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Corporate Architecture and Limited Liability

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Abstract

This paper studies the effect of limited liability on corporate architecture. Corporate architecture refers to the use of governance instruments within the firm to control the behavior of employees. Four general instruments are defined that form the basis of the firm as a governance arrangement. These four are decision control rights, reward schemes, information systems and conflict resolution rules. Limited liability influences the way in which an incorporated group of firms employs each of these instruments. An efficient use of the governance instruments in such a group implies that lower hierarchical levels, incorporated in subsidiaries, will have more discretionary decision rights, higher powered incentives and less information requirements than a group that does not organize its business risks in incorporated subsidiaries. Corporate groups thus differ in their governance arrangement from firms that have not organized in corporate groups. Alternatives that restrict limited liability have the effect of centralizing rights, flattening reward schemes and increasing investment in information systems. If corporate groups have attuned their architecture optimally, then restricting limited liability generates additional coordination costs.

Keywords: Limited liability, Corporate Law, Organizational Form

JEL-codes: K13, K22

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Corporate Architecture and Limited Liability

1. Introduction

Limited liability of corporations has been part of our legal landscape for some centuries.¹ Over these years it has generated controversy, but not enough to get abolished. It is still the central major feature of the most important legal form, i.e. the corporate form, in which businesses choose their activities to organize. In many instances, the feature of limited liability has led firms to organize their activities in separate corporate shells, giving rise to the phenomenon of corporate groups.² Controversy over the pro's and con's of corporate groups, and especially the function of limited liability in these groups, has sparked a large literature. For instance, literature that proposes to introduce a form of shareholder liability for corporate torts (Hansmann and Kraakman, 1991, Mendelson, 2002, Leebron, 1991), liability for shareholder-managers or closely held corporations (Halpern et al., 1980, Mendelson, 2002 – but then suggesting control as deciding variable; Leebron, 1991), managerial liability (Kraakman, 1984, Thompson, 1994, Glynn, 2004), but also to abolish veil piercing (Easterbrook and Fischel, 1991:41-59, Bainbridge, 2001, 2002). An important part of this discussion rests on the social cost consequences of limited liability. Limited liability leads to the externalization of risk. Several proposals to alter or curb limited liability are expressly geared to mitigating this externalization problem. However, not only does limited liability lead to the externalization of risks, it also has consequences for the way in which firms organize their internal structure, or corporate architecture.³ With this I mean the way in which firms organize themselves into a coordinating, hierarchical

¹ Limited liability has some ancient roots in Roman law and became a common attribute in Medieval Italy for outside investors in maritime undertakings. It was this form that was adopted from the 17th century throughout the Continent. Limited liability for companies was first realized via charters, but Napoleonic France provided limited liability at the beginning of the 19th century to 'societes anonymes'. See Carney (1990). Blumberg (1986) argues that limited liability became the default rule around the beginning of the 19th century in some states in the U.S., and then spread (with some hiccups) to other states.

² Blumberg (1986) argues that it is the emergence of corporate groups that leads to additional problems that are not fully appreciated. He proposes to abolish limited liability for wholly owned subsidiaries.

³ The term corporate architecture is loosely based on Jensen and Meckling (1992), who use the term organizational architecture. I expressly use the term corporate architecture as to refer to the influence of corporate liability on (corporate) architecture.

ordered association of people. It is this aspect, i.e. corporate architecture and the influence of limited liability there upon, that is the central question in this paper. Next to limited liability, the paper studies the effect of other schemes of restricting limited liability on corporate architecture.

Corporate architecture refers to the use of four governance instruments within the firm to control the behavior of employees, i) decision rights, ii) reward schemes, iii) information systems, iv) and conflict resolution rules. This paper argues that liability rules affect corporate architecture in a specific way. These effects on corporate architecture have not been fully discussed in the literature on limited liability.⁴ The most important effects are that limited liability makes it advantageous to allocate decision rights lower in the organization, use higher powered reward schemes and economize on information systems. Alternatives that restrict limited liability have the effect of centralizing rights, flattening reward schemes and increasing investment in information systems. If corporate groups have attuned their architecture optimally, then restricting limited liability generates additional coordination costs.

The organization of this paper is as follows. Section 2 gives a short introduction on the theory of firm and the instruments of corporate architecture. Section 3 is devoted to the effects of limited liability on corporate architecture. I discuss the effects of limited liability on corporate architecture by comparing the architecture in an incorporated group and an unincorporated group. Section 4 is devoted to proposals to change limited liability and the consequences these proposals have for the architecture of the firm. I explicitly discuss the effects of changing the limited liability regime by making the parent corporation liable and by making corporate officers personally liable as is advocated by some scholars as a remedy to the social cost problem. Section 5 concludes the article.

2. Corporate architecture

2.1 The firm and its organizational instruments

It was Coase (1937) who forcefully argued that there was no room for the problem of economic organization in the standard model of neoclassical economics. He proposed transaction costs as the missing ingredient in a theory of markets and firms. Firms are thus an organizational innovation in order to lower transaction

⁴ Although, of course, attention has been paid by researchers to effects on, e.g. managerial over-deterrence in case of managerial liability (see, e.g., Thompson, 1994, Glynn, 2004), financial structure (Leebron, 1991, Hansmann and Kraakman, 1991) and organizational choice (Brooks, 2002).

costs. Transaction costs theory, developed by Williamson (1975, 1985), posits that governance structures, firms being one of them, economize on the transaction costs that arise due to the frequency of the transactions, the uncertainty surrounding them and asset specificity.⁵ In agency theory, developed by Jensen and Meckling (1976) firms are seen as a (legal) fiction serving as a nexus for contracting relationships among individuals. Agency costs arise due to goal divergence and information asymmetry between principal and agent. Legally defined organizational forms save transaction costs due to a saving of contract writing costs beforehand and a minimization of the screening effort by suppliers of inputs.⁶ Property rights theory, notably furthered by Demsetz (1967), is used by Grossman and Hart (1986), Hart and Moore (1990) and Hart (1995) to explain ownership, the allocation of rights and the incentives associated with ownership. Rajan and Zingales (1998, 2001) take the theory into a different direction by focusing on the access to a critical resource from which the power stems that an entrepreneur directs others.⁷

These theories on the firm explain or predict why firms, or certain elements, not only look the way they look, but also why that is efficient. Nevertheless, not one of them can be considered to be a full theory of the firm (Hart, 1989, 1995; Zingales, 2000). All theories, though, specify organizational instruments which are to be seen as an essential part of a firm's structure. In transaction costs theory governance modes are normally differentially analyzed. Williamson (1985) discusses the dimensions in which firms differ with markets, i.e. on the authority relation (fiat versus court, or third party arbitration), incentive scheme (low versus high powered) and measurement system (high versus low auditing intensity). Agency costs theory emphasizes the role of the reward scheme, and monitoring and bonding instruments in agency relations to minimize agency costs. Property rights theory emphasizes the role of residual control rights together with residual cash flow rights as the instruments that are to be allocated. I

⁵ Asset specificity relates to the situation in which one of the participants to a contract needs to invest ex ante in order to make the product. The fact that he has to invest before any profit is to be made makes him vulnerable to opportunistic expropriation of his part of the cash flow. If no credible guarantees can be given to him, then he might not be willing to sign the contract. Transaction costs theory operates under the assumptions of information asymmetry, opportunism and bounded rationality.

⁶ These are the most obvious transaction costs saving reasons (see, more generally, Cooter and Ulen, 2004:211). However, if these standard contracts contain mandatory rules, which is the case when looked at the different incorporation 'contracts', then efficiency losses may occur if such rules do not fit with the preferences of participants. See Cooter and Ulen, (2004:218). Bainbridge (2002:31-33) explains this in a corporate context and argues that many mandatory rules in most instances actually are also the preferred ones; but see e.g., Bratton (1989) and Eisenberg (1999) for criticism on this easy going way with mandatory rules by contractarians.

⁷ A difference with property rights theory, according to Rajan and Zingales (1998), is that their theory can adequately explain an organization as the Mafia where property rights theory cannot.

posit that these theories yield four organizational instruments that are used in any firm. These four are: control rights, reward scheme, information system and conflict resolution rule. I discuss these below.

Property rights, control rights and reward schemes

Property rights theory holds that residual control rights matter. It matters because with the allocation of these rights the holder of them can decide upon the usage of the asset. The decision on use depends in large part on the benefits the holder of the rights may derive from that use. In property rights theory residual decision rights and residual cash flow rights are coupled. He who decides on the use also incurs the costs and the benefits of that decision. In that sense, the coupling of rights with cash flow is also directly a reward scheme.⁸ However, this coupling is in no way mandatory. Control rights and cash flow rights need not be allocated together. In agency relations an agent is allocated specific decision rights in order to do some tasks the principal has delegated him. Jensen and Meckling (1992), using the idea of residual control right as developed by Grossman and Hart (1986), develop the argument that in firms decision rights are allocated to those employees who have the decision relevant knowledge together with a control system to monitor these employees. But whereas the residual control rights, analyzed by Grossman and Hart are alienable, the decision rights that are allocated within a firm are non-alienable, i.e. they cannot be sold or partly contracted out by any employee, without prior consent of officers and/or board of directors (and ultimately: the owner of the shares of the firm). Decision rights flow from the top of the hierarchy to lower levels, but cash flow rights do not necessarily follow. In this way decision rights can be stripped from their cash flow rights and allocated to lower levels in the firm.⁹ Fama and Jensen (1983) explore the consequences of the separation of ownership and control for the way into which decision processes in firms are organized. They argue that such a separation results in a functional separation of ratification and monitoring from initiation and implementation. The initiation and the implementation activities associated with decision rights are allocated to lower hierarchical levels in the

⁸ If residual control is equalized with residual cash flow rights then - according to the neoclassical paradigm of rational wealth maximization - the person holding these rights decides upon the usage in such a way that it will deliver him the greatest wealth. If we do not assume such a paradigm then we end up either in constrained optimizing (see Williamson, 1985) or satisfying (see Simon, 1978). Constrained optimizing in that any person only evaluates a very limited number of alternatives in a limited way (first order effects); satisfying in that any alternative is acceptable once it crosses a certain (even ambiguous) threshold.

⁹ Budgets are an interesting corporate tool. See also Jensen and Meckling (1992). Budgets convey decision rights, including limited cash flow (spending) rights, specify the information that is needed to evaluate performance, and may form the basis on which to reward employees or divisions.

firm, while the ratification and the monitoring activities are allocated to subsequent higher levels within the firm. Firms may thus not only separate decision rights and cash flow rights, but also specific activities associated with the decision rights. The theory developed by Rajan and Zingales (1998, 2000) suggests that access rights are allocated to lower levels in the firm. These are also non-alienable rights which give a person the right of access to a resource, be it tangible or not, in order to combine his talents with that asset in order to produce for the firm.¹⁰ According to Rajan and Zingales (1998:415), internal organization is the regulation of access to critical resources.

Whether it is access that is regulated, or control rights that are allocated, the person on which these decision rights are bestowed, will be rewarded according to a predefined contractual scheme. This may incorporate fixed, variable or both of these reward elements based on some specific performance criterion. In transaction cost theory, Williamson (1985) considers low and high powered incentives, most easily associated with firms and markets respectively. However, also within firms reward schemes may be used that differ in their incentive intensity. The choice of the reward scheme depends, apart from the usual motivating arguments, on information asymmetry and opportunistic expropriation possibilities (see Cheung, 1983; Williamson, 1985). The reward scheme can be higher powered if the activities are easily observable and verifiable; this is less the case if the activities have multiple important dimensions and are less easily observable. Higher powered incentives then easily lead to suboptimal behavior towards the imperfect measure (Milgrom and Roberts, 1992:228).

Information systems

In an agency relation the principal needs to monitor the agent in order to ascertain performance, to deter strategic behavior and to reward the agent. Monitoring necessitates an information (sharing) system. The information system used in the firm has to deliver the details on the decision activities in order to monitor and ratify these, and to reward employees. A separation of decision activities as envisaged by Fama and Jensen (1983) is impossible if the information concerning these activities cannot become available. Firms separating these activities are thus in need of a system capable of producing the required data. Regarding the multinational enterprises Williamson argues that the multidivisional organization form needs to be coupled with a monitoring and control apparatus (Williamson, 1981:1556).

¹⁰ In the theory of Rajan and Zingales (1998:388) it is the access to a critical resource that gives the person having the access right the possibility of developing specific (human) capital which she controls. The fact that she can withdraw this human capital gives her power to influence the distribution of the surplus.

Conflict resolution rules

Transaction costs theory stresses the idea that due to circumstances, unforeseen at the negotiation stage, the mutual beneficial nature of a relation may change adversely for one of the parties. Such a change may inadvertently become an incentive for ex post opportunistic behavior that may drain any ex post value to either of the parties. Although bounded rationality prevents parties to write complete contracts covering all contingencies, parties can accommodate such changes by providing a conflict resolution rule. In market settings different forms of arbitration are identifiable, i.e. courts or various forms of private arbitration. The choice of a specific type of conflict resolution rule depends largely on asset specificity (Williamson, 1985:72-77). The rule will become more complex the more participants rely on each other to honor the initial agreement (Klein, Crawford and Alchian, 1978; Williamson, 1979, 1985; Hart and Moore, 1988). In firms a different type of conflict resolution rule exists: it is based on control rights. With the allocation of residual control rights the conflict resolution rule is simply that the holder of these rights decides on conflicting uses. Such a rule will become more complex with higher levels of asset specificity. For instance, employees especially want protection for the amount of invested human capital, while employers want to protect themselves for strategic appropriation of part of the quasi rents the firm generates (Williamson 1985:249). Contracts will thus contain severance pay rules in combination with non-competition clauses. But a conflict resolution rule is not only necessary for termination of contracts within firms, it is also needed as an instrument to solve for other conflicts than those that lead directly to termination. Conflicts within firms may also be settled with, for example, forced transfer, demotion, career stop and fines.¹¹ Note that these instruments are also closely related to the access rights a person has. They all lead to a lowering of the value of the specific capital of a person having access to a critical resource. The way in which the conflict rule is applied within the firm signals to employees what kind of behavior is (un)wanted. It thus enforces and elicits certain behavior. With this it has an ex ante incentive effect on the amount employees invest in specific human capital. Such investment have also the effect of bonding employees to the firm as their value outside the firm will be lower than inside it.

¹¹ Given the general rules provided in criminal law, it is normally not necessary for parties to organize punishments for theft themselves. But see Richman (2004) who finds that such punishments may be privately organized.

3. Limited liability

Standard law and economic reasoning implies that limited liability generates external effects.¹² Limited liability ultimately means that a party need not accept liability for certain actions that harm a third party. The party generating these costs may legally let it fall where it falls, without any possibility for those affected to claim damages. The originating party may simply walk away by initiating bankruptcy proceedings. In bankruptcy the tort claim ranks as an ordinary claim and shares in the proceeds with the other (ordinary) creditors. Limited liability thus has the effect that part of the costs of a decision will not be borne by those that actually make that decision. These costs then drop out of the deliberation whether a specific activity is economically interesting. The result is an overinvestment in these activities. If such behavior cannot be checked (and/or priced) by those that are affected by it, then limited liability generates social costs.

Although limited liability thus has a severe drawback, i.e. social costs, it nevertheless is a pervasive legal aspect of our economies. First and foremost, people are in the end essentially limited liable. Corporate law extends this form of limited liability to shareholders of corporations: they (like any other provider of capital) are only obliged to provide the capital they have promised, but not to cover additional costs that surpass their initial contribution (Bainbridge, 2002:126). Hansmann and Kraakman (2000) and Hansmann et al. (2006) discuss limited liability from the perspective of organizational law. Hansmann et al. (2006) define the concept of entity shielding as the protection of the assets of the corporation from the owners' personal creditors. Hansmann and Kraakman (2000) coin the term asset partitioning for legal rules that generate this effect. These asset partitioning rules together yield two forms of shielding: entity shielding and owner shielding. The first form shields firms from creditors of their owners, the second form shields owners from firm creditors. Together both forms of shielding save transaction costs in that creditors of the corporation need not bother to monitor personal creditors, and personal creditors of owners need not bother to monitor the financial condition of the corporation. It also generates transaction costs in that a debtor may opportunistically exploit shielding by moving personal assets into subsidiaries, in order to appropriate personal creditors and vice versa, moving assets of the firm to the owners of the firm. In the discussion below, I use the term limited liability to comprise both forms of shielding, because in the prior literature this distinction has not been made and limited liability thus is the more common term and, next, for ease of exposition, because both forms are necessary in the discussion on corporate architecture.

¹² See for an introduction Bainbridge (2002) and note 4 for further literature.

This legal constellation of limited liability has generated a long and lasting controversy among law and economics scholars whether this rule should be kept, altered, or abolished altogether. All alternatives have pro's and cons and the result up till now has been that nothing has changed in the current regime on limited liability, or better: the way firms may legally incorporate. In this paper I do not enter into that debate, I focus on the effects of limited liability, or a change in the regime, on corporate architecture. It is a part that has not received much attention in the discussion and it is my contention that additional costs are to be discovered that have not yet been exposed to full light.

3.1 Limited liability effects on corporate architecture

With limited liability corporate architecture matters for an additional reason: firms get an additional instrument in corporate architecture. It becomes a matter of strategic policy how the firm is to be structured in a legal way. Incorporation does not only offer dispersed shareholders limited liability, but the regime is also available to a parent corporation that is sole shareholder in its incorporated subsidiaries. Limited liability thus creates the possibility to structure the firm as a corporate group. Groups are ubiquitous in the corporate landscape.¹³ They provide two corporate architectural benefits to parents: first, with the decision of the parent company to incorporate each risky business in a separate corporation, it compartmentalizes the risks of each individual business into a subsidiary corporation. With this, the individual subsidiary corporations are shielded from damage claims that may arise from the activities of any of the other subsidiaries.¹⁴ Second, as a shareholder, the parent company needs not to provide additional capital in the case that one of its subsidiaries is confronted with a damage claim that more than erases all of the equity of the subsidiary.¹⁵ These two benefits are offset by one cost factor. Creditors, knowing that the parent will not guarantee its subsidiaries above the amount it already has contributed to them, may demand additional collateral, specific guarantees or higher prices in order to minimize or compensate for the risk that the subsidiary will fail its obligations.¹⁶ For creditors

¹³ At least that is the presumption of all the research in this area, although actual empirical data on corporate groups is hard to get.

¹⁴ This is the entity shielding part of limited liability. In the situation that the firm would not have been structured as a corporate group, but that all businesses would have been incorporated in a sole corporation, all the assets of the corporation could be used to satisfy the claims of the (tort) creditors of one of the businesses.

¹⁵ With this the parent need not sell part of its equity in the other incorporated subsidiaries, or even sell some specific assets of its subsidiaries in order to satisfy that claim. This is the owner shielding part of limited liability.

¹⁶ This is the central reasoning why voluntary creditors need not be protected additionally for limited liability. Voluntary creditors are those that willfully transact with the company, i.e. they

contracting with the corporation the social cost that limited liability imposes, is thus again transferred to the parent corporation making the strategic decisions.

Limited liability thus carries two distinct benefits for corporate architecture. But that is not all; it also influences the way in which the organizational instruments of corporate architecture are used. Consider the case of a firm that has multiple risky businesses and is organized in a corporate group structure and compare this with a firm that has not done so; this latter firm has chosen to organize itself into several (risky) divisions but not into separate corporations. Given the fact that limited liability compartmentalizes subsidiary risk and protects the parent, it affects the way in which the parent chooses to control her subsidiaries. In a corporate group the risk of damage claims will be confined to a corporate subsidiary. Risks will not spill over as it will in firms that do not have such a structure. Compartmentalization makes it less necessary to control risks on the parent level as it will be in the case of one corporation. It is even the other way around: risky activities will be stimulated, because limited liability insulates the other subsidiaries and the parent (Blumberg, 1986). In a corporate group the result is a higher level of investment in risky activities in subsidiary corporations than in the unincorporated group.¹⁷ This differential effect due to limited liability will also affect the use of the organizational instruments within these two types of structures. Table 1 below specifies these effects for the four instruments discussed above.

[Please insert Table 1 here]

Limited liability affects the allocation of decision rights between parent and subsidiary. If the parent compartmentalizes business risks in corporate subsidiaries, it will not matter to her from a liability perspective whether decision rights stay at the level of the subsidiary board or will be brought to lower levels within the subsidiary corporations. To the parent it will not matter at what level in the subsidiary corporation a tortuous act is committed. Although liability may flow upwards via a vicarious liability rule,¹⁸ it will halt at the level of the board of

have the opportunity to decide whether or not to transact. Involuntary creditors do not have such a choice; they become creditors due to the tortuous acts of the subsidiary corporation. In bargain-settings, voluntary creditors need to take care of their specific interests. See e.g. Bainbridge (2002:134) and Thompson (1994).

¹⁷ From the perspective of social costs, a comparison of the two group forms does not encompass all social costs. Even the shareholders of the unincorporated group obtain the benefit of limited liability. Nevertheless, a difference remains in that the risk-management of the two forms differs due to the compartmentalization of business risk.

¹⁸ With a vicarious liability rule, a principal is held liable for an agent's misconduct. In case of an employee of a corporation, it is ultimately the board of directors that – as principals – is

the subsidiary. A wealth maximizing parent will thus strive to push down decision rights within the subsidiary to that level where the specific knowledge is located to make the wealth maximizing business decisions.¹⁹ In corporate groups, compared to an unincorporated group, the decision rights will be more decentralized. Lower hierarchical levels will be allocated initiation and implementation rights, and consequently also lower levels will receive ratification and monitoring rights. This obviously saves information costs and the costs associated with the wrong decision (or no decision at all) on the basis of too little information at higher levels. Given a system of limited liability, corporate groups should have lower information costs and also have a more decentralized allocation of decision rights than unincorporated groups.

This set up of decision rights implies that the reward scheme will also differ between the two settings. Bringing decision rights to lower levels in the organization means that on such lower levels of the corporation employees will have more discretionary decision making powers. In a limited sense, they may decide as they see fit. For instance, discretionary spending levels, or budget rights, and the rights to bind the corporation contractually to third parties will be more extensive in corporate groups. Given such a higher level of decision making freedom, compared to the unincorporated group, corporate groups will (need to) rely more extensively on reward schemes to align the interests of the decision makers with the aims of the parent and ultimately of the shareholders of that parent. Such reward schemes will be higher powered (in the terminology of Williamson, 1985), i.e. include a more extensive use of variable components in the pay package of managers. Such variable components need to stimulate managers to take the risks that are worth taking, at least in the eyes of the parent. One of the major problems associated with reward schemes is suboptimal behavior due to measurability problems and ratchet effects (Milgrom and Roberts, 1992). If the suboptimal behavior associated with the higher powered schemes ultimately leads to a higher chance of committing tortuous acts in incorporated groups, then the costs associated with suboptimal reward schemes differ between the two forms. Corporate groups can shoulder such tort risks much more easily than unincorporated groups. This strengthens the contention that reward schemes in incorporated groups will be higher powered compared to the unincorporated groups.

vicariously liable for the conduct of the employees. In their duty as directors the liability attaches to the corporation. At least this is the common interpretation that follows from tort and agency principles. See generally Kornhauser (1982) and Sykes (1984), more specifically Thompson (1994) and Glynn (2004).

¹⁹ Jensen and Meckling (2002) argue that specific knowledge makes it necessary to decentralize decision rights. Limited liability lowers the costs of such decentralization.

The third instrument is the information system. Given the different setup of the allocation of decision rights and reward schemes, it is obvious that it will also affect the information system. At first sight it will be the corporate group that will have the more elaborate information system, given the lower level allocation of decision rights. However, this need not be the case. The important aspect here is that with a lower level allocation of decision rights, not only initiation and implementation rights but also monitoring and ratification rights will be vested in lower levels of the corporate hierarchy. It follows that the relevant decision making information need not be furthered up in the hierarchy than that level that has the monitoring and ratification rights. From that level only summary information will be passed on to the higher levels, where these higher levels will not again substantially review these decisions. Otherwise the cost saving associated with lower level decision making will be lost to the group. In the unincorporated group decision rights will not be vested as low in the organization as in the incorporated group. This means that more decisions will be taken by higher hierarchical levels. In order to monitor and ratify decisions these levels will require information that in incorporated groups would not flow upwards. Such an information flow is needed given the fact that the unincorporated group needs decision making on a higher level in order to identify and manage the risks associated with business activities. This argument works also the other way around. With decision rights lower in the hierarchy, commands from higher level officials may or can be less detailed compared to the unincorporated group. The details will be added to the command by management lower in the hierarchy. In unincorporated groups, leaving these details to lower hierarchical levels would mean that more discretion would become invested in these levels, effectively undermining the control structure of the unincorporated group. It follows that in unincorporated groups not only more information must flow upwards in the hierarchy, but also that more information will flow to lower hierarchical levels than will occur in incorporated groups.

The fourth instrument, conflict resolution rule, will not differ that much between both settings. Conflict resolution, i.e. the use of command and the punishment of aberrant behavior, will be more or less the same, although, obviously, in the incorporated group, more leeway exists for aberrant behavior. Given the additional decision making leeway in incorporated groups on lower hierarchical levels, though, it is also probably less often that conflicts ensue. Less detailed information will be reviewed by top level management leading to a lower incidence of disputes. However, the way in which this mechanism operates will not differ that much between the two settings.

In discussing the effects of limited liability on corporate architecture above, no attention has been given to any measures an unincorporated group may take in order to reduce the transaction costs differential with the incorporated

group. Two measures may partially compensate the cost differential: insurance and contracting out. The unincorporated group may insure itself against claims arising out of tortuous acts of divisional employees. Such an insurance policy would have the same effect as the owner shielding effect of limited liability. Still a cost differential will persist due to the fact that an incorporated group need not pay the insurance premiums and the insurer may attach conditions to its policy that do not attach to limited liability in the incorporated group. A second way to reduce the cost difference is to mimic limited liability by contracting out. The unincorporated group may contract out certain activities to other firms. The risks of these activities is then confined to another corporate entity. Although it thus mimics limited liability the group that contracts out misses two architectural instruments.²⁰ Decision rights cannot be retained and information will not be as readily available compared to the situation of keeping the activities within the group. Such a contracting out seems less likely if the activities are part of what the management defines as the core of the group. Contracting out may then be an instrument to reduce corporate exposure to risk for certain activities, but not for all. The consequence will be that unincorporated groups, in managing their portfolio of activities, may decide to sooner contract out certain activities than incorporated groups will do.

4. Restricting limited liability and effects on corporate architecture

In the preceding section, the hypothesis has been developed that limited liability affects corporate architecture of corporations. Incorporated groups differ in their use of organizational instruments from unincorporated groups. The major positive consequence of this difference in corporate architecture is that the incorporated group saves on transaction costs, the major negative consequence is the externalization of risk. It is especially this latter effect that has generated a large literature.²¹ Several scholars propose remedial action in order to reduce or

²⁰ Apart from the argument that for some specific reason the group is best situated to bear these risks.

²¹ See, among others, the literature cited in note 4. The discussion has become more complex due to the mingling of public and close corporations. Public corporations with dispersed (passive) shareholders are, from a governance perspective, of a different kind than close corporations with a single active shareholder who may also function as corporate director. In public corporations, holding individual (personal) shareholders liable effectively reduces much of the benefits of limited liability, i.e. portfolio diversification, while this is not the case in close corporations where the shareholder/director is in a permanent state of conflict between his personal and corporate interest. In this paper, I focus on the situation of the public corporation and large close corporations and not the small close corporation.

eliminate the social costs of limited liability, either via abolishing it or adapting it to circumstances. With respect to the issue of corporate architecture two forms are relevant: the introduction of enterprise liability, having the effect of holding parents liable for debts incurred in subsidiary corporations, and officer liability, making corporate officers liable for torts committed within the corporation. Both these forms have the potential of changing the way in which corporations use the organizational instruments. I consider these in turn below.

4.1 Enterprise liability

With limited liability firms have the option to construct corporate groups in which the organizational instruments will be employed differently when compared to unincorporated groups. The fact that a firm has this option has fuelled the debate on the social cost of limited liability (e.g. see Blumberg, 1986, Bainbridge, 2002:168, Bainbridge, 2001, Glynn, 2004, Lopucki, 1998). One of the proposed solutions to the social costs problem is to hold the corporate group in its entirety, including the parent shareholder, liable for all the debts incurred. The issue has become known in the literature as enterprise liability. Enterprise liability is debated among legal scholars due to the fact that there seems as yet no dogmatic theory that underlies the cases in which corporate structures are pierced.²²

In case a parent will always be held liable for debts of its subsidiaries, then, effectively, no limited liability will exist for a parent. Consequently, corporate groups cannot compartmentalize risk in the way that they can when they are limitedly liable. It yields the situation in which the corporate architecture of a corporate group is similar to the one of unincorporated groups. Corporate architecture of corporate groups will then presumably adjust to resemble the architecture of unincorporated groups.

The doctrine of enterprise liability, however, does not yield such a situation. Corporate groups are not held liable for debts of subsidiaries just because they are in control, or considered to be part of a group. It takes more to establish enterprise liability: it needs to be shown that the 'parent is employing the subsidiary to perpetrate a fraud and that this was the proximate cause of the plaintiff injury' (Bainbridge, 2002:183-184). Control in itself is thus, although necessary, not enough to establish enterprise liability.²³ Parents obviously want to be in control of their subsidiaries, but will not face enterprise liability by that fact

²² This position is taken by Bainbridge (2002, 2001). But it is also the case that scholars argue that enterprise liability should be of a different kind than shareholder liability in the case of public corporations. Nevertheless, despite the fact of this consensus opinion, no definitive answer has been formulated how enterprise liability should be formed that is distinctive from veil piercing. See Blumberg (1986), Bainbridge (2002:190, 2001), Lopucki (1998), Thompson (1994).

²³ This is the same with the veil piercing doctrine. See Bainbridge (2002).

alone. The doctrine of enterprise liability therefore does not in itself give corporate parents an incentive to change the way in which they control their subsidiaries. Under the current doctrine, corporate architecture need not change. Limited liability is still the relevant rule for corporate groups.

4.2 Officer liability

Another way – other than holding a corporate shareholder liable - to try to internalize externalized risks, is to hold officers of the corporation personally vicariously liable for corporate torts. This has been proposed by several authors in order to mitigate the risk externalization effect of limited liability (Kraakman, 1984, Thompson, 1994, Glynn, 2004). However, apart from mitigating the consequences of risk externalization, officer liability for corporate torts also affects corporate architecture.

Officer liability will affect corporate architecture if officers can not fully insure tort risks and have inadequate diversification possibilities with respect to their human capital. Under these assumptions officer liability will lead officers to set care levels higher than shareholders will find optimal.²⁴ In order to reach a higher level of care, via a lower level of tort risk and/or lower expected ex post tort damages, within any corporation decision rights will need to be more centrally held instead of allocated to the lowest possible level, reward schemes will be less powered in order to reduce the rewards of risk taking. Information systems will generate more detailed data for higher management levels.²⁵ The set up of corporate architecture will thus be dependent on whether or not a regime of vicarious officer liability exists.²⁶ The next step is to analyze whether a difference exists between the set up of corporate architecture in the corporate versus the unincorporated form. Such differences arise because parent officers in incorporated groups are shielded by limited liability for vicarious liability for corporate torts committed under a subsidiary officer.²⁷ Subsidiary officers know

²⁴ Assuming shareholders can and will diversify and thus will accept a higher level of risk given any pay-off. This is especially relevant in case officers are compensated via their pay-schemes and not via insurance.

²⁵ Apart from these architecture effects, top officers may also employ other tort risk minimizing strategies, e.g. selling or discontinuing businesses with a non-negligible tort risk²⁵ and building and maintaining reserves (Carney, 1990).

²⁶ The introduction of the Sarbanes Oxley Act (SOX) In the United States in 2002 provides evidence that legal rules affect corporate architecture. The Act introduces a criminal penalty on directors when they certify financial statements that they know do not '[...] fairly present the financial condition and results of operations of the issuer (section 906 (b) 1-2). This raises personal costs for directors which cannot be covered by insurance. Recent research on the effects of SOX shows that the administrative costs of complying with the rules have risen steeply from the period before SOX (Carney, 2005; Clark, 2005; Ribstein, 2005).

²⁷ Glynn (2004) argues that in his proposal to hold officers vicariously liable, veil piercing or

that they will be held liable for tortuous acts in their subsidiary and that they cannot pass that liability on to parent officers. The upshot is an agency problem between subsidiary officers and parent officers. Presumably, subsidiary officers will either try to minimize tort risk by e.g. manipulating the asset base (i.e. the level of business risk), financing policy, or obtaining insurance and indemnification via the parent.²⁸ Although the parent officer, or shareholders, may want a higher level of (tort) risk taking in subsidiaries, subsidiary officers try to offset this propensity via incorporating the costs of such strategies in their pay/insurance package and/or adapting the level of business risk.²⁹ Solving that agency problem requires more extensive oversight from the parent in order to ascertain that business risks are being taken. This monitoring counters the tendency to decentralize decision rights in incorporated groups. Such a divergence of aims need not occur in unincorporated groups. If division managers do not qualify as officers, then they will be able to escape vicarious liability in the unincorporated group. The top officers of unincorporated groups will be vicariously liable, but a divergence of aims with respect to business risk need not occur, due to the fact that there is no corporate veil to insulate these top officers against the tort liability. Qualifying division managers as officers, and thus vicariously liable, does not change that result. Officers on both hierarchical levels will be vicariously liable. Consequently, the agency problem does not crop up in the way as it does in incorporated groups. The effect is that corporate architecture in corporate groups under a personal vicarious liability regime for officers (including subsidiary officers), will drift towards more centralization in order to control the level of business risk. The allocation of decision rights and monitoring intensity in the incorporated group may thus start to look like the allocation of rights and the monitoring in the unincorporated group. However, in the use of these instruments the two corporate group forms differ. The parent officer in the incorporated group wants to make sure that business risks are really being taken and couples this with a high powered incentive scheme. The top officer in the unincorporated group wants to mitigate risk taking behavior of lower level officers via centralizing decision rights and a low powered incentive scheme.

enterprise liability does not matter, because the criterion he uses is direct supervisory control by officers, irrespective whether they are parental or subsidiary officers.

²⁸ However, subsidiary officers will have less decision rights than parent officers and thus fewer possibilities in managing such risks. This will place more weight on the alternative of insurance/indemnification.

²⁹ Relevant here is the remark made above, that if insurance/indemnification is only partially available, managers are risk averse and inadequately diversified, then subsidiary officers will overinvest in care. The effect on the corporate architecture of the subsidiary will then also be the same, although subsidiary officers, compared to parent officers, will have less opportunity to alter the allocation of such rights, reward schemes and information system requirements.

5. Conclusion

This paper studies the effect of limited liability on corporate architecture. Corporate architecture refers to the use of four governance instruments within the firm to control the behavior of (among others) employees: decision control rights, reward schemes, information systems and conflict resolution rules. Limited liability influences the way in which an incorporated group of firms employs each of these instruments. An efficient use of the governance instruments in such a group implies that lower hierarchical levels, incorporated in subsidiaries, will have more discretionary decision rights, higher powered incentives and less information requirements than a group that does not organize its business risks in incorporated subsidiaries. Corporate groups thus differ in their governance arrangement from firms that have not organized in corporate groups.

Introducing shareholder liability for parents in corporate groups, i.e. enterprise liability, yields the result that compartmentalization of business risks will no longer be relevant. Corporate architecture in corporate groups will then look similar to the architecture in unincorporated groups. However, the doctrine of enterprise liability as currently employed in the United States, does not pierce the corporate veil that easily; control in itself is not enough to justify parent liability for corporate torts. As such the doctrine does not give parents an incentive to change the way in which they control their subsidiaries and thus corporate architecture will not change.

Introducing officer liability for officers will have the effect that within any corporation decision rights will be more centrally held, reward schemes will be less powered and information systems more intrusive. However, in case limited liability still shields the parent officer, then officer liability will not change the relative attractiveness of the incorporated versus the unincorporated group form. In both forms officers may be held liable for corporate torts, but the compartmentalization of business risks in the corporate group will insulate the parent officer from liability in subsidiaries, where this will not be the case in the unincorporated group. Furthermore, an agency problem crops up in incorporated groups. If indemnification is only a partial solution, then officers in subsidiary corporations will act strategically so as to minimize the liability risks they personally have to bear. Such strategic behavior makes a more direct form of oversight, from the parent's perspective, necessary. Centralization of decision rights may be the result, but the incorporated group will still differ from the unincorporated group in its use of the decision rights and in its use of higher powered reward schemes in order to elicit risk taking behavior.

Restricting liability has the consequence that corporate architecture changes in such a way that the incorporated group, in comparison with the unincorporated group, loses the cost savings associated with the differential use of

decision rights, reward schemes and information systems. This economic loss must be traded off by the lower social costs of having fewer tort cases.

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Table 1 Effects of limited liability on the instruments of corporate architecture

	Incorporated group	Unincorporated group
Decision rights	More decentralised initiation/implementation and monitoring/ ratification decision rights	Less decentralised
Reward scheme	Higher powered reward schemes, i.e. more extensive use of variable pay forms	Lower powered
Information system	Less intrusive as detailed information need not be communicated so extensively in the hierarchy	More intrusive
Conflict resolution	No differential effect	No differential effect

Table 1 specifies the differential effect of limited liability upon the architecture of the corporation. It compares the use of four organizational instruments in incorporated and unincorporated groups.