positive, we assume that $\widehat{p} > c$. A sufficient condition for this is that $A - c\,(b - d) > 0$.

We now enrich this basic model by introducing a second period identical to the first. We also assume that each firm i is subject to various forms of uncertainty which may affect its first period pricing decisions. Specifically, we consider two distinct cases, one where each firm is subject to a shock to its marginal cost in period 1, so that $\widetilde{c}_i = c + \widetilde{\epsilon}_i$, where $\widetilde{\epsilon}_i$ is distributed uniformly on the interval $[-\epsilon, \epsilon]$. The second case we consider is where each firm faces an uncertain demand, so that $\widetilde{D}_i = D_i - \widetilde{\eta}_i = A - bp_{i1} + dp_{j1} - \widetilde{\eta}_i$, where $\widetilde{\eta}_i$ is distributed uniformly on the interval $[-\eta, \eta]$. For either case, firm i can operate in period 2 only if its profit in the first period, π_{i1}, is nonnegative or, equivalently, if the respective shock is not too large. For the first case, $\pi_{i1} \geq 0 \Leftrightarrow \widetilde{\epsilon}_i \leq p_{i1} - c$, so that the realized shock does not exceed the firm's markup over its expected marginal cost. For the second case, $\pi_{i1} \geq 0 \Leftrightarrow \widetilde{D}_i \geq 0$, which is equivalent to $\widetilde{\eta}_i \leq A - bp_{i1} + dp_{j1}$, so that the shock to demand is lower than the firm's expected demand. We analyze the two cases of uncertainty in turn below.

Marginal cost uncertainty. Firm i's problem is to choose the price that maximizes its overall market value, V_i, as given by

$$\max_{p_{i1}} V_i = E[\pi_{i1}] + \Pr(\widetilde{\epsilon}_i \leq p_{i1} - c)\pi_2.$$

The first term represents the expected profit in the first period, while the second term is what firm i obtains in expectation in the second period if it survives. For simplicity, this equals π_2 irrespective of whether only firm i survives or both firms do. (Similar results can be obtained if monopoly and duopoly profits in the second period differ - see an earlier working paper version of this paper, Allen, Carletti and Marquez, 2008). The firm can also fail, in which case it earns zero profits. Noting that $E[\pi_{i1}] = (p_{i1} - c)D_i$ and $\Pr(\widetilde{\epsilon}_i \leq p_{i1} - c) = \frac{p_{i1} - c + \epsilon}{2\epsilon}$, the maximization problem can be written as

$$\max_{p_{i1}} V_i = (p_{i1} - c)D_i + \frac{p_{i1} - c + \epsilon}{2\epsilon}\pi_2. \tag{2}$$

The first-order condition for this problem is

$$\frac{\partial V_i}{\partial p_{i1}} = (A - bp_{i1} + dp_{j1}) - b(p_{i1} - c) + \frac{1}{2\epsilon}\pi_2 = 0. \tag{3}$$

The first two terms represent the total marginal effect of a change in p_{i1} on the expected first-period profit. The last term captures the effect of a change in p_{i1} on the second-period profit of firm i through the marginal change in its survival probability, $\frac{1}{2\epsilon}$. As is normally the case in models of imperfect competition, prices are strategic complements in our framework. This can be seen from the condition $\frac{\partial^2 V_i}{\partial p_{i1}\partial p_{j1}} = d > 0$, which also guarantees that the standard regularity condition (see Dixit, 1986) that $\left|\frac{\partial^2 V_i/\partial p_{i1}\partial p_{j1}}{\partial^2 V_i/\partial p_{i1}^2}\right| < 1$ is always satisfied.

Solving (3) for p_{i1} and then setting $p_{i1} = p_{j1}$, we can find the unique symmetric equilibrium price as

$$\widehat{p}_1^C = \frac{A + bc + \pi_2/2\epsilon}{2b - d}, \tag{4}$$

where the superscript C indicates the case of marginal cost uncertainty. If we compare this with the one-period price $\widehat{p}$ we obtain that

$$\widehat{p}_1^C - \widehat{p} = \frac{\pi_2}{2\epsilon(2b - d)} > 0.$$

The intuition for this result is that when firms care about surviving until period 2, they maximize their expected profits across both periods. Firms set higher first period prices than in the one-period model in order to increase their probability of survival, $\Pr(\widetilde{\epsilon}_i \leq p_{i1} - c)$. In other words, the concern for survival softens competition and, by raising prices, also reduces output.

Demand uncertainty: Similarly to before, firm i's problem is to choose the first period price that maximizes its market value, given by

$$\max_{p_{i1}} V_i = E[\pi_{i1}] + \Pr\left(\widetilde{\eta}_i \leq A - bp_{i1} + dp_{j1}\right)\pi_2.$$

Since $E[\pi_{i1}] = (p_{i1} - c)D_i$ and $\Pr(\widetilde{\eta}_i \leq A - bp_{i1} + dp_{j1}) = \frac{A - bp_{i1} + dp_{j1} + \eta}{2\eta}$, this maximization problem can be written as

$$\max_{p_{i1}} V_i = (p_{i1} - c)D_i + \frac{A - bp_{i1} + dp_{j1} + \eta}{2\eta}\pi_2. \tag{5}$$

The first order condition to this problem is given by

$$\frac{\partial V_i}{\partial p_{i1}} = A - bp_{i1} + dp_{j1} - b(p_{i1} - c) - \frac{b}{2\eta}\pi_2 = 0.$$

As before, we can solve this expression to obtain the reaction function for firm i and then setting $p_{i1} = p_{j1}$, we can find the unique symmetric equilibrium price as

$$\widehat{p}_1^D = \frac{A + bc - b\pi_2/2\eta}{2b - d}, \tag{6}$$

where the superscript D denotes the case of demand uncertainty. Note that, in contrast to the case where firms have uncertain marginal production costs, the optimal price is now lower than the single period optimum, $\widehat{p}$:

$$\widehat{p}_1^D - \widehat{p} = -\frac{b\pi_2}{2\eta(2b - d)} < 0.$$

The intuition for this result is that, when a firm faces uncertain demand, posting too high a price risks losing all sales if demand turns out to be significantly lower than expected. In order to increase the chance of having actual sales, and therefore of earning some profit and being able to operate in the second period, the firm finds it optimal to reduce its price relative to the equilibrium price in the single-period setting. In contrast to the case with marginal cost uncertainty, competition is then intensified since each firm has an incentive to reduce its price in order to generate sufficient demand. In equilibrium, firms charge lower prices and, as a consequence, increase expected output.

3.2 Stakeholder firms

So far we have considered the case where firms maximize only shareholder value. However, as discussed earlier, in many countries like Germany, Japan and France, the legal system and social environment are such that firms also consider the interests of other stakeholders, such as workers or suppliers, in adopting strategic decisions. To capture this in our model, we modify the firm's objective function so that the interests of stakeholders like employees and suppliers are represented in the firm's decision making process. In particular, we suppose that stakeholders are affected by the failure of the firm to survive. If the firm fails, these stakeholders would have to bear some (possibly nonpecuniary) costs associated with having to find new jobs and customers, for example. In this case the objective function for firm i becomes:

$$\begin{aligned} \max_{p_{i1}} \Omega_i &= V_i - \Pr(\pi_{i1} < 0) K_i \\ &= E[\pi_{i1}] + \Pr(\pi_{i1} \geq 0) \pi_2 - (1 - \Pr(\pi_{i1} \geq 0)) K_i \end{aligned} \tag{7}$$

where for ease of comparison π_2 is the same second period profits as in the shareholder case and K_i is the part of the cost borne by stakeholders that is reflected in firm i's decision making. Since this is determined by the legal and social environment it is the same for all firms so that $K_i = K_j = K$.

This approach is a reduced way of capturing the idea that stakeholders' interests appear in the objective of the firm and may influence its actions. An alternative is to also consider that stakeholders benefit from the continuation of the firm and thus add an additional term, $(1 - \Pr(\pi_{i1} < 0))k_i$, in the objective function (7), where k_i represents these benefits. This approach of modeling a stakeholder firm is also in line with Tirole (2006), who discusses the possibility of including the surpluses of all stakeholders in the firm's objective function. Since with either specification decreasing the probability of bankruptcy $\Pr(\pi_{i1} < 0)$ increases the objective function linearly, the two approaches are equivalent.

Given (7), it is straightforward to solve the firm's maximization problem for the two forms of uncertainty discussed above. Beginning with the case of marginal cost uncertainty, we can write firm i's objective function as

$$\max_{p_{i1}} \Omega_i = E[\pi_{i1}] + \Pr(\widetilde{\epsilon}_i \leq p_{i1} - c)\pi_2 - (1 - \Pr(\widetilde{\epsilon}_i \leq p_{i1} - c))\, K. \tag{8}$$

Given this objective function, the reaction function for firm i as a function of firm j's first-period price is given by

$$p_{i1} = \frac{A + cb + \pi_2/2\epsilon}{2b} + \frac{1}{2b}\frac{1}{2\epsilon}K + \frac{d}{2b}p_{j1}, \tag{9}$$

from which it can be shown that

$$\widehat{p}_{1K}^{C} = \widehat{p}_{1}^{C} + \frac{1}{2\epsilon(2b-d)}K, \tag{10}$$

where the subscript K denotes the equilibrium price charged by a stakeholder firm. Since $b > d$, $\frac{\partial \widehat{p}_{1K}}{\partial K} > 0$. This establishes that a concern for stakeholders serves to soften competition further relative to the case of shareholder firms by increasing prices and reducing quantity in the first period. The intuition is again simple. As stakeholder firms care even more about surviving than shareholder firms, they charge higher prices to guarantee a higher probability of survival. This implies that firms' production in stakeholder societies is further away from the efficiency benchmark provided by the perfect competition paradigm.

The case of demand uncertainty can be solved similarly. Firm i's objective function can be written as

$$\max_{p_{i1}} \Omega_i = E[\pi_{i1}] + \Pr\left(\widetilde{\eta}_i \leq A - bp_{i1} + dp_{j1}\right)\pi_2 - \left(1 - \Pr\left(\widetilde{\eta}_i \leq A - bp_{i1} + dp_{j1}\right)\right)K. \tag{11}$$

This maximization problem can be solved to obtain the optimal first period price as

$$\widehat{p}_{1K}^{D} = \widehat{p}_{1}^{D} - \frac{b}{2\eta(2b-d)}K. \tag{12}$$

In contrast to the case with marginal cost uncertainty, the equilibrium price is now decreasing in the concern for stakeholders as $\frac{\partial \widehat{p}_{1K}^{D}}{\partial K} < 0$. In other words, an increase in the concern for stakeholders, modeled as an increase in the parameter K, leads to a further decrease in first period prices relative to the case of shareholder-oriented firms. This occurs because with demand uncertainty stakeholder firms charge lower prices so as to ensure a positive level of demand for their products. Clearly, this increases competition and raises expected output while lowering firms' markups.

3.3 Firm Value

Now that we have derived the equilibrium prices set by shareholder and stakeholder firms under both types of uncertainty, we can turn to the comparison of the firms' values under the two governance structures. To do so, we separate the two sources of uncertainty again in order to clearly identify their different effects.

Marginal cost uncertainty: We start with the value of a shareholder firm. Substituting the equilibrium symmetric price $\widehat{p}_{1}^{C}$ as in (4) for both p_{i1} and p_{j1} into (2) and rearranging the terms, we obtain the following expression for the equilibrium value of a shareholder firm:

$$\widehat{V}_{SHA}^{C} = -Ac - \frac{(c-\epsilon)}{2\epsilon}\pi_2 + \left[A + c(b-d) + \frac{\pi_2}{2\epsilon}\right]\widehat{p}_{1}^{C} - (b-d)\,(\widehat{p}_{1}^{C})^2. \tag{13}$$

We note that $\widehat{V}_{SHA}^{C}$ is concave in the equilibrium price $\widehat{p}_{1}^{C}$.

Similarly, by substituting $\widehat{p}_{1K}^{C}$ as in (10) for both p_{i1} and p_{j1} into (2), we obtain an expression for the equilibrium value of a stakeholder firm that faces uncertainty concerning its marginal costs as a quadratic function of K:

$$\widehat{V}^C_{STA}(K) = \widehat{V}^C_{SHA} + \frac{d\left[A + c(b-d) + \pi_2/2\epsilon\right]}{2\epsilon\left(2b-d\right)^2}K - \frac{(b-d)}{4\epsilon^2\left(2b-d\right)^2}K^2. \tag{14}$$

Demand uncertainty: Following the same approach as above, we can substitute the equilibrium price $\widehat{p}^D_1$ from (6) into (5) to obtain

$$\widehat{V}^D_{SHA} = -Ac + \frac{A+\eta}{2\eta}\pi_2 + \left[A + (b-d)(c - \frac{\pi_2}{2\eta})\right]\widehat{p}^D_1 - (b-d)\left(\widehat{p}^D_1\right)^2. \tag{15}$$

Likewise, we can instead substitute $\widehat{p}^D_{1K}$ as in (12) into (2) to obtain the equilibrium value of a stakeholder oriented firm. After some manipulation, we obtain

$$\widehat{V}^D_{STA}(K) = \widehat{V}^D_{SHA} - \frac{bd\left[A + (b-d)(c - \pi_2/2\eta)\right]}{2\eta\left(2b-d\right)^2}K - \frac{b^2\left(b-d\right)}{4\eta^2\left(2b-d\right)^2}K^2. \tag{16}$$

We can now state the following proposition, which summarizes the effect of a stakeholder orientation on overall firm (i.e., shareholder) value.

Proposition 1 *(a) With marginal cost uncertainty, firms in a stakeholder society have higher value than firms in a shareholder society if* $0 < K < K^*$ *where* $K^* = \frac{2\epsilon d[A - c(b-d) + \pi_2/2\epsilon]}{(b-d)}$ *satisfies* $\widehat{V}^C_{SHA} = \widehat{V}^C_{STA}(K^*)$*; while they have a lower value if* $K > K^*$*. (b) With demand uncertainty, firms in a stakeholder society always have lower value than firms in a shareholder society.*

Proposition 1 establishes that whether a stakeholder orientation results in an increase or a fall in the value of the firm compared to a shareholder orientation depends on the type of uncertainty that firms face. In particular, firms in stakeholder-oriented economies can have a higher overall value than those in shareholder-oriented economies when firms are uncertain about their marginal costs, but not when the primary source of uncertainty concerns the demand for their product.

These results are established directly from inspection of (14) and (16). Part (a) of the proposition is illustrated in Figure 2. Since $b > d$ and $A - c\left(b-d\right) > 0$, $\widehat{V}^C_{STA}(K)$ is a concave

function of K and has a positive slope at $K = 0$; while $\widehat{V}^{C}_{SHA}$ is, by definition, constant with respect to K. As the graph shows, firms in a stakeholder society are more valuable than firms in a shareholder society for $0 < K < K^*$.

Part (b) of the proposition is illustrated in Figure 3. As can be seen, the case with demand cost uncertainty is quite different from the case with marginal cost uncertainty. The function $\widehat{V}^{D}_{STA}(K)$ is also a concave function of K but its slope at $K = 0$ is negative since $A - c\,(b - d) > 0$. It follows immediately that in this case having a stakeholder orientation always leads to a reduction in firm value.

The result in Proposition 1 implies that with marginal cost uncertainty shareholders' and stakeholders' interests can be aligned. The higher prices induced by the firm's stakeholder orientation benefits the shareholders in terms of higher overall profits and the stakeholders in terms of higher probability of survival. However, when the firms' stakeholder orientation is too large (i.e., when K is too big) being stakeholder oriented decreases firm value since it forces firms to focus too much on survival at the cost of losing profitability and market value. Similarly, when firms are more concerned about the overall demand for their product, a stakeholder orientation leads to lower firm value as it reduces prices and increases competition.

4 Globalization: Competition between Shareholder and Stakeholder Firms

So far we have considered the case where all firms operate in the same legal environment and are thus symmetric. We now consider a setting where firms of different types compete together. This kind of competition may occur as a result of globalization where firms from shareholder societies (such as the US) compete with those in countries where some measure of stakeholder governance is mandated by law or social norms (such as Germany). The results have interesting implications in terms of the ease with which firms enter into new

markets through acquisitions.

We adopt the convention that firm i is the shareholder firm and firm j is the stakeholder firm so that $K_i = 0$ and $K_j > 0$. We refer to this as a "mixed" case. As before, it is useful to divide the discussion between the two different kinds of uncertainty.

Marginal cost uncertainty: In this case, firm i's reaction function derives directly from (3), whereas, readjusting (9), firm j's reaction function is given by

$$p_{j1} = \frac{A + cb + \pi_2/2\epsilon}{2b} + \frac{1}{2b}\frac{1}{2\epsilon}K_j + \frac{d}{2b}p_{i1}, \tag{17}$$

where K_j represents the concern for stakeholder interests embedded in the legal and social environment in firm j's home country.

From the two reaction functions it is easy to derive the following equilibrium prices of the two firms:

$$\widehat{p}_{i1}^{C} = \widehat{p}_{1}^{C} + \frac{d}{2\epsilon(4b^2 - d^2)}K_j, \tag{18}$$

$$\widehat{p}_{j1}^{C} = \widehat{p}_{1}^{C} + \frac{b}{\epsilon(4b^2 - d^2)}K_j. \tag{19}$$

Comparing these equilibrium prices to those obtained in the pure shareholder equilibrium in (4) and in the pure stakeholder equilibrium in (10) gives $\widehat{p}_1^C < \widehat{p}_{i1}^C < \widehat{p}_{j1}^C < \widehat{p}_{1K}^C$ so that the prices in a mixed equilibrium − where for the purpose of comparison we have set $K_j = K$ − lie in between those obtained in the two pure cases.

Turning next to the comparison of values in the mixed equilibrium, we substitute (18) and (19) into (2) and the corresponding expression for V_j, and obtain:

$$\widehat{V}_{iSHA}^{C}(K_j) = \widehat{V}_{SHA}^{C} + \frac{bd}{(2b+d)}\frac{[A - c(b-d) + \pi_2/2\epsilon]}{2\epsilon(2b-d)^2}K_j + \frac{bd^2}{4\epsilon^2\left(4b^2 - d^2\right)^2}K_j^2, \tag{20}$$

$$\widehat{V}_{jSTA}^{C}(K_j) = \widehat{V}_{SHA}^{C} + \frac{d^2}{(2b-d)}\frac{[A - c(b-d) + \pi_2/2\epsilon]}{2\epsilon(2b-d)^2}K_j - \frac{b\left(2b^2 - d^2\right)}{2\epsilon^2\left(4b^2 - d^2\right)^2}K_j^2, \tag{21}$$

where $\widehat{V}^C_{iSHA}(K_j)$ refers to the equilibrium value of shareholder firm i competing against stakeholder firm j, while $\widehat{V}^C_{jSTA}(K_j)$ is the equilibrium value of stakeholder firm j when competing against shareholder firm i. Unlike the pure case analyzed above, the value of the shareholder firm depends now on the stakeholder orientation of the competing stakeholder firm, as represented by K_j.

Demand uncertainty: For this case, a similar approach to that above can be used to obtain the following equilibrium prices of the two firms:

$$\widehat{p}^D_{i1} = \widehat{p}^D_1 - \frac{bd}{2\eta(4b^2-d^2)}K_j, \tag{22}$$

$$\widehat{p}^D_{j1} = \widehat{p}^D_1 - \frac{b^2}{\eta(4b^2-d^2)}K_j. \tag{23}$$

It can be easily seen that, in contrast to the case with marginal cost uncertainty, we now have $\widehat{p}^C_{1K} < \widehat{p}^D_{i1} < \widehat{p}^D_{j1} < \widehat{p}^D_1$. Turning next to the firm values in the mixed equilibrium with demand uncertainty, we substitute (22) and (23) into (5) and the corresponding expression for V_j, and obtain:

$$\widehat{V}^D_{iSHA}(K_j) = \widehat{V}^D_{SHA} - \frac{b^2 d}{(2b+d)}\frac{[A-(b-d)(c-\pi_2/2\eta)]}{\eta(2b-d)^2}K_j + \frac{b^3d^2}{4\eta^2\left(4b^2-d^2\right)^2}K_j^2, \tag{24}$$

$$\widehat{V}^D_{jSTA}(K_j) = \widehat{V}^D_{SHA} - \frac{bd^2}{2\left(2b+d\right)}\frac{[A-(b-d)(c-\pi_2/2\eta)]}{\eta(2b-d)^2}K_j - \frac{b^3(2b^2-d^2)}{2\eta^2\left(4b^2-d^2\right)^2}K_j^2, \tag{25}$$

where, similarly to before, $\widehat{V}^D_{iSHA}(K_j)$ represents the equilibrium value of shareholder firm i competing against stakeholder firm j with equilibrium value $\widehat{V}^D_{jSTA}(K_j)$.

We can now state the following result.

Proposition 2 *In a mixed equilibrium,*

(a) with marginal cost uncertainty, the shareholder firm is always more valuable than the stakeholder firm;

(b) with demand uncertainty, the stakeholder firm is more valuable than the shareholder

firm for $K_j < K'$, where K' satisfies $\widehat{V}^D_{iSHA}(K') = \widehat{V}^D_{jSTA}(K')$; and it is less valuable otherwise.

Part (a) of the proposition follows from a simple comparison of (20) and (21) and is illustrated in Figure 2, where the value $\widehat{V}^C_{iSHA}(K_j)$ of the shareholder firm and the value $\widehat{V}^C_{jSTA}(K_j)$ of the stakeholder firm are plotted as a function of K_j. Since $b > d$, $\widehat{V}^C_{iSHA}(K_j)$ is convex while $\widehat{V}^C_{jSTA}(K_j)$ is concave in K_j. Both functions have positive slope at $K_j = 0$, but, given that the slope of $\widehat{V}^C_{iSHA}(K_j)$ is greater than that of $\widehat{V}^C_{jSTA}(K_j)$, the shareholder firm is always more valuable than the stakeholder firm. The intuition for this result is fairly simple. Proposition 1 states that with marginal cost uncertainty having a stakeholder orientation can be beneficial to both firms due to the commitment to further soften competition. Proposition 2 goes one step further and establishes that the shareholder firm benefits more than the stakeholder firm from the softening of competition as it gets to free-ride on the increase in price arising out of firm j's stakeholder orientation.

Part (b) of the proposition follows in a similar manner from comparing (24) and (25) and is illustrated in Figure 3. Again, since $b > d$, $\widehat{V}^D_{iSHA}(K_j)$ is convex while $\widehat{V}^D_{jSTA}(K_j)$ is concave in K_j, but their slopes at $K_j = 0$ are now negative with that of $\widehat{V}^D_{jSTA}(K_j)$ being greater (i.e., less negative) than that of $\widehat{V}^D_{iSHA}(K_j)$. Thus, as the figure shows, the two curves cross at K' and for K_j below this level the stakeholder firm is more valuable than the shareholder firm. The intuition is that with demand uncertainty, firms reduce their prices in order to increase their probability of survival, which has a negative effect on the value of both the shareholder and the stakeholder firm. For relatively low values of stakeholder orientation (i.e., for $K_j < K'$), the value of the shareholder firm is more sensitive to the increase in competition, and its value is reduced more than that of the stakeholder firm. In contrast, for larger degrees of stakeholder orientation (for $K_j > K'$), the stakeholder firm becomes excessively concerned with having a positive demand at the expense of profitability, and becomes less valuable than the shareholder firm. Note, however, that a direct implication of this analysis is that a stakeholder firm is always less profitable than a shareholder firm in a

pure equilibrium.

Having analyzed the mixed equilibrium, we can now compare the payoffs to firms in this equilibrium against the two pure regimes, where both firms are either stakeholder or shareholder oriented. For brevity, we focus only on the case of marginal cost uncertainty since the case with demand uncertainty can be analyzed similarly and the results are reversed in the usual way.

Proposition 3 *Suppose that firms face uncertainty concerning their marginal costs.*

(a) The value $\widehat{V}^C_{SHA}$ *of the pure shareholder firm is always less than the value* $\widehat{V}^C_{iSHA}(K_j)$ *of the mixed shareholder firm, and is less than the value* $\widehat{V}^C_{jSTA}(K_j)$ *of the mixed stakeholder firm for* $0 < K < K^{\dagger}$*, where* $K^{\dagger}$ *satisfies* $\widehat{V}^C_{SHA} = \widehat{V}^C_{jSTA}(K^{\dagger})$*.*

(b) The value $\widehat{V}^C_{STA}(K)$ *of the pure stakeholder firm is always greater than the value* $\widehat{V}^C_{jSTA}(K_j)$ *of the mixed stakeholder firm, and is greater than the value* $\widehat{V}^C_{iSHA}(K_j)$ *of the mixed shareholder for* $0 < K < K^{\dagger\dagger}$*, where* $K^{\dagger\dagger}$ *satisfies* $\widehat{V}^C_{iSHA}(K^{\dagger\dagger}) = \widehat{V}^C_{STA}(K^{\dagger\dagger})$*.*

Part (a) of this proposition, which is illustrated in Figure 2, follows directly from inspection of (13), (20), and (21). The key features are as before the convexity of $\widehat{V}_{iSHA}(K_j)$, the concavity of $\widehat{V}_{jSTA}(K_j)$ and their positive slopes at $K_j = 0$. The result that both firms can be better off in a mixed equilibrium relative to the case where they are both shareholder oriented again points to the importance of the commitment to soften competition that is embodied in firms' stakeholder-oriented governance structures when uncertainty about marginal costs is important. The result also implies that a shareholder firm would prefer to compete in a stakeholder-oriented market rather than one where shareholder focus is the norm, if it does not itself change its governance structure.

Part (b) of this proposition is likewise illustrated in Figure 2 and can be established from inspection of (14), (20), and (21). The results follow from the shape of the functions $\widehat{V}^C_{iSHA}(K_j)$, $\widehat{V}^C_{jSTA}(K_j)$ and $\widehat{V}^C_{STA}(K)$ and the sign of their slopes at $K_j = K = 0$ in the usual way.[2] The intuition for this part of Proposition 3 is similar to that in part (a): when firms

[2]Note that $\widehat{V}_{jSTA}(K_j)$ and $\widehat{V}_{STA}(K)$ do not intersect for $K > 0$. This can be shown by first noting that

are concerned about the uncertain realization of their marginal costs, credibly committing to soften competition is highly valuable. Since a stakeholder governance structure provides the greatest such commitment, stakeholder firms competing against other stakeholder firms reap the greatest benefit.

The analysis in this section has broad implications for the political economy of foreign entry, as well as for firms' governance practices abroad. We discuss these issues in more detail in Section 6.

5 Extensions

In this section we consider various extensions to the basic model. First, we generalize the cost structure to account for multiple sources of uncertainty, as well as for uncertainty to the firm's fixed costs. Second, we discuss the role of managerial incentives as an alternative to changing the firm's governance arrangements. Finally, we look at the implementation of investment decisions.

5.1 Shock structure

In the analysis so far we have considered marginal cost uncertainty and demand uncertainty separately. Here we look at the case where both are present and we then consider the effect of an uncertain fixed cost.

Suppose the firm is subject to both the marginal cost shock $\widetilde{\epsilon}_i$ and the demand shock $\widetilde{\eta}_i$. The firm's maximization problem can be written as

$$\begin{aligned}\max_{p_{i1}} V_i &= E[\pi_{i1}] + \Pr(\pi_{i1} \geq 0)\pi_2 \\ &= E[\pi_{i1}] + \Pr((p_{i1} - c - \widetilde{\epsilon}_i)(A - bp_{i1} + dp_{j1} - \widetilde{\eta}_i) \geq 0)\pi_2.\end{aligned}$$

the coefficient of K_j in (21) is smaller than the coefficient of K in (14) since $b > 0$. Moreover, from the comparison of the coefficients of K_j^2 and K^2, it can be seen that the absolute value of the coefficient in (21) is larger than the one in (14) if $2b\left(2b^2 - d^2\right) > (b-d)(2b+d)^2$. This condition is equivalent to $d^3 + bd^2 > 0$, which is always satisfied since $d > 0$.

Substituting the expressions for $\Pr\left(A - bp_{i1} + dp_{j1} \geq \widetilde{\eta}_i\right)$ and $\Pr(\widetilde{\epsilon}_i < (p_{i1} - c))$ and using the fact that $\widetilde{\epsilon}_i$ and $\widetilde{\eta}_i$ are independent, we then have

$$V_i = E[\pi_{i1}] + \left(\frac{p_{i1} - c + \epsilon}{2\epsilon}\right)\left(\frac{A - bp_{i1} + dp_{j1} + \eta}{2\eta}\right)\pi_2.$$

The first order condition yields

$$\frac{\partial V_i}{\partial p_{i1}} = \frac{\partial}{\partial p_{i1}} E[\pi_{i1}] + \frac{1}{4\epsilon\eta}\pi_2\left(A - 2bp_{i1} + dp_{j1} + bc + \eta - b\epsilon\right) = 0.$$

Whether this pushes the price up or down relative to the case with no uncertainty depends on the sign of the term $\eta - b\epsilon$. If $\eta < b\epsilon$, prices are pushed down and competition is increased. If $\eta > b\epsilon$, prices are pushed up and competition is softened.

Note that the first case, where $\eta < b\epsilon$, corresponds to the case where small increases in prices have a bigger effect on the likelihood that demand will be negative than that the price-cost margin will be positive. Conversely, the case where $\eta > b\epsilon$ corresponds to the case where price increases have a bigger effect on the likelihood of positive margins than on demand.

Suppose next that firms face uncertainty in that their fixed costs are subject to a random shock so first period profits are given by

$$\pi_i = (p_{i1} - c)\left(A - bp_i + dp_j\right) - \widetilde{F}_i,$$

where $\widetilde{F}_i = F + \widetilde{\theta}_i$ and $\widetilde{\theta}_i$ is uniformly distributed on $[-\theta, \theta]$ and, for simplicity, we normalize F to 0. The firm's maximization problem is

$$\begin{aligned}\max_{p_{i1}} V_i &= E[\pi_{i1}] + \Pr(\pi_{i1} \geq 0)\pi_2 \\ &= E[\pi_{i1}] + \Pr((p_{i1} - c)\left(A - bp_{i1} + dp_{j1}\right) - \widetilde{\theta}_i \geq 0)\pi_2.\end{aligned}$$

Note, however, that $\Pr((p_{i1} - c)\left(A - bp_{i1} + dp_{j1}\right) - \widetilde{\theta}_i \geq 0)$ is maximized whenever $E[\pi_{i1}] =$

$(p_{i1} - c)(A - bp_{i1} + dp_{j1})$ is maximized. Therefore, adding a shock to profits directly, or to the firm's fixed costs, has no effect on the price that firms choose in equilibrium.

5.2 Managerial incentives

In line with the idea in Fershtman and Judd (1987) and Sklivas (1987) that managerial incentive contracts can be used to affect competitive behavior in oligopolistic markets, we next consider whether such incentive contracts are a substitute or a complement for corporate governance in our framework.

Suppose that the firm hires a manager to make pricing decisions and needs to offer compensation in order to align his incentives. Specifically, suppose that, for career concern reasons both within the firm and externally, the manager wants to behave in a way that makes his employer, which is the board of the firm, happy. To model this explicitly, suppose that the utility function of the manager in firm i is given by

$$U_i = \alpha S_i,$$

where S_i represents whatever objective the firm is trying to achieve, i.e., V_i for a firm run purely in the interest of shareholders and Ω_i for a firm run in the interests of stakeholders.

Consider now a shareholder oriented firm, for whom $S_i = V_i$. In order to provide incentives for the manager to affect price competition, the firm can offer a bonus T that is paid to the manager only if the firm survives. The manager's expected total payoff can now be written as

$$\alpha V_i + T\left(1 - \Pr\left(\pi_{i1} < 0\right)\right).$$

When the manager chooses the firm's price p_{i1}, the first order condition for the shareholder firm is then

$$\alpha \partial V_i / \partial p_{i1} - T \partial \Pr\left(\pi_{i1} < 0\right) / \partial p_{i1} = 0.$$

Let T be chosen to ensure that V_i is maximized. Denote this optimal value as T^*.

Consider now a stakeholder oriented firm that has as its objective a balance of maximizing shareholder value but also reducing its probability of failure, so that $S_i = \Omega_i = V - \Pr(\pi_{i1} < 0) K_i$. Denoting as T^k the bonus that is paid to the managers if the firm survives, their expected total payoff can now be written as

$$\alpha (V_i - \Pr(\pi_{i1} < 0) K_i) + T^k (1 - \Pr(\pi_{i1} < 0))$$

so that the first order condition for a stakeholder firm is

$$\alpha \partial V_i / \partial p_{i1} - (T^k + \alpha K_i) \partial \Pr(\pi_{i1} < 0) / \partial p_{i1} = 0.$$

Assuming that $K_i < \frac{T^*}{\alpha}$, so that the stakeholder firm is not overly concerned with survival, it can be seen directly that the value of T^k that ensures V_i is maximized involves $T^k = T^* - \alpha K_i < T^*$. Thus with stakeholder governance the value maximizing action can be implemented at a lower cost than with shareholder governance, demonstrating that governance and incentive contracts are superior to incentive contracts alone.

5.3 Implementing investment decisions

We next consider how investment decisions can be implemented in shareholder and stakeholder firms. Adding investment projects in our model corresponds to increasing quantity, i.e., $D_i(p_{i1})$. This requires a reduction in prices. Thus lowering price is like adding projects, or in other words moving around the production possibility frontier.

We start by considering how a shareholder firm makes an investment decision. Since accepting an extra investment project is equivalent to lowering price, it is worthwhile to do so if the value of the firm is increased, or in other words, if $NPV > 0$. This will be the case

if

$$-\frac{\partial V_i}{\partial p_{i1}} = (p_{i1} - c)b - (A - bp_{i1} - dp_{j1}) - \frac{\pi_2}{2\varepsilon} > 0.$$

By contrast, the stakeholder firm looks at

$$-\frac{\partial \Omega_i}{\partial p_{i1}} = -\frac{\partial V_i}{\partial p_{i1}} - \frac{K_i}{2\varepsilon}$$

There is an extra term, $-K_i/2\varepsilon$, representing the effect on the probability of bankruptcy of taking on another project. Thus the stakeholder firm can make investment decisions by adjusting the NPV to take into account the extra probability of bankruptcy caused by project acceptance.

6 Empirical predictions

One important insight of the paper is that stakeholders' and shareholders' concerns are not always opposed, but rather can be aligned. In particular, our model suggests that the effect of having a stakeholder orientation depends on the type of shocks to which firms are subject and, thus, on the type of industry in which they operate. The model predicts that stakeholder orientation, as long as it is not excessive, should lead to higher overall firm value in industries that primarily face marginal cost uncertainties. Although this novel cross-industry prediction has not been tested empirically yet, the result that stakeholder orientation can be beneficial for firm value is consistent with the findings in Fauver and Fuerst (2006) and Ginglinger et al. (2009) that employee representation in the board increases firm value, as measured by Tobin's Q or profitability, in Germany and France, respectively. Similarly, Hillman and Keim (2001) and Claessens and Ueda (2008) find that a larger stakeholder orientation in the form of stakeholder management or employment protection improves efficiency and firms' value.

Even when potentially profitable, the benefit of being stakeholder oriented firms van-

ishes in our model if the concern for stakeholders becomes excessive, as represented in our framework by values of the parameter for stakeholder orientation K beyond the level K^*. To the extent that the size of K can be, for example, interpreted as the number of employee representatives on the board, this prediction is consistent with the findings in Gorton and Schmid (2004) that German companies having equal representation by employees and shareholders trade at a market discount compared to companies with one-third of employee representation; and those in Fauver and Fuerst (2006) of diminishing returns to employee representation over the level of one-third of board seats. Similar results are also obtained by Ginglinger et al. (2009) for the case of France.

Our analysis focuses on the effect of competition in the product market as the main channel through which stakeholder governance affects firm value. For this channel to work, firms must actually compete strategically in the market. This is captured in our model by the parameter d, which measures the degree of substitutability between the firms' products and which we require to be positive. While we are not aware of any formal test of this specific channel, indirect evidence can be found in the empirical finding in Cremers, Nair and Peyer (2008) that stakeholders improve firm efficiency in industries that are competitive, but not when they are monopolistic.

The model also has implications for the effects of globalization that allows for competition between stakeholder and shareholder firms. The analysis suggests that, when stakeholder orientation is beneficial, shareholder firms benefit most from globalization as they can free-ride on stakeholder competitors and increase their value relative to the case where they compete with other shareholder firms. By contrast, firms that are mandated to be stakeholder oriented in industries where cost uncertainty is relevant are better off when competing with another stakeholder firm rather than when competing with a shareholder firm.

One interesting implication of these results concerns the political economy of foreign entry. As long as a stakeholder orientation creates value, firms focusing only on shareholder value should have strong incentives to enter into a stakeholder-oriented economy through

the acquisition of an incumbent firm as this increases their value. However, as long as they maintain their corporate structure as in their home country, shareholder firms are likely to encounter greater resistance when entering a stakeholder-oriented market through a takeover than would firms that are more stakeholder friendly, since the entry of the former is more detrimental to incumbent firms. This resistance may come either directly from the existing firms, or from government policies geared toward protecting domestic firms from the threat of foreign entry. In contrast, shareholder-oriented economies should not be protectionist towards the entry through acquisition of stakeholder firms as their presence should have a positive effect on the incumbent firms and thus increase the value of the whole economy. To the extent that our simple analysis can be used to analyze foreign economic policy, these results are consistent with the casual observation that shareholder-oriented countries like the US tend to be less protectionist and more open to foreign industry penetration than more stakeholder-oriented countries like Japan. Testing these implications concerning firms' strategic decisions in terms of optimal corporate governance and expansion constitutes an important avenue for future research.

7 Concluding Remarks

Most of the literature on corporate governance is concerned with ensuring that the firm is operated in the interests of shareholders. However, in many countries firms are required by law or social norms to be not only concerned with shareholders but also with other stakeholders such as employees and suppliers. In this paper we have developed a model of mandated stakeholder capitalism and have compared the shareholder and stakeholder equilibria. We have also considered the situation resulting from globalization where stakeholder and shareholder firms compete and have identified the circumstances where each type of firm does better.

Our approach suggests a number of directions for future research. One of the interest-

ing questions is why some countries adopt stakeholder governance while others do not, and why governments adopt such governance although it may benefit firms and employees at the expense of consumers. There is a growing literature on corporate governance and political economy that emphasizes that the political process plays a very important part in determining the corporate governance structure in a country (see, e.g., Hellwig, 2000; Roe, 2003; Rajan and Zingales 2003, 2004; Pagano and Volpin 2005a, 2005b: Perotti and von Thadden, 2006; and Perotti and Volpin, 2007). For example, if workers and shareholders are made better off by co-determination and consumers are made worse off, then it is still likely that co-determination will be implemented. The reason is that workers and shareholders are usually better organized and are in a position to lobby in favor of co-determination, whereas consumers are dispersed. Such a political economy approach can help shed light on the emergence of stakeholder governance.

Another interesting observation is that the industrial structure of Germany and Japan is significantly different from that in the US and UK. Manufacturing industries are much more important in Germany and Japan, while services are predominant in US and UK. Interestingly, Germany and Japan are stakeholder-oriented economies whereas US and UK are not. An interesting empirical issue is whether there is a link between type of industries and corporate governance. In particular, in light of our model it would be interesting to see whether the different industry and corporate governance structures across countries can be attributed to the fact that cost uncertainty is relatively more important than demand uncertainty in manufacturing compared to services. If so, related to the political economy issue raised above, did industrial structure lead to governance structure, the opposite, or were they jointly determined?

The agency issue of how managers are motivated to act in the interests of shareholders has been an important part of the corporate governance literature for shareholder firms. A corresponding issue in our framework concerns how managers should be motivated to implement the stakeholder objective function. Large differences in the level and structure

of compensation of executives exist between shareholder and stakeholder oriented countries (see, e.g., Brealey, Myers and Allen, 2008, Chapter 13, p. 332). How much of these differences can be explained by the differences in the agency problem in shareholder and stakeholder societies?

Our analysis has implicitly assumed equity financing. An important issue is whether shareholder governance and stakeholder governance have different implications for optimal capital structure. An increased concern for survival in stakeholder firms may lead to the use of less debt. On the other hand, with cost uncertainty stakeholder firms have a lower probability of failure, other things equal, which may increase debt capacity. Another factor is that by forming a close relationship between banks and firms as in the *hausbank* system in Germany and the main bank system in Japan it may be possible to reduce the probability of bankruptcy despite the use of large amounts of debt. The banks may effectively insure the firms against bankruptcy.

The model we have used for the product market is clearly very simple. Many other features could be added. In particular, we have not considered many of the factors that make stakeholder governance socially costly in the long run. One example is the difficulties this system creates for firing workers and reallocating resources. Also, we have treated shareholders, stakeholders, and consumers as different groups. In practice, of course, there is a large overlap between them. For example, workers are also consumers. One issue is whether concern for stakeholders can be welfare improving compared to firms focusing on shareholders alone. Given that there are deadweight costs and rents this is a possibility. If so, how broad are these circumstances?

References

Acharya, V., S. Myers, and R. Rajan, 2008, "The Internal Governance of Firms," working paper, University of Chicago.

Allen, F., 2000, "Capital Structure and Imperfect Competition in Product Markets," in P. Hammond and G. Myles (eds.), *Incentives, Organization, and Public Economics: Papers in Honour of Sir James Mirrlees,* Oxford: Oxford University Press, 281-301.

Allen, F., 2005, "Corporate Governance in Emerging Markets," *Oxford Review of Economic Policy* 21, 164-177.

Allen, F., E. Carletti, and R. Marquez (2008). "Stakeholder Capitalism, Corporate Governance and Firm Value," Working Paper 07-39, Wharton Financial Institutions Center, University of Pennsylvania.

Allen, F., and D. Gale, 2000, *Comparing Financial Systems*, Cambridge, MA: MIT Press.

Aggarwal, R. and A. Samwick, 1999, "Executive Compensation, Strategic Competition and Relative Performance Evaluation; Theory and Evidence," *Journal of Finance* 54, 1999-2043.

Becht, M., P. Bolton, and A. Röell, 2003, "Corporate Governance and Control," Chapter 1 in G. Constantinides, M. Harris, and R. Stulz, (eds.) the *Handbook of the Economics of Finance*, Amsterdam: Elsevier-North-Holland, 1-109.

Blair, M., 1995, *Ownership and Control: Rethinking Corporate Governance for the Twenty-first Century,* Washington, D.C.: Brookings Institution.

Blinder, A., 1993, "A Simple Note on the Japanese Firm," *Journal of the Japanese and International Economies* 7, 238-255.

Brander, J. and T. Lewis, 1986, "Oligopoly and Financial Structure: The Limited Liability Effect," *American Economic Review* 76, 956-970.

Brealey, R., S. Myers and F. Allen, 2008, *Principles of Corporate Finance*, 9th edition, New York: McGraw Hill.

Campbell, Jr., R. and C. Frost, 2007, "Managers' Fiduciary Duties in Financially Dis-

tressed Companies: Chaos in Delaware (and Elsewhere)," *Journal of Corporation Law* 32, 491-525.

Claessens, S., and K. Ueda, 2008, "Banks and Labor as Stakeholders: Impact on Economic Performance," IMF Working Paper 08/229, Washington, D.C.

Cremers, M., V. Nair, and U. Peyer, 2008, "Takeover Defenses and Competition: The Role of Stakeholders," forthcoming, *Journal of Empirical Legal Studies*.

Dasgupta, S. and S. Titman, 1998, "Pricing Strategy and Financial Policy," *Review of Financial Studies* 11, 705-737.

Denis, D., and J. McConnell, 2003, "International Corporate Governance," *Journal of Financial and Quantitative Analysis* 38, 1-36.

Dixit, A., 1986, "Comparative Statics for Oligopoly," *International Economic Review* 27, 107-122.

Dore, R., 2000, *Stock Market Capitalism: Welfare Capitalism: Japan and Germany Versus the Anglo-Saxons*, Oxford: Oxford University Press.

Fauver, L. and M. Fuerst, 2006, "Does Good Corporate Governance Include Employee Representation? Evidence from German Corporate Boards," *Journal of Financial Economics* 82, 673-710.

Fershtman, C. and K. L. Judd, 1987, "Equilibrium Incentives in Oligopoly," *American Economic Review* 77, 927-940.

Ginglinger, E., W. Megginson, and T. Waxin, 2009, "Employee Ownership, Board Representation, and Corporate Financial Policies," working paper, University of Oklahoma.

Gorton, G. and F. Schmid, 2004. "Capital, Labor, and the Firm: A Study of German Codetermination," *Journal of the European Economic Association* 2, 863-905

Hellwig, M., 2000, "On the Economics and Politics of Corporate Finance and Corporate Control," Chapter 3 in X. Vives (ed.), *Corporate Governance: Theoretical and Empirical Perspectives*, Cambridge, UK: Cambridge University Press, 95-134.

Hillman, A. and G. Keim, 2001, "Shareholder Value, Stakeholder Management, and Social

Issues: What's The Bottom Line?", *Strategic Management Journal* 22, 125:139.

Jackson, G. and H. Miyajima, 2007, "Introduction: The Diversity and Change of Corporate Governance in Japan," Chapter 1 in M. Aoki, G. Jackson, and H. Miyajima, (eds.), *Corporate Governance in Japan: Institutional Change and Organizational Diversity*, Oxford: Oxford University Press.

Jensen, M. and W. Meckling, 1976, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics* 3**,** 305-360.

Jensen, M., 2001, "Value Maximization, Stakeholder Theory, and the Corporate Objective Function," *Journal of Applied Corporate Finance* 14, 8-21.

Licht, A., 2004, "The Maximands of Corporate Governance: A Theory of Values and Cognitive Style," *Journal of Corporate Law* 29, 649-746.

Milhaupt, C., 2001, "Creative Norm Destruction: The Evolution of Nonlegal Rules in Japanese Corporate Governance," *University of Pennsylvania Law Review* 149, 2083-2129.

O'Sullivan, M., 2000, *Contests for Corporate Control. Corporate Governance and Economic Performance in the United States and Germany*, Oxford: Oxford University Press.

Pagano, M. and P. Volpin, 2005a, "The Political Economy of Corporate Governance," *American Economic Review* 95, 1005-1030.

Pagano, M. and P. Volpin, 2005b, "Managers, Workers, and Corporate Control" *Journal of Finance* 60, 843-870.

Perotti, E. and P. Volpin, 2007,"Politics, Investor Protection and Competition," working paper.

Perotti, E. and E. von Thadden, 2006, "The Political Economy of Corporate Control and Labor Rents," *Journal of Political Economy* 114, 145-174.

Rajan R. and L. Zingales, 2003, "The Great Reversals: The Politics of Financial Development in the Twentieth Century," *Journal of Financial Economics* 69, 5-50.

Rajan R. and L. Zingales, 2004, *Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity*, Princeton: Princeton

University Press.

Rieckers, O. and G. Spindler, 2004, "Corporate Governance: Legal Aspects," Chapter 11 in J. Krahnen and R. Schmidt (eds.), *The German Financial System*, Oxford: Oxford University Press, 350-385.

Roe, M., 2003, *Political Determinants of Corporate Governance*, Oxford: Oxford University Press.

Schmidt, R., 2004, "Corporate Governance in Germany: An Economic Perspective," Chapter 12 in J. Krahnen and R. Schmidt (eds.), *The German Financial System*, Oxford: Oxford University Press, 386-424.

Scott, K., 1998, "The Role of Corporate Governance in South Korean Economic Reform," *Journal of Applied Corporate Finance* 10, 8-15.

Shleifer, A. and R. Vishny, 1997, "A Survey of Corporate Governance," *Journal of Finance* 52, 737-783.

Sklivas, S., 1987, "The Strategic Choice of Managerial Incentives," *RAND Journal of Economics* 18, 452-458.

Tirole, J., 2001, "Corporate Governance," *Econometrica* 69, 1-35.

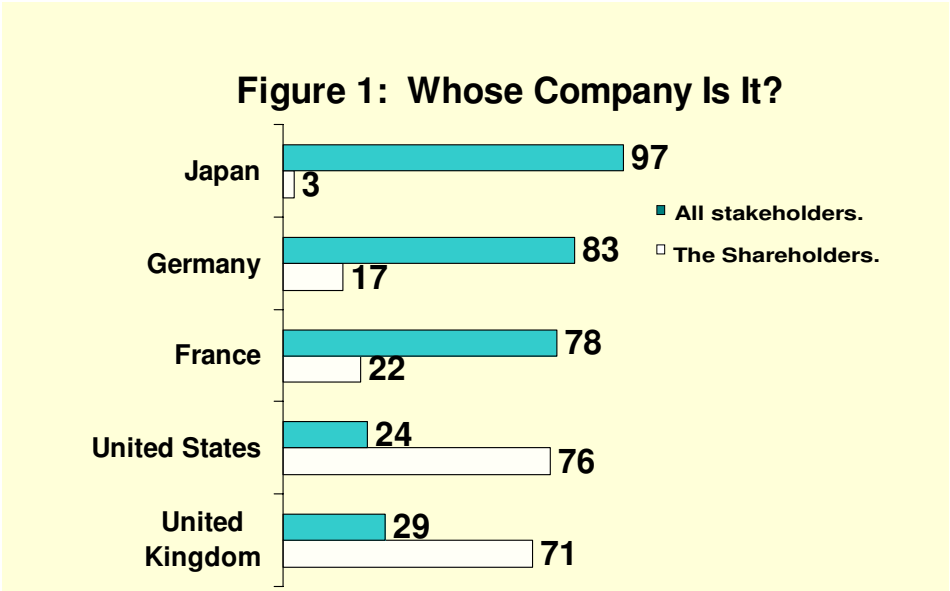
Tirole, J., 2006, *The Theory of Corporate Finance*, Cambridge, MA:MIT Press.

Wang, B. and H. Huang, 2006, "China's New Company Law and Securities Law: An Overview and Assessment," *Australian Journal of Corporate Law* 19, 229-242.

Wymeersch, E., 1998, "A Status Report on Corporate Governance Rules and Practices in Some Continental European States," in K. Hopt, H. Kanda, M. Roe, E. Wymeersch, and S. Prigge (eds.), *Comparative Corporate Governance: The State of the Art and Emerging Research*, Oxford: Clarendon Press.

Yoshimori, M., 1995, "Whose Company Is It? The Concept of the Corporation in Japan and the West," *Long Range Planning* 28, 33-44.

Figure 1: Whose Company Is It?



Number of firms surveyed: Japan, 68; United States, 82; United Kingdom, 78; Germany, 100; France, 50.

Source: Masaru Yoshimori, "Whose Company Is It? The Concept of the Corporation in Japan and the West." *Long Range Planning*, Vol. 28, No. 4, pp. 33-44, 1995

Figure 2: Firm value in the pure and mixed equilibrium with marginal cost uncertainty. The figure depicts the value of a firm in a pure shareholder equilibrium ($\hat{V}_{SHA}^{C}$), a firm in a pure stakeholder equilibrium ($\hat{V}_{STA}^{C}(K)$), and a shareholder firm ($\hat{V}_{iSHA}^{C}(K)$) and stakeholder firm ($\hat{V}_{jSTA}^{C}(K)$) in a mixed equilibrium as a function of the concern for stakeholders *K* in the case of marginal cost uncertainty. While $\hat{V}_{SHA}^{C}$ is independent of *K*, $\hat{V}_{STA}^{C}(K)$ is initially increasing in *K* and is decreasing for larger *K*. This implies that $\hat{V}_{STA}^{C}(K)$ is greater than $\hat{V}_{SHA}^{C}$ for $K < K^{*}$. For the mixed case, $\hat{V}_{iSHA}^{C}(K)$ is always increasing in the other firm's stakeholder orientation, *K*. By contrast, $\hat{V}_{jSTA}^{C}(K)$ is first increasing for low values of *K*, but is then decreasing. However, $\hat{V}_{jSTA}^{C}(K)$ is always less than $\hat{V}_{iSHA}^{C}(K)$. In the comparison of pure and mixed equilibria, a pure stakeholder firm is most valuable for $K < K^{++}$, while a mixed shareholder firm is most valuable otherwise.

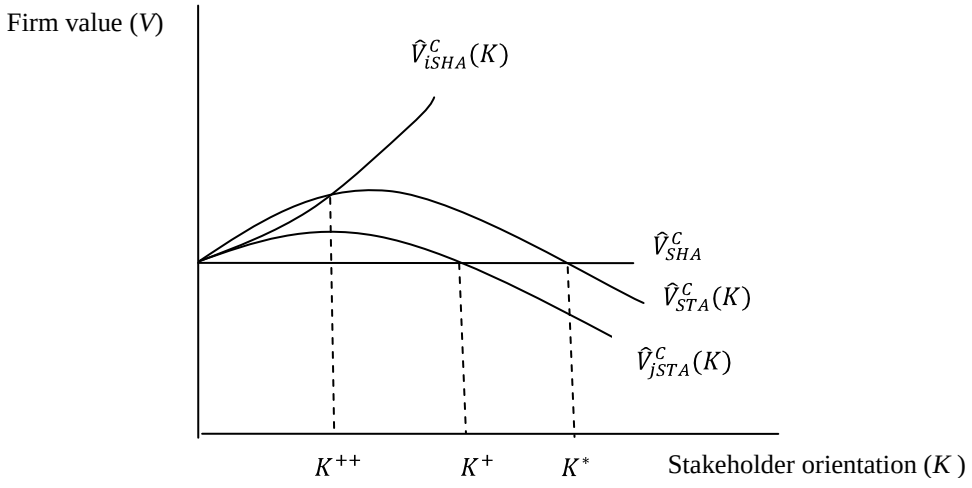
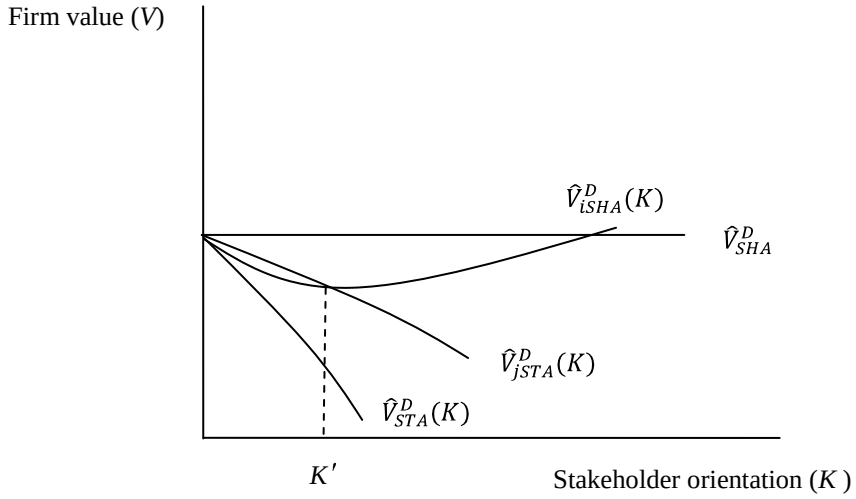


Figure 3: Firm value in the pure and mixed equilibrium with demand uncertainty. The figure depicts the value of a firm in a pure shareholder equilibrium ($\hat{V}^D_{SHA}$), a firm in a pure stakeholder equilibrium ($\hat{V}^D_{STA}(K)$), and a shareholder firm ($\hat{V}^D_{iSHA}(K)$) and a stakeholder firm ($\hat{V}^D_{jSTA}(K)$) in a mixed equilibrium as a function of the concern for stakeholders *K* in the case of demand uncertainty. While the function $\hat{V}^D_{SHA}$ is independent of *K*, $\hat{V}^D_{STA}(K)$ is always decreasing in K. Thus a stakeholder orientation reduces firm value (i.e., $\hat{V}^D_{STA}(K) < \hat{V}^D_{SHA}$ for all *K*). By contrast, in a mixed equilibrium a stakeholder firm is more valuable than a pure shareholder firm for $K < K'$. Finally, a pure shareholder firm is the most valuable for sufficiently low levels of orientation.



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