Race to the top or bottom? Corporate governance, freedom of reincorporation and competition in law

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Summary. This paper investigates the governance structure choices of firms when there is competition between legal systems. We study the impact of the allocation of control over choice of governance and reincorporation on firms' technologies and technological specialization of countries in the context of a model of the firm in which there are agency conflicts between shareholders and managers. We show that the allocation of control over firms' reincorporation decisions determines the corporate governance choice ex ante and the outcome of the competition between legal regimes ex post. When managers have control over reincorporation then competitive deregulation and "runs to the bottom" ensue. When shareholders have partial or full control then there is diversity in governance structures. Runs to the bottom are not necessarily socially undesirable but they have a feedback effect on firms' choices of technologies that may make the party in control worse off ex ante. We show that it is impossible for any country to achieve social welfare maximization of its existing and new enterprises. With competition between legal regimes, start-up and mature companies incorporate in different jurisdictions even when reincorporation is correctly anticipated.

Keywords and Phrases: Corporate governance, competition between legal systems, freedom of reincorporation, shareholder protection, technology choice, managerial private benefits

JEL Classification Numbers: G34, K22

1 Introduction

There has been an active debate in the U.S., first initiated by Cary in 1974, about the merits and deficiencies of freedom of incorporation. According to this, companies incorporated in one state have the right to operate in any other and states compete for companies to incorporate in their jurisdictions. This debate has become relevant to Europe. Article 48 of the Treaty of Rome granted companies incorporated in one member state of the European Union (EU) the right to operate in any other. The right was challenged by some member states that sought to impose the traditional Continental European doctrine of the "real seat". This requires companies to incorporate where their headquarters or substantial activities are located. It is only recently with judgements of the European Court of Justice that the principle of freedom of establishment has been reaffirmed.

In the U.S., the debate has focused on whether competition between states encourages "runs to the top or bottom" in standards of corporate legislation. According to one school of thought, in seeking to maximize shareholder value, companies choose to incorporate where states impose the highest standards. According to another, states are forced to adopt progressively laxer standards to attract and retain corporations and competitive deregulation ensues. There is a third line of argument which suggests that there is not much competition at all. Some states, for example Delaware, develop the administrative and legal expertise that encourages companies to adopt their legislation, and prevents others from competing with them. Furthermore, states operate under a federal umbrella that limits the relevance of variations in their legislation. The fact that the response to corporate governance failures has been federal rather than the state legislation, viz. the Sarbanes-Oxley Act, is illustrative of that.

Freedom of mobility raises more substantive questions about the nature of the corporation. Corporations are bodies that are granted legal status to sue and be sued, to contract and to hold property distinct from their members. Their status derives from laws that define the rights and obligations of corporations and in particular the duties and responsibilities of the directors to the members of the corporation. These laws are enacted at the level of member states of the EU and U.S. They differ in significant respect across member states, in particular in relation to the rights of members of corporations in regard to their officers and the wider responsibilities of corporations. These differences are particularly pronounced in the EU.

First, there are significant pronounced variations across countries in the ownership of firms. In particular, ownership varies from the highly concentrated, family

dominated firms of many Continental European countries to the dispersed ownership firms in the UK. The essence of the corporate governance problem therefore varies and differences give rise to particular corporate failures. While dispersed ownership creates significant corporate governance problems between shareholders and managers in dispersed ownership systems, concentrated ownership produces more serious conflicts between majority and minority shareholders in concentrated ownership systems.

Second, the capital structure of firms and the nature of financial systems vary from countries in which banks are the main providers of external finance to those in which stock markets are dominant. Conflicts can arise between shareholders and other investors as well as between shareholders and managers and the significance of these depends on the structure of countries' financial systems and their firms' capital structures.

Third, in many Continental European countries, companies are perceived to have social obligations beyond the interests of their investors. In Germany, employees have representation on the supervisory boards of companies. In France, employees are consulted through works councils. The nature of the corporation varies significantly across countries.

Associated with the legal status that is conferred on a corporation distinct from its members and officers are obligations that differ across countries. Like citizenship of countries by individuals, incorporation has different rights and duties associated with it depending on where it takes place. In the process of reincorporating under different jurisdictions, a corporation fundamentally alters its form and structure.

This makes competition between legal systems inherently more complicated and interesting than competition in normal product or factor markets. As in other markets, corporations will seek out jurisdictions that provide the most efficient delivery of the legal services that they require. Competition between systems therefore encourages productive efficiency in the traditional sense of the lowest cost delivery of services. For example, it is argued that one of the advantages of Delaware over other states in the U.S. is the legal expertise that it has accumulated in corporate law and the efficiency with which it can provide legal services to companies. Likewise, one of the factors influencing choice of location of incorporation in Europe, particularly by small companies, is the speed and cost with which firms can register in different jurisdictions.

However, corporate laws also differ in the menu of choices that they offer companies and the requirements that they impose on firms. Some states offer

protection against threats of takeover; others discourage the erection of takeover defences. For example, the Takeover Code in the U.K. does not permit firms to introduce poison pills once they have become subject to a takeover bid. In other European countries, a range of takeover defences including voting right restrictions have been routinely employed.

At one level, one could argue that competition between legal systems encourages allocative efficiency in the pricing of services in relation to their cost of delivery. Companies will seek to incorporate in countries and states that not only provide legal services at lowest cost but also where services are most appropriately configured to and priced in relation to their needs. It therefore encourages a matching of legal services to corporate requirements.

However, when the services that are being provided concern the control of firms then the issue is clearly more complex. In choosing their legal forms, companies are not just buying in normal factors of production they are determining the allocation of control of companies between managers and shareholders and between shareholders and other parties, such as employees. Competition between legal systems is not therefore the same as competition in product or factor markets. Account has to be taken of the change in the nature of the corporation as it moves as well as the relative efficiency of legal systems in assisting the corporation in attaining its productive objectives.

In this paper we provide a first examination of the merits and deficiencies of competition for incorporation in the context of a model in which there are conflicts between shareholders and managers in choice of investment strategy, what we term project selection. We note that in the process of moving between systems, the governance provisions of countries vary and influence the relative control rights of shareholders and managers. This allows companies to match the governance systems to their productive requirements. For example, some entrepreurial activities benefit from the delegation of authority from shareholders to managers running firms, whereas other more traditional activities may require more active oversight by shareholders. However, legal systems will also determine the allocation of control rights over reincorporation decisions themselves. So the choice of corporate form will itself reflect the allocation of authority over choice of state of incorporation. Who makes the choice of legal system and reincorporation - managers or shareholders?

We examine this in the context of a model in which there are shareholders and managers who earn profits and private benefits respectively. Firms are established with different technologies that determine the scale of profits and private benefits

available to the two parties. There are potential conflicts between shareholders and managers in choice of projects available to firms with project choice influencing the distribution of benefits between the two parties as well as their total magnitude. The degree of conflict is also influenced by the firms' technology.

The resolution of the conflict comes from the governance structure of firms and the allocation of control rights between shareholders and managers. Where legal systems confer strong control rights on shareholders then project selection will accord with shareholder preferences and vice versa where managers are free from external shareholder control. In the absence of competition between systems, what we term "autarchy", companies are forced to adopt the governance arrangements of their country of operation. With competition between systems, what we term the "union", firms can move around and select their governance system from the range available within the union. This promotes a matching of governance arrangements with firms' technologies but means that shareholders and managers may choose to relocate in jurisdictions that promote their interests over those of other parties. Depending on which party can select the preferred form of governance there are spillovers to the other party that mean that welfare diminishing choices can be made. If the set of available governance arrangements is endogenous, competitive deregulation and "runs to the bottom" may possibly ensue.

Whether selection of governance arrangements is on balance beneficial depends on the extent to which the adverse spillovers can be avoided. Where they can, the governance structures will allow activities that otherwise would be discouraged to be undertaken. A central issue that the paper will address is therefore who in a union should possess the relocation decision right, shareholders or managers? We show that the allocation of control over the reincorporation decision has important effects on the welfare properties of competition between systems.

One critical issue that freedom of mobility of firms raises is the case for corporate law as against freedom of contract. Why have menus of alternative governance arrangements available in a union instead of just granting companies free choice over their corporate governance through their charters and memoranda of association? So long as there is a correspondence of choice of governance with location of productive activities the answer would appear to be straightforward. Countries may have a preference for some types of corporate activities over others. For example, some countries attach considerable importance to the protection of employee rights. This is equivalent to countries seeking particular norms of conduct of citizens of their countries. But if production and country of incorporation can be separated so that a German firm with no activities in the U.K. can nevertheless be incorporated in the U.K. then this argument is no longer relevant. What does

it mean to be a U.K. corporation if none of the activities of the firm are undertaken in the U.K? The answer we would give is that the citizens of countries do not wish to be associated with certain types of corporations irrespective of where they are located, for example, those that exploit their employees, that extract large private benefits for their managers or that impose significant costs on local communities through hostile takeovers. We seek certain norms of conduct of our firms irrespective of the location of their operations.

As we will discuss in the final section, the results are of broader relevance to questions of legislative and regulatory competition than those captured in the model. For example, in addition to the distinctions noted above between European and US corporate systems and legislation, there is a marked difference in the US between corporate law, which is in part enacted at the state level and bankruptcy law that is federal not state law. What could justify such a distinction?

Our paper is related to the literature on the management-shareholder conflict (Burkart, Gromb, Panunzi (1997), Fluck (1999)), on the design of corporate governance systems (Burkart, Gromb, Panunzi (1997), John and Kedia (2002), Klein (2002), Gillan, Hartzell, Starks (2003)), on the selection and impact of corporate governance regimes (Pagano and Volpin (2002a, 2002b), Perotti and Von Thadden (2002)) and on regulatory competition between legal regimes (Baysinger and Butler (1985), Romano (1985, 2002, 2005a, 2005b), Daines (2001), Bebchuk (2002), Bebchuk and Ferrell (2002), Bebchuk and Hamdani (2002), Kahan and Kamar (2002), Roe (2003)). The paper is organized as follows. Section 2 develops the model. Section 3 describes the case of autarchy and Section 4 presents the union. Section 5 concludes the paper.

2 The Model of the Firm

A firm is set up by a group of shareholders for the operation of a specific technology. To run the technology the shareholders need to hire a manager. The manager has no wealth whatsoever and his effort in selecting the right project is critical for the success of the firm. The more effort the manager exerts, the better informed he will become about payoff structures of available projects. However, the firm faces an agency problem. Since the manager can derive private benefits from the project he runs, and the private benefits vary across projects, an informed manager will not necessarily select the project that maximizes shareholder value.

Our model of the firm is related to Burkart, Gromb and Panunzi (1997). Burkart, Gromb and Panunzi investigated the tradeoff between managerial control

and shareholder monitoring within the boundaries of a firm. In our paper we investigate the management-shareholder conflict in a model of competition among firms within and across countries to study technological development, growth, choice of legal regimes and competition between legal regimes. In Burkart, Gromb and Panunzi (1997) the authors focused on the monitoring choice of shareholders, a decision that is made simultaneously with the manager's effort choice. In our paper the focus is on founding shareholders' ex ante corporate governance regime choice and its impact on subsequent managerial effort, reincorporation decisions, firm performance, economic development, technological progress and countries' choice of governance structures and legal regimes of reincorporation.

The underlying formal model of firm i is as follows. Each firm i is endowed with a technology τ_i. The technology τ_i is characterized by the triplet $(\mathbf{\Pi^i}, \mathbf{B^i}, \lambda^i)$ where $\mathbf{\Pi^i}$ is an (N+1)-vector representing the shareholder payoffs for each of firm i's potential (N+1) projects, $\mathbf{B^i}$ is an (N+1)-vector representing the private benefits that the manager can divert from each of the $(N+1)$ potential project and λ_i is a constant that captures the degree of agency problem associated with the technology τ_i of firm i. We will denote elements of $\mathbf{\Pi^i}$ by π^i_k and those of $\mathbf{B^i}$ by b^i_k.

The payoffs of the firm's projects are as follows. Project 0 yields $(0, 0)$. Project 1 through (N-2) yield ($\pi^i_k < 0$; $b^i_k < 0$, $k = 1, ..., (N-2)$) with one of these projects being catastrophic for the firm (the shareholders and the manager), i.e. ($\pi^i_{\underline{k}} = -\infty$; $b^i_{\underline{k}} = -\infty$). With probability λ^i, project $(N-1)$ and N yield ($\pi^i > 0$, $b^i > 0$) and $(0, 0)$. With probability $(1-\lambda^i)$, project $(N-1)$ and N yield ($\pi^i > 0$, 0) and $(0, b^i > 0)$, respectively. Note that the shareholders always prefer project $(N-1)$ to project N, whereas, depending on the realization of the payoffs, the manager may prefer project $(N-1)$ to project N or project N to project $(N-1)$. Note also that the higher is λ, the closer aligned ex ante are the interests of the manager and the shareholders.

The project payoffs may be observable if some non-verifiable effort is made by the manager. When the manager exerts effort $e \in [0, 1]$, then he learns the payoffs of all the projects with probability e. That is, with probability e he can identify each project and can tell whether the payoff realization of project $(N-1)$ is ($\pi^i > 0$, $b^i > 0$) or ($\pi^i > 0$, 0) and whether the payoff of project N is (0, 0) or (0, $b^i > 0$). Otherwise, the manager can only distinguish project 0 from the rest of the projects but he cannot identify any of the other N projects. Effort provision is costly for the manager. If the manager exerts effort e, he incurs a cost $e^2/2$.

Given the technology, the manager will choose the project that maximizes his payoff. When the manager does not observe the projects' payoffs, he will choose

project 0. When the manager is informed he will choose either project N or project $(N-1)$. Depending on the degree of the agency problem, λ, the manager's project choice may or may not maximize shareholder value.

The governance structure of a firm is defined in our model as the level of shareholders' control over the managerial actions. When a firm is established, founding shareholders choose the governance structure of the firm. The governance structure limits the control of the manager and alleviates the agency problem between management and shareholders. However, limiting control comes at a cost: reduced managerial incentives for provision of effort and less informed project selection.

We denote the governance structure of the firm by G. The governance structure of the firm, G, determines how much control the manager can expect to have in project selection or how actively shareholders expect to intervene in the project selection. When shareholders pick a specific $G \in [0, 1]$ as their governance structure choice, then at a cost $G^2/2$ they become informed with probability G whenever the manager has become informed and can then intervene in the project selection. Note that the manager's choice of effort will depend on the governance structure of the firm.

When the manager is uninformed, he will choose project 0 and consequently his project choice will coincide with that of the shareholders. If the manager is informed but the shareholders are uninformed, the shareholders will follow the manager's recommendation. If both parties are informed, then the shareholders will intervene in the project selection and will implement project $N-1$.

We assume that the initial incorporation decision is made by the shareholders of the company. The legal regime of the country determines whether the company can be reincorporated at a later stage, which party can make the reincorporation decision and at what level is this decision regulated. By reincorporation we mean that the party in control adopts a different governance structure for the company from the existing one. We study scenarios in which the reincorporation decision is allocated to the manager with or without a shareholder veto, or to the shareholders, with or without a managerial veto.

In the next section we will study two countries in autarchy and we will derive the effort choice, the governance structure and the resulting payoff function for the manager and the shareholders. In the following section we will extend the analysis to states that form a union. In autarchy each country adopts its governance structure independently. Different countries will select different governance structure choices depending on their historical industrial specialization. In our autarchy

model, companies have no choice but to adopt the governance structure of their country. In our model of a union, companies can incorporate or reincorporate under any governance structure that is offered by states within the union.

3 Autarchy

Suppose that there are two countries i=1,2. Each country operates in autarchy. Each country is endowed with its own technology. There is a single firm in each country running the country's technology. Given the technology, the founding shareholders of each firm choose the governance structure of the firm after taking into account the impact of their governance structure on the manager's subsequent effort choice. Each country adopts the governance structure for its respective technology.

3.1 The governance structure choice

In this section we will investigate the shareholders' governance structure choice. Since the shareholders take into account the impact of their governance structure on the manager's effort, we will start the analysis by deriving the manager's effort choice.

Given the technology τ^i of country i, the manager will exert the effort that maximizes his payoff conditional on the shareholders' governance structure choice, G. The manager's payoff function is

$$M(\tau, G, e) = e[G\lambda b + (1 - G)b] - \frac{e^2}{2} \tag{1}$$

where $0 < e < 1$, $0 < G < 1$ and $0 < \lambda < 1$.

Notice that we simplified the notation by omitting the country superscript in the mathematical expression above. Where possible, we will do so in the remainder of paper. In the above expression b refers to the manager's payoffs under technology τ^i for projects $(N - 1)$ and project N and λ to the degree of agency problem associated with technology τ^i.

Formally, the manager solves

$$\max_e e[G\lambda b + (1 - G)b] - \frac{e^2}{2} \tag{2}$$

After taking the first-order condition of (2) we get

$$e = \min\{b[1-(1-\lambda)G]; 1\} \tag{3}$$

Hence, as G increases toward 1, managerial effort, e decreases. Notice from (3) that $e \in [\lambda b; b]$. To simplify the above expression, we will assume, without loss of generality, that $b < 1$. Then, we can rewrite (3) as

$$e = b[1-(1-\lambda)G] \tag{4}$$

When selecting the governance structure of the firm, the shareholders will take into account the impact of their governance structure on the manager's subsequent effort choice. They will choose the governance structure of their firm by maximizing their payoff anticipating the manager's future effort choice.

The shareholders' payoff function shown below depends on the governance structure choice and the manager's corresponding effort choice:

$$V(\tau, G, e) = e[G\pi + (1-G)\lambda\pi] - \frac{G^2}{2} \tag{5}$$

Formally, the shareholders will solve

$$\max_G e[G\pi + (1-G)\lambda\pi] - \frac{G^2}{2} \tag{6}$$

Recall that π refers to the shareholders' payoff under technology τ^i for project $N-1$ and project N.

Substituting from (4) the manager's reaction function in the shareholders' objective function above, the maximization problem can be rewritten as

$$\max_G b(1-(1-\lambda)G)[G\pi + (1-G)\lambda\pi] - \frac{G^2}{2} \tag{7}$$

Simplifying the objective function will result in

$$\begin{aligned} V(\tau, G) = \; & bG\pi + b(1-G)\lambda\pi - b(1-\lambda)G^2\pi \\ & - b(1-\lambda)\lambda G\pi + b(1-\lambda)\lambda G^2\pi - \frac{G^2}{2} \end{aligned} \tag{8}$$

Notice that the objective function is quadratic, so we reorganize it into its canonical form in order to identify its convexity properties and extreme points.

$$V(\tau, G) = -\left[b(1-\lambda)^2\pi + 1/2\right]\left(G - \frac{b\pi(1-\lambda)^2}{2(b\pi(1-\lambda)^2 + 1/2)}\right)^2 + b\pi\lambda - \frac{b^2\pi^2(1-\lambda)^4}{4(b\pi(1-\lambda)^2 + 1/2)^2} \tag{9}$$

Since the multiplier on the quadratic term, $-[b(1-\lambda)^2\pi + 1/2]$ is always negative, V is concave. The governance structure choice where maximum of $V(\tau, G)$ obtains is given by

$$G^* = \frac{b\pi(1-\lambda)^2}{1 + 2b\pi(1-\lambda)^2} \tag{10}$$

It is easy to see that for any $\pi > 0,\ b > 0$ and $0 < \lambda < 1,\ \ G^* < 1$.

Next we compute the manager's effort choice under the shareholders' governance structure choice. Under G^*, the manager will provide effort level e^*, where

$$e^* = \frac{b(1 + b\pi(1-\lambda)^2(1+\lambda))}{1 + 2b\pi(1-\lambda)^2}. \tag{11}$$

Note that $0 < b < 1$ implies that $0 < e^* < 1$.

Notice that G^* depends on π, b and λ only via the product $\pi b(1-\lambda)^2$. Thus, a change in π impacts G^* the same way as a change in b does. If π goes up, G^* goes up because the returns to shareholder activism increase. Similarly, a rise in b will induce the manager to exert more effort and as a result he will choose project N more often. Hence a rise in b will cause G^* to increase. Finally, a drop in λ will reflect a more severe agency problem between the manager and the shareholders and thus an increase in the returns to shareholder activism.

Finally, we compute the manager's payoff and the shareholder value under the governance structure choice, G^*. Here we reintroduce the country subscript into our mathematical expressions. From (1), the manager's payoff in country i

$$M_i^*(e^*, G^*) = e_i^* G_i^* \lambda_i b_i + e_i^*(1 - G_i^*)b_i - \frac{e_i^{*2}}{2} \tag{12}$$

After substituting for G_i^* and e_i^* from (10) and (11), the managerial payoff becomes

$$M_i(\tau, G_i^*, e_i^*) = b_i^2 \frac{1 + 2b_i\pi_i(1-\lambda_i)^2 + b_i^2\pi_i^2(1-\lambda_i)^4(1-\lambda_i^2)}{2(1 + 2b_i\pi_i(1-\lambda_i)^2)^2} \tag{13}$$

The shareholder value for firm i under the shareholders' governance structure choice, G_i^* is

$$V_i(\tau, G_i^*, e_i^*) = b_i(1 - (1 - \lambda_i)G_i^*)(G_i^*\pi_i + (1 - G_i^*)\lambda_i\pi_i) - \frac{G_i^{*2}}{2} \tag{14}$$

After substituting in for G_i^* and e_i^*, the shareholder value for firm i is

$$V_i(\tau, G_i^*, e_i^*) = b_i\pi_i\lambda_i + \frac{b_i^2\pi_i^2(1 - \lambda_i)^4}{2(1 + 2b_i\pi_i(1 - \lambda_i)^2)} \tag{15}$$

Notice that the shareholder value under the governance structure choice G^* depends on π and b only through their product πb only.

4 Union

Now suppose that country i and country j form a union. Each country is endowed with its own technology, τ_i and τ_j, respectively. There is one firm in each country, which we call firm i and firm j. We assume that each country chooses its own governance structure G_i^* and G_j^* to maximize shareholder value given the country's technology. (We will consider alternative scenarios in Section 4.5.) When the countries form the union, company i can reincorporate in country j and company j can reincorporate in country i. That is, each firm can decide within the union which country's governance structure to adopt.

4.1 The reincorporation decision

There are several ways in which control over the reincorporation decision can be allocated. Control can be allocated to the manager or to the shareholders. Alternatively, the manager and the shareholders can exercise joint control over the reincorporation decision, i.e. if one party is granted the right to choose whether and where to reincorporate their firm, then the other party is granted veto power over the reincorporation decision. We will analyze the reincorporation decision case by case: first when the manager is in full control and then when the shareholders have partial or full control. Finally, we will make a welfare comparison of the three regimes.

4.1.1 The manager's control

In this section we assume that the manager has full control over the reincorporation decision. We then investigate whether the manager in country i, given country i's technology, would benefit from adopting the governance structure of country j.

The manager of firm i in country i would benefit from reincorporating his firm in country j if and only if

$$M_i(G_j^*, e(G_j^*)) > M_i(G_i^*, e_i^*). \tag{16}$$

Hence, the willingness of firm i's manager to reincorporate his firm in country j depends on the monotonicity properties of M with respect to G. To derive these, we substitute from (11) the manager's reaction function $e(G) = b(1-(1-\lambda)G)$ into the manager's payoff function M, in (1). After simplifying the resulting expression for M we get

$$M_i(G) = \frac{(1-(1-\lambda)G_i)^2 b_i^2}{2}. \tag{17}$$

The first differentiation of M with respect to G yields

$$\frac{\partial M}{\partial G} = -b^2(1-\lambda)(1-(1-\lambda)G) < 0. \tag{18}$$

Differentiating M twice gives

$$\frac{\partial^2 M}{\partial G^2} = b^2(1-\lambda)^2 > 0. \tag{19}$$

It follows from (18) and (19) that M is strictly monotone decreasing and convex in G. Thus, the manager of firm i will never want to reincorporate his firm in country j if country j has a stricter governance structure than country i, i.e. if $G_j^* \geq G_i^*$. Furthermore, the manager of firm i will always want to reincorporate his firm in country j if country j has a looser governance structure than country i, i.e. if $G_j^* < G_i^*$. We formalize this finding in Proposition 1 below.

Proposition 1 ***Run for the bottom.*** *Given country i's technology τ^i and its optimal governance structure G_i^*, the manager of firm i will always want to reincorporate his firm in country j if and only if country j has a weaker governance structure than country i, that is, if and only if*

$$\frac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} < \frac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}. \tag{20}$$

It follows from Proposition 1 that (i) the manager of firm i never wants to reincorporate his firm in a country with a more restrictive governance structure; (ii) the manager of firm i will always wants to reincorporate his firm in a country with weaker governance structure. Given the monotonicity and convexity properties of M established above, the proof is straightforward and is therefore omitted.

As shown in the corollary below, the impact on shareholder value of the manager's decision to reincorporate is always negative. The social welfare implications of the reincorporation decision will be investigated in Section 4.2.

Corollary 1 *Whenever the manager of firm i decides to reincorporate firm i in country j, shareholder value will be destroyed.*

Proof: in Appendix.

When the reincorporation choice is made by the manager, Proposition 1 implies that countries with more restrictive corporate governance mechanisms cannot prevent the exodus of their firms to other countries unless they relax their governance structures. Corollary 2 and Corollary 3 state this result.

Corollary 2 ***Reincorporation wave: Run for the bottom.***
When the reincorporation choice is made by the manager, then all companies will reincorporate under the least restrictive, most manager-friendly governance structure.

As a consequence of Corollary 2, the governance structure choices of states must converge, or else the states with more restrictive governance structures will be abandoned by all companies.

Corollary 3 ***Convergence of governance structures.***
When the reincorporation choice is made by the manager, then all states in the union will adopt the least restrictive governance structure or they will not be chosen by companies as their place of incorporation.

This result implies that when managers have full control over the ex post reincorporation decision, then either all states "run for the bottom" or there will be no competition between states for corporations. The states may replicate the most business-friendly state if replication is costless. If, on the other hand, replicating the legal institutions is costly, then the implication of Corollary 3 is consistent

with the view of Kahan and Kamar (2002). Namely, when managers have control over the reincorporation decision ex post, then the dominant position of a single state among states in the charter market (in case of the United States the state of Delaware) is evidence of the lack of regulatory competition between states. This conclusion is also supported by Bar-Gill, Barzuza and Bebchuk (2002). In their study the authors developed a model of competition for incorporation by states where establishing legal institutions is costly and one particular state (Delaware) has a first-mover advantage.

4.1.2 Partial or Full Control by Shareholders

This case includes three distinct scenarios. In the first scenario the manager is granted the right to choose whether and where to reincorporate his firm, and the shareholders are granted veto power over the manager's reincorporation decision. In the second scenario shareholders are granted the right to choose whether and where to reincorporate their firm and the manager has veto power over the shareholders' reincorporation decision. In the third scenario shareholders have sole control over the reincorporation decision. Since the outcome of the reincorporation decision is the same in each of the three cases, we consider them jointly as one case. However, it is important to emphasize that each of these three is a distinct control allocation scheme and as we shall see in Section 4.2, they will have different welfare properties.

To analyze the reincorporation decision under partial or full shareholder control, recall from (6) that $G^* = \arg\max_G V(\tau^i, G)$. Hence, the shareholders of an existing company cannot benefit from loosening or tightening the governance structure of their company. Holding the technology choice fixed, we can state the following proposition. The proof is straightforward and is omitted.

Proposition 2 *When the ownership structure is fixed and shareholders have partial or full control over the reincorporation decision, then no firm will ever reincorporate in another country.*

Thus, when shareholders have partial or full control over the ex post reincorporation decision, then their firm's future governance structure will be unchanged. Since large shareholders are more likely to be able to exercise effective control over the reincorporation decision than dispersed small shareholders, this proposition suggests that companies in which founders maintain a large stake are less likely to reincorporate into another jurisdiction. In the next section we will investigate the welfare implications of different control allocation schemes over the reincorporation of firms.

4.2 Ex-post welfare comparison of control allocations

In this section we compare the social welfare implications of full and partial control by managers and shareholders over the ex post reincorporation decisions of their firms. First, we will characterize the efficiency properties of the shareholder choice regime, then the manager's choice regime and then the joint control allocation schemes.

Let W denote social welfare. Then by definition,

$$W = M + V \tag{21}$$

To obtain the social welfare maximizing governance structure, we substitute into (21) for M and V from (1) and (5), respectively

$$W = eG\pi + e(1-G)\lambda\pi - \frac{G^2}{2} + eG\lambda b + e(1-G)b - \frac{e^2}{2} \tag{22}$$

Reorganizing the above expression yields

$$W = eG(1-\lambda)(\pi - b) + e(\lambda\pi + b) - \frac{G^2}{2} - \frac{e^2}{2}. \tag{23}$$

Substituting the manager's reaction function, $e(G)$, from (11) into (23), we obtain W as

$$\begin{aligned} W = {} & b(1-(1-\lambda)G)[G(1-\lambda)(\pi - b) + \lambda\pi + b] \\ & - \frac{G^2}{2} - \frac{b^2(1-(1-\lambda)G)^2}{2}. \end{aligned} \tag{24}$$

Reorganizing the welfare function yields

$$\begin{aligned} W = {} & -\frac{G^2}{2}[b(1-\lambda)^2(2\pi - b) + 1] \\ & + G[b(1-\lambda)((-\lambda)\pi - b)] + b(\lambda\pi + b) - \frac{b^2}{2} \end{aligned} \tag{25}$$

Notice that W is a quadratic function of G if $\pi \neq 1/2(b - \frac{1}{b(1-\lambda)^2})$.

The following proposition identifies the social welfare maximizing corporate governance structure and relates it to the shareholder value maximing choice.

Proposition 3 *The social welfare maximizing level of G, $\overline{G}$,*

$$\overline{G} = \begin{cases} \frac{b(1-\lambda)[(1-\lambda)\pi - b]}{b(1-\lambda)^2[2\pi - b]+1} & \textit{if } (1-\lambda)\pi > b \textit{ and } \pi > 1/2\left(b - \frac{1}{b(1-\lambda)^2}\right) \\ 0 & \textit{otherwise,} \end{cases}$$

is always less than the one associated with shareholder value maximization, G^*.

Proof: in Appendix.

As previously noted, the managerial welfare maximizing level of G is G = 0. Under certain conditions, this corresponds with maximum social welfare and managerial control over reincorporation then maximizes social welfare. From equation (25), the derivative of W with respect to G is negative at G = 0 when $b > (1-\pi)\pi$.

Proposition 4 *Managerial control over reincorporation maximizes social welfare when either (i) $b \geq (1-\pi)\pi$ or (ii) $b < (1-\pi)\pi$ and $1/2\left(b - \frac{1}{b(1-\lambda)^2}\right) \geq \pi$ hold.*

Proof: in Appendix.

Where managerial private benefits are high in relation to returns to shareholders or where private benefits are modest but there is little divergence of interest between shareholder and manager then the social welfare maximizing level of corporate governance corresponds with that selected by management and runs to the bottom are welfare maximizing.

Otherwise managerial control over reincorporation may raise or lower social welfare from what it is at the shareholder value maximizing governance, G*, i.e. given the technology choice τ, $W(\tau, G^M)$ can be greater or less than $W(\tau, G^*)$. Proposition 5 states this result, the conditions are presented in the appendix.

Proposition 5 *Managerial control over reincorporation may increase or decrease social welfare from what it is under shareholder control.*

Proof: in Appendix.

Runs to the bottom are *not* therefore *undesirable*. They may be associated with maximum social welfare or at least higher levels of welfare than when shareholders have control over reincorporation.

If managerial control does not maximize social welfare (i.e. if neither (i) nor (ii) of Proposition 4 hold) and side-payments between managers and shareholders are possible then better outcomes than either managerial or shareholder control over reincorporation can be achieved by granting management control and shareholders the right to veto the managerial decision or alternatively granting shareholders control and management "the right to bribe" shareholders to shift to less onerous government regimes. Proposition 6 and Corollary 4 states these findings. The proofs are straightforward and therefore omitted.

Proposition 6 *If the manager has some wealth, then social welfare can be improved by granting reincorporation rights to one party and veto rights or "rights to bribe" to the other party.*

Corollary 4 *If the manager has sufficient wealth, then social welfare maximum governance structure (first best) can be achieved through granting reincorporation rights to one party and veto rights or "rights to bribe" to the other party.*

In summary, single governance systems are optimal and can be achieved in a union by conferring reincorporation rights on management where technologies with high private benefits and/or low divergence of interests between management and shareholders prevail. Technologies with lower private benefits and greater divergence of interests require multiple governance systems. But even here, the optimal level of governance does not correspond to that of shareholder value maximization since this invariably fails to reflect managerial interests adequately. Thus while in some cases it is beneficial to confer full reincorporation rights on management, it is never optimal to confer full rights on shareholders. Management should at least be granted the right to reincorporate in less stringent governance regimes subject to a shareholder veto to prevent uncompensated reductions in welfare from taking place.

It is interesting to relate our theory on reincorporation decisions to the recent literature on firms cross-listing decisions (Pagano, Roell, Zechner (2002), Reese and Weisbach (2002)). In our setting it is transparent that a company cannot always achieve its desired governance structure by opting out of its country's governance regime and listing elsewhere. This is so because listing elsewhere can only tighten

a company's governance structure but cannot relax it. As our model demonstrates, in certain cases relaxing a governance structure is socially desirable which cannot be accomplished by cross-listing.

4.3 Setting up a new company

So far we have focused on the reincorporation decision of established companies. Now we take a step backward to study the founding shareholders' initial decision of setting up a new company. When setting up a new company, shareholders decide which technology to adopt and which governance structure to select conditional on the allocation of control over the ex-post reincorporation decision. The country, as before, will adopt the governance structure choice of founding shareholders.

To investigate the technology choice of shareholders, from now on we will assume that each country is endowed with a set of technologies, T^i and T^j, respectively. We will denote elements of these sets by τ_k^i and τ_l^j, respectively. The set of feasible technologies can differ across countries, as some countries may have an edge in certain technologies that are difficult to replicate. This may be due, for example, to geographical characteristics, natural resources, economies of scale, and education and training of the labour force.

When shareholders set up a new firm, they will choose the technology and the governance structure of the firm to maximize shareholder value subject to the constraints they face. If the shareholders could hold the future governance structure of the firm unchanged, then their choice of technology will be τ_i^* and τ_j^*, where

$$(\tau_i^*; G_i^*) = \arg\max_{\tau_i \in T_i} V(\tau_i, G), \text{ and} \tag{26}$$

$$(\tau_j^*; G_j^*) = \arg\max_{\tau_j \in T_j} V(\tau_j, G), \tag{27}$$

respectively. Otherwise, the shareholders will rationally anticipate the possibility that the manager may reincorporate their firm in another country and they will take this into account when making the technology choice ex ante. We will denote by τ_i^S and τ_j^S, respectively, the shareholders' choice of technology in country i and j when the shareholders rationally anticipate future changes in the governance structure of their firms. We will now show that shareholders' willingness to set up a new company and endow it with capital will indeed depend on the allocation of control rights over the ex-post reincorporation decision.

4.3.1 The manager's control over the ex-post reincorporation

If the manager has full control over the reincorporation decision ex-post, then it follows from Proposition 2 that only the least restrictive, most manager-friendly governance structure will survive. When setting up a new company ex ante, shareholders rationally anticipate that ex post the manager will reincorporate their firm in the country with the least stringent, most manager-friendly governance structure (See Proposition 1) and this reincorporation will result in a loss of shareholder value ex-post (See Corollary 1). Hence the shareholders will only start a new company if the value they can expect under the least restrictive governance structure exceeds their breakeven value or the value of their outside option. Thus, the shareholders will adopt the technology that guarantees them the highest shareholder value under the least restrictive governance structure (assuming that this value exceeds their breakeven value or the value of their outside option). Proposition 7 below states this result.

Proposition 7 *Suppose that the manager has full control over the reincorporation decision ex post. Then the shareholders' choice of technology τ_i^S and τ_j^S is as follows.*

(i) If $\dfrac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} < \dfrac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}$, *then*

$$\tau_i^S = \arg\max_{\tau_i \in T_i} V(\tau_i, G_j^*), \text{ and}$$
$$\tau_j^S = \tau_j^*, \text{ where } \tau_j^* \text{ is defined in (27);}$$

(ii) If $\dfrac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} > \dfrac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}$, *then*

$$\tau_i^S = \tau_i^*, \text{ where } \tau_i^* \text{ is defined in (26), and}$$
$$\tau_j^S = \arg\max_{\tau_j \in T_j} V(\tau_j, G_i^*);$$

(iii) If $\dfrac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} = \dfrac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}$, *then*

$$\tau_i^S = \tau_i^*, \ \textit{and}$$
$$\tau_j^S = \tau_j^*.$$

Proposition 7 above demonstrates that if the ex-post reincorporation decision is made by the manager, then founding shareholders will adopt the technology that produces the highest shareholder value under the least restrictive, most manager-friendly governance structure.

An important consequence of Proposition 7 for productive efficiency is summarized in Corollary 5 below.

Corollary 5 ***Run for the bottom, run for the top.***
When the manager has full control over the reincorporation decision ex-post, then the technology that produces the highest shareholder value under the least restrictive, most manager-friendly governance structure will squeeze out all other technologies.

The next corollary will state that the legal regime in which the manager has full control over the ex post reincorporation decision has an upside: it encourages shareholders to adopt innovative high-tech technologies ex ante. Evidence from the US that most new IPO high-tech companies are incorporated in the state of Delaware, the most business-friendly state is consistent with that.

Corollary 6 *When the manager has full control over the reincorporation decision ex post, then shareholders will move toward more high-tech or creative industry technologies and will be more likely to start new companies in innovative high-tech sectors, or in sectors with high asset specificity.*

Since the technology choice of shareholders, τ^S,

$$\tau^S = \arg\max_{\tau \in T} V(\tau, \min\{G_i^*, G_j^*\})$$

maximizes the shareholder value at the most manager-friendly governance structure, and the shareholders rationally anticipate that the manager will reincorporate their firm in the most manager-friendly state, shareholders may possibly choose the state with the most manager-friendly governance structure ex ante as the state of incorporation for their company. When the manager has full control over the

reincorporation, then, *given the ex ante technology choice*, the ex-post shareholder value might possibly reach its maximum at the governance structure that grants managers the highest level of discretion in their business judgment. However, this is a constrained maximum since the technology was chosen in anticipation of the ex post reincorporation decision, not the overall maximum.

One can link this finding to the current debate on regulatory competition between states in the United States (Romano (1985, 2005a, 2005b), Bebchuk (2002), Bebchuk and Ferrell (2002), Bebchuk and Hamdani (2002), Kahan and Kamar (2002), Roe (2003)). On one side of this debate it is frequently argued that incorporation in Delaware, the state that grants broad managerial discretion in its application of the business judgment rule, maximizes shareholder value. For example, Daines (2001) reports higher Tobin's q for firms incorporating in Delaware and interprets it that incorporating in Delaware increases shareholder value. Our model suggests another possible interpretation of this evidence. Since Tobin's q is a proxy for firms' growth opportunities, this evidence can also be interpreted that companies with high growth opportunities more frequently incorporate/ reincorporate in Delaware which is in line with the prediction of our model. Thus, incorporating or reincorporating in Delaware does not necessarily imply overall shareholder value maximization (due to the endogeneity and the time inconsistency of the technology and the governance structure choice). Consequently, the prediction of our model is also in line with the contention of Bebchuk and Hamdani (2002) that a single state's dominant position in the charter market can be sustained in the absence of overall shareholder value maximization.

4.3.2 Shareholders' control over ex-post reincorporation

In this section we study the technology choice of start-up companies when the shareholders have partial or full control over the ex-post reincorporation decision of their firm.

Proposition 8 *If the shareholders have partial or full control over the ex post reincorporation decision, then ex-ante they will adopt technologies τ_i^* and τ_j^* (where τ_i^* and τ_j^* are defined in (26) and (27)) that maximize shareholder value across all governance structures.*

When the set of technologies differ across countries and when shareholders have partial or full control over the ex post reincorporation decisions of their firms, then, as Proposition 8 implies, different governance structures will be chosen ex ante. As a consequence, different governance structures will co-exist within the

union. In other words, when shareholders have at least partial control over the ex post reincorporation decisions of their firms, then within the union the governance structure choices of states do not necessarily converge. This outcome is in sharp contrast with the case where managers make the governance structure choice ex-post. As Proposition 2 and Corollary 3 demonstrate, the governance structure choices of states will converge if the managers have full control over the ex-post reincorporation decisions of their firms. However, if the shareholders are granted partial or full control over the ex post reincorporation decision, then as Proposition 9 below establishes, there may not be any convergence at all.

Proposition 9 ***Diversity of governance structure choices.***
When shareholders have partial or full control over the reincorporation decisions of their firms ex-post, then there will be a diversity of governance structure choices across countries in the union.

The diversity of governance structure choices in practice and the relationship between firms' technology and governance structure have been documented by Klein (2002) in the context of audit committees and by Gillan, Hartzell and Starks (2003) in the context of board characteristics, bylaws and charter provisions.

4.4 Ex-ante welfare comparison of control allocations

In this subsection we will establish that different control allocations over the ex-post reincorporation decisions of firms have different social welfare implications for new enterprise creation ex ante.

It is straightforward to see from Proposition 7 and 9 that shareholders will be better off when they have partial or full control over the ex-post reincorporation decision than under manager's control.

However, for managers the comparison of the control allocation schemes is indeterminate. Ex-post the manager is better off in the manager's choice of reincorporation scheme. However, since the shareholders rationally anticipate the manager's ex post decision when setting up their firm ex ante, having full control over the ex post reincorporation decision may actually make the manager worse off in an ex ante comparison.

Proposition 10 *Given the shareholders' ex ante choice of technology, τ^S and τ^*, neither the manager's full control nor the shareholders' full or partial control regime dominates or is dominated for managers.*

Proof: in Appendix.

Since shareholders are better off under full or partial shareholder control over the ex post reincorporation choice but for the manager the comparison is indeterminate, the comparison of the upsides created by the two regimes is also indeterminate.

Proposition 11 *Given the shareholders' ex ante choice of technology, τ^S and τ^*, neither the manager's full control nor the shareholders' full or partial control regime dominates or is dominated in terms of the overall value created.*

Proof: in Appendix.

However, the downside of the manager's choice regime can be more severe than the downside of the shareholders' choice regime. This is because both parties may be worse off under manager's control of reincorporation than under shareholders' choice of reincorporation. The shareholders are worse off because the manager does not maximize shareholder value. And the manager might be worse off under the manager's control over the ex post reincorporation decision because shareholders take into account the allocation of reincorporation rights in their ex ante technology choice.

Proposition 12 *The technology-governance structure pair selected under the legal regime of manager's control over the ex-post reincorporation decision can be strictly dominated for all parties by the technology-governance structure pair chosen by shareholders under the legal regime of partial or full shareholder control over the ex-post reincorporation decision but not vice versa.*

Proof: in Appendix.

Now we relax the assumption that manager has no wealth and show that if the manager had some wealth, and management buyouts or recapitalizations are allowed, then the regime of partial control by shareholders would strongly dominate both the shareholders' and the manager's control regime from the point of view of social welfare maximization. This is so because the control allocation over the ex post reincorporation decision has a feedback effect on the shareholders' ex ante technology choice. Knowing that they have a say in the ex post reincorporation decision, shareholders will choose technology τ^* ex ante. And because they can be induced not to oppose specific reincorporation choices in exchange of compensation, social welfare will be improved. Proposition 13 states this result.

Proposition 13 ***Social Welfare Maximization.***
When the manager has some wealth and transfers are possible, then social welfare can be improved by granting reincorporation rights to one party and veto rights to the other party.

A possible venue to facilitate transfers from managers to shareholders is the market for corporate control. Therefore, Proposition 13 can be interpreted to suggest that the combination of strong shareholders' rights and an active market for corporate control that can potentially improve on social welfare maximization, productive and allocative efficiency.

4.5 The governance structure choice of countries

In this section we will investigate the governance structure choice of countries. Until now we have assumed that given their set of technologies countries will adopt governance structures that maximize shareholder value. We will justify this assumption here.

First we pursue ex post analysis of the impact of a country's governance structure choice on already existing companies. Then we will investigate how a country's governance structure choice affects the formation of new ventures.

4.5.1 Impact on established companies

Consider the impact of country i's choice of governance structure on its existing companies. Under the manager's control of reincorporation, a country's choice of governance structure does not matter. If country i's choice of governance structure, G_i^C exceeds $\min\{G_i^C, G_j^C, G_k^C, ...\}$, then it follows from Corollary 2 that the manager will always reincorporate his firm in country j with the least restrictive governance structure ex post, $G_j^C = \min\{G_i^C, G_j^C, G_k^C, ...\}$.

A country's governance structure choice is also irrelevant when shareholders have full control over the ex post reincorporation decision of their company. In this case, shareholders of an existing company will reincorporate their company in the country whose governance structure maximizes shareholder value given their firm's technology, i.e. in country l if $G_l^C = G_i^*$.

Hence, under these two regimes, if a country chooses its governance structure to accomplish an objective, say social welfare maximization, it is doomed to fail. To see this, suppose that country i chooses governance structure, $G_i^C = \overline{G}_i$ that

maximizes social welfare given its set of technologies. Then under shareholder control of ex post reincorporation, all companies will reincorporate in country k where $G_k^C > \overline{G}_i$. Under the manager's control of reincorporation, all companies will reincorporate in country j where $G_j^C = \min\{G_i^C, G_j^C, G_k^C, ...\}$. Proposition 14 summarizes this result.

Proposition 14 ***Impossibility of social welfare maximization.***
Suppose that one party (the manager or the shareholders) has sole control over the ex post reincorporation decision of their company. Then it is impossible for a country to achieve social welfare maximization by adopting a social welfare maximizing governance structure for its existing companies.

Suppose now that the shareholders have partial control over the ex post reincorporation decision of their firm. Recall that the manager has no wealth. Then the governance structure choice of the country will sometimes matter. Let G^C denote a country's choice of governance structure. When G^C is less or equal to G^*, then there will be no reincorporation. The manager would like to reincorporate the firm in country j where $G_j^C = \min\{G_i^C, G_j^C, G_k^C, ...\}$ but shareholders will veto any such attempt. The shareholders would like to reincorporate their firm in country l such that $G_l^C = G_i^*$ but the manager will veto any such attempt. When $G^C > G^*$, then the company will be reincorporated in country l with governance structure $G_l^C = G_i^*$.

Now we characterize the governance structure choices of countries that are stable for existing companies. We call a countries' governance structure *ex post stable* if it does not induce reincorporation of existing companies. Proposition 15 states this result.

Proposition 15 ***The ex post stability of governance structures***
(1) When the manager has full control over the ex post reincorporation of his company, then there is a unique ex post stable governance structure for country i, $G_i^C = \min\{G_i^C, G_j^C, G_k^C, ...\}$.

(2) When shareholders have full control over the ex post reincorporation decision of their company, then there is a unique ex post stable governance structure choice for country i, $G_i^C = G_i^*$.

(3) When the manager and shareholders have joint control over the ex post reincorporation decision of their company, then any governance structure choice, G^C less or equal to G^* is ex post stable.

Notice from Proposition 15 that when the manager and shareholders have joint control over the ex post reincorporation decision of their company, then social welfare maximizing governance structure choice, $\overline{G}_i$ is ex post stable for country i.

Corollary 7 *When the manager and shareholders have joint control over the ex post reincorporation decision of their companies, then a country can achieve social welfare maximization of its existing companies ex post.*

If the manager and shareholders have joint control over the reincorporation of their company, and transfers between the manager and shareholders are allowed but the manager has no wealth, then a country's ex post stable governance structure choices will reduce to the set $[\overline{G}; G^*]$.

If on the other hand, the manager has some limited wealth then only an interior subset of $[\overline{G}; G^*]$ will be stable because the company will be reincorporated in a country with governance structure G^C such that $\overline{G}_i < G^C < G_i^*$ and improve social welfare. Needless to say, if the manager has sufficient wealth, then he can reincorporate the company in country p such that $G_p^C = \overline{G}_i$ and attain the first best. However, the first best cannot be attained if the manager has sole control of ex post reincorporation, regardless of his wealth.

4.5.2 Impact on new enterprise creation

Now we take one step backward and investigate how new enterprise creation is affected by a country's governance structure choice ex ante. Here we focus on the shareholders' choice where to incorporate their firm.

When the manager is in full control over the ex post reincorporation decision of his firm, then the country's governance structure choice will not matter for shareholders ex ante. Shareholders will choose technology τ^S that maximizes shareholder value under $G^M = \min\{G_i^C, G_j^C, G_k^C, ...\}$, the manager's ex post governance structure choice, and will initially incorporate their firm in country h, where $G_h^C = \arg\max_G V(G, \tau^S)$.

Similarly, when shareholders have partial or full control over the reincorporation decision of their firm, their country's governance structure choice will be irrelevant, since shareholders will incorporate their firm in the country whose governance structure maximizes shareholder value over all technologies in T^i. If country i's governance structure choice is $G_i^C = G_i^*$, then founding shareholders of firm i will incorporate their company in the home country.

Now we characterize the governance structure choices of countries that are ex ante stable for new enterprise creation. We call a countries' governance structure *ex ante stable* if new enterprises will choose to incorporate in their home country. Proposition 16 states this result.

Proposition 16 ***The ex ante stability of governance structures***
(1) When the manager has full control over reincorporation, then each country has a unique ex ante stable governance structure, $G^C = \arg\max_G V(G, \tau^S)$.

(2) When shareholders have partial or full control over reincorporation, then there is a unique ex ante stable governance structure choice for each country, that is, $G^C = G^*$.

To illustrate the decisionmaking of shareholders, suppose that a country k adopts $\overline{G}^k$ as its governance structure choice. Then, all the new firms in the country will incorporate elsewhere. If all other countries will do the same, then different companies will incorporate in different countries and the countries' objective of maximizing social welfare over their set of technologies will fail. Hence, the only stable governance structure choice for new enterprise creation is G^*, the one that maximizes shareholder value. This governance structure choice is stable only under the legal regime of partial or full control by shareholders.

4.5.3 Overall impact

In this section we consider the joint or overall impact of a country's governance structure choice both on its existing companies and new enterprises.

Under manager's control over reincorporation, all firms in country i will be incorporated initially in country h where $G_h^C = \arg\max_G V(G, \tau_i^S)$ but will eventually reincorporate in country k where $G_k^C = \min\{G_i^C, G_j^C, G_k^C, ...\}$. The diversity of technologies across countries implies diversity in shareholders' choice of incorporation but lack of diversity upon reincorporation.

When founding shareholders start a new company and have partial or full control over the ex post reincorporation of their company, they will choose technology τ_i^* and select country l as the place of incorporation for their company where $G_l^C = G_i^*$. Once this choice is made, it follows from Proposition 15 that there will be no ex post reincorporation.

Now we characterize the governance structure choices of countries that are overall stable. We call a country's governance structure choice *overall stable* if it is both ex ante and ex post stable. Proposition 17 states this result.

Proposition 17 ***The overall stability of governance structures***
(1) When the manager has full control over the ex post reincorporation decision, then there does not exist any governance structure choice that is overall stable.

(2) When shareholders have partial or full control over the ex post reincorporation decision, then the unique overall stable governance structure choice is $G^C = G^*$.

It follows from Proposition 17 that our initial assumption that countries choose their governance structure to maximize shareholder value is justified.

Recall from Corollary 7 that when the manager and shareholders have joint control over the ex post reincorporation decision, then a country can achieve social welfare maximization of its existing companies ex post. However, social welfare maximization fails beyond the scope of existing companies.

Corollary 8 ***Impossibility of social welfare maximization***
It is impossible for a country to achieve social welfare maximization of its existing and new enterprises by adopting any governance structure, G^C.

As Corollary 8 states social welfare maximization of all enterprises, startups and mature companies is not attainable for any country. If attempted, startups will incorporate elsewhere with $G^C = G^*$ and will not return regardless of the allocation of control over reincorporation.

If we relax our assumption that the manager has no wealth, then social welfare maximization may be achievable but only in the long run. If the manager faces no wealth constraint and monetary transfers are allowed, then as shown in Section 4.5.1., the social welfare maximizing governance structure $\overline{G}$ can be implemented for existing companies ex post. If a country has adopted $G^C = \overline{G}$, then none of its startups will choose to incorporate in their home country but under joint control over reincorporation these companies will eventually move back. When the set of technologies differ across countries, then there may exist country j and k such that $G_k^* = \overline{G}_j$, and $G_i^* = \overline{G}_k$, so that the set of companies incorporated in country k is non empty even though companies that were started in country k are no longer reincorporated there. While long-term social welfare maximization is attainable only if managers face no wealth constraints, social welfare can be improved relative to G^* even if managers have only limited wealth.

Note that the overall stability of governance structures (Proposition 17) is sensitive to changes in the managerial wealth constraint but only when the manager and shareholders have joint control over the ex post reincorporation decision of their firm.

Corollary 9 *If the manager has some wealth and the manager and shareholders have joint control over the ex post reincorporation decision of their firm, there does not exist any governance structure choice that is overall stable.*

Thus each reincorporation control allocation scheme implies a distinct pattern of incorporation and reincorporation over firms' life-cycles.

Corollary 10 *Suppose that managers have some wealth and managers and shareholders have joint control over the ex post reincorporation decision of their companies. Then startup companies and mature companies will incorporate in different countries and they will do so even if ex post reincorporation is fully anticipated.*

A further implication of this result is that a substantial payment transfer from management to shareholders, such as a significant increase in managerial ownership or a dual class recapitalization increases the likelihood of reincorporation in a more manager-friendly state.

5 Conclusion

The central principle that has emerged is that freedom of establishment and competition between states in corporate legislation is in principle beneficial. It allows companies to match their governance arrangements to their corporate activities. It promotes economic activity that could not be sustained in the absence of legislative diversity.

However, the very agency problem that the governance systems are designed to mitigate is a source of potential legislative failure. Firms may select their governance structure not to maximize corporate value but to benefit management at the expense of shareholders. Legislatures may in turn respond by seeking to appease management at the expense of shareholders and competitive deregulation ensues. Ex ante choice of technology will in turn reflect the weak nature of governance structures that will prevail.

To avoid this, reincorporation decisions should be taken by shareholders or at least with shareholders possessing powers of veto over reincorporation proposals that they deem to be undesirable. Principles of delegation to management can be retained and Pareto improvements ensured provided that wealth-diminishing moves can be averted. In that case, multiple governance arrangements and technologies will prevail.

But the paper has brought out the potential conflicts that freedom of mobility creates between different stakeholders of the firm. The paper has focused on the conflict between managers and shareholders and demonstrated that because shareholders select technologies ahead of employing managers, they take account

of the impact of governance arrangements on manager's choice of effort. In the presence of other stakeholders, there may be other conflicts.

First, there may be lack of unanimity amongst shareholders as well as between shareholders and managers. Minorities may need to be protected against majorities particularly in the presence of large share-block holders. This raises the question of the required level of shareholder approval - simple majority, super-majority or unanimity.

Second, companies may reincorporate to weaken the claims of creditors. As in the US, harmonized bankruptcy law may co-exist with state corporate law to prevent this from occurring. Possible conflicts between different classes of investors may therefore justify federal corporate bankruptcy even in the presence of state corporate law.

Third, similar issues arise in relation to other stakeholders, such as employees, as well as different classes of investors. Harmonization of social obligations, regarding, for example, employment and redundancy terms, may be required to prevent competitive dilution of such obligations at the expense of other stakeholders.

Harmonization at the federal level is required where there are externalities that would otherwise promote competitive deregulation. However, it comes at a price in terms of diversity in governance arrangements and the matching of governance with corporate activities. This is particularly significant where a variety of governance arrangements are required to support commercially viable activities or where there is uncertainty about what constitutes the optimal form of governance and experimentation is required to identify it. Harmonization should therefore be targeted specifically at the source of the externality allowing legislative choice and competition to be retained elsewhere.

6 Appendix

Proof of Corollary 1:

Since we know from (9) that V is single-peaked, and $G_i^* = \arg\max V_i(e(G), G)$, the shareholders cannot benefit from reincorporating firm i in country j, i.e., $V_i(e(G_i^*), G_i^*) > V_i(e(G_j^*), G_j^*)$ always holds. Hence, whenever the manager decides to reincorporate firm i in country j, shareholder value will be destroyed. **Qed**

Proof of Proposition 3:

First we derive the social welfare maximizing governance structure choice, $\overline{G}$. When $\pi \neq 1/2(b - \frac{1}{b(1-\lambda)^2})$, the canonical form of the welfare function is as follows.

$$W = -\frac{b(1-\lambda)^2(2\pi - b) + 1}{2}\left(G - \frac{b(1-\lambda)[(1-\lambda)\pi - b]}{b(1-\lambda)^2(2\pi - b) + 1}\right)^2$$

$$+ \frac{b^2(1-\lambda)^2[(1-\lambda)\pi - b]^2}{2b(1-\lambda)^2(2\pi - b) + 1} + b\lambda\pi + \frac{b^2}{2} \tag{28}$$

The expression in (28) shows that W has an interior maximum if $b(1-\lambda)^2[2\pi - b] + 1 > 0$ and a corner solution if $b(1-\lambda)^2(2\pi - b) + 1 < 0$.

Next we show that the social welfare maximizing governance structure grants the manager more discretion than the shareholder value maximizing choice.

Case 1: When $\overline{G} = 0$.

This case obtains when $0 < (1-\lambda)\pi < b$ and $0 < \pi < 1/2(b - \frac{1}{b(1-\lambda)^2}$ are jointly satisfied or when $(1-\lambda)\pi < b$ and $\pi > 1/2(b - \frac{1}{b(1-\lambda)^2})$ are jointly satisfied.

Since for $\pi > 0$ $b > 0$ and $0 < \lambda < 1$, G^* is strictly positive, there is excessive monitoring by shareholders under the shareholder choice regime in this case.

Case 2: When $\overline{G} > 0$.

This case obtains when $(1-\lambda)\pi > b$ and $\pi > 1/2(b - \frac{1}{b(1-\lambda)^2})$ are jointly satisfied. Here we will show that in this case G^* will always exceed $\overline{G}$. Formally, we will show that

$$\frac{\pi b(1-\lambda)^2}{1 + 2\pi b(1-\lambda)^2} \geq \frac{b(1-\lambda)[(1-\lambda)\pi - b]}{b(1-\lambda)^2[2\pi - b] + 1} \tag{29}$$

Let us assume for the moment that (29) holds. Then,

$$\frac{\pi(1-\lambda)}{1 + 2\pi b(1-\lambda)^2} \geq \frac{(1-\lambda)\pi - b}{b(1-\lambda)^2[2\pi - b] + 1} \tag{30}$$

or equivalently,

$$\frac{\pi(1-\lambda)}{1 + 2\pi b(1-\lambda)^2} \geq \frac{(1-\lambda)\pi - b}{1 + 2\pi b(1-\lambda)^2 - b^2(1-\lambda)^2} \tag{31}$$

Let us introduce the notation $A = \pi(1-\lambda)$ and $B = 1 + 2\pi b(1-\lambda)^2$. Then the above inequality becomes

$$\frac{A}{B} \geq \frac{A-b}{B-b^2(1-\lambda)^2} \tag{32}$$

Since $B - b^2(1-\lambda)^2 > 0$ is always satisfied for $\overline{G} \neq 0$, we can rewrite the above inequality as

$$AB - Ab^2(1-\lambda)^2 > AB - bB \tag{33}$$

For $b > 0$ and $0 < \lambda < 1$, A is always positive and therefore the above inequality can be rewritten as

$$\frac{B}{A} \geq b(1-\lambda)^2 \tag{34}$$

Substituting back for A and B, we get

$$\frac{1+2\pi b(1-\lambda)^2}{\pi(1-\lambda)} \geq b(1-\lambda)^2 \tag{35}$$

$$1+2\pi b(1-\lambda)^2 \geq \pi b(1-\lambda)^3 \tag{36}$$

$$1+2\pi b(1-\lambda)^2 \geq \pi b(1-\lambda)^3 \tag{37}$$

$$1+\pi b(1-\lambda)^2(1+\lambda) \geq 0 \tag{38}$$

which is always true. Thus,

$$\frac{\pi b(1-\lambda)^2}{1+2\pi b(1-\lambda)^2} \geq \frac{b(1-\lambda)[(1-\lambda)\pi - b]}{b(1-\lambda)^2[2\pi - b]+1}. \tag{39}$$

Hence, the governance structure under the shareholders' choice regime will encourage socially excessive shareholder activism. **Qed**

Proof of Proposition 4: $\overline{G} = 0$ when either (i) $b \geq (1-\pi)\pi$ or (ii) $b < (1-\pi)\pi$ and $1/2\left(b - \frac{1}{b(1-\lambda)^2}\right) \geq \pi$ hold. **Qed**

Proof of Proposition 5:

Granting the manager full control over the ex post reincorporation decision will increase social welfare if conditions (I1) and (I2) hold

$$\text{(I1)} \quad \frac{2\pi_i b_i(1-\lambda_i)^2}{1+2\pi_i b_i(1-\lambda_i)^2} - \frac{b_i(1-\lambda_i)[(1-\lambda_i)\pi_i - b_i]}{b_i(1-\lambda_i)^2[2\pi_i - b_i]+1} < \frac{\pi_j b_j(1-\lambda_j)^2}{1+2\pi_j b_j(1-\lambda_j)^2}$$

$$\text{(I2)} \quad \frac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} < \frac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}.$$

Granting the manager full control over the ex post reincorporation decision will destroy social welfare, if condition (I3) holds

$$\text{(I3)} \quad \frac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} < \frac{2\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2} - \frac{b_i(1-\lambda_i)[(1-\lambda_i)\pi_i - b_i]}{b_i(1-\lambda_i)^2[2\pi_i - b_i]+1}.$$

Granting the manager full control over the ex post reincorporation decision will imply no change in social welfare, if either (I4) or I5 holds

$$(I4) \frac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} = \frac{2\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2} - \frac{b_i(1-\lambda_i)[(1-\lambda_i)\pi_i - b_i]}{b_i(1-\lambda_i)^2[2\pi_i - b_i]+1},$$

$$\text{(I5)} \quad \frac{\pi_j b_j (1-\lambda_j)^2}{1+2\pi_j b_j (1-\lambda_j)^2} \geq \frac{\pi_i b_i (1-\lambda_i)^2}{1+2\pi_i b_i (1-\lambda_i)^2}.\textbf{Qed}$$

Proof of Proposition 10:

Under the management's choice of reincorporation regime, management will reincorporate under G^M where

$$G^M = \arg\max_G M(\tau^S, G) \tag{40}$$

Under the management's choice of reincorporation regime, shareholders anticipate the manager's choice ex post and maximize accordingly ex ante, that is, they choose τ^S such that

$$\tau^S = \arg\max V(\tau, G^M). \tag{41}$$

Depending on τ^* and τ^S, $M(\tau^S, G^M)$ may be higher or lower than $M(\tau^*, G^*)$. **Qed**

Proof of Proposition 11:

Since V=S+M, Proposition 12 follows from the proofs of Proposition 11. **Qed**

Proof of Proposition 12:

From Proposition 11, there exists τ^1 and τ^2 such that when only these two technology choices are available then

$$V(G^*, \tau^1) = \max_{G,\tau} V(G, \tau) \tag{42}$$

and

$$\tau^2 = \arg\max_{\tau} V(G^M, \tau). \tag{43}$$

such that $M(G^*, \tau^1) > M(G^M, \tau^2)$. **Qed**

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