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**Working Paper**

## European financial integration and corporate governance

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# Research Notes

## Working Paper Series

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### European Financial Integration and Corporate Governance

The paper studies the link between the integration of European financial markets and corporate governance in Europe. The focus of the paper is on how integration affects the interplay of ownership structures, capital structures, and monitoring, all of which can be used to govern agency problems at the firm level. Integration is a process which comprises the abolition of capital controls, the harmonization of institutions, and the creation of a common currency area. These elements, in turn, affect the liquidity of markets, the cost of monitoring, and the cost of debt. Based on these considerations, implications for changes in the structure of corporate governance systems are derived.

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# **European Financial Integration and Corporate Governance**

by

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April 2002

Preliminary. Comments welcome. Please clear any quotes with the author.

## **Abstract**

The paper studies the link between the integration of European financial markets and corporate governance in Europe. The focus of the paper is on how integration affects the interplay of ownership structures, capital structures, and monitoring, all of which can be used to govern agency problems at the firm level. Integration is a process which comprises the abolition of capital controls, the harmonization of institutions, and the creation of a common currency area. These elements, in turn, affect the liquidity of markets, the cost of monitoring, and the cost of debt. Based on these considerations, implications for changes in the structure of corporate governance systems are derived. (101 words)

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## **1 Motivation**

The last decades have witnessed fundamental changes in global financial markets. The markets have experienced rapid globalization, wide securitization, and profound technical innovation. The European Union (EU) has been at the forefront of these developments. Capital controls have been abolished fully among the members of the EU and vis-à-vis the rest of the world, a Single Capital Market has been created, and the introduction of the euro has further stimulated the integration of markets. At the same time differences in financial structures across countries are caused by diverging institutional arrangements which the euro will not affect immediately. Among these institutions, efficient corporate governance is viewed as increasingly important for a truly integrated European capital market (see e.g. CAG 1999).

Changes in corporate governance and financial market integration are mutually dependent processes. On the one hand, existing differences in corporate governance structures may impede the functioning of an integrated capital market. Hence, harmonization and greater transparency might be required to improve the liquidity of the integrated market. On the other hand, the process of integration may also exert pressures for endogenous adjustments in national corporate governance structures. However, it is not clear to what extent adjustment will actually lead to convergence. Nor is it clear to what extent the European Union should try to encourage harmonization of corporate governance structures.

In the present paper we try to assess to what extent the integration process impacts upon governance structures. In the following second part, stylized facts of the European integration process are presented. It is argued that financial integration tends to increase the liquidity of financial markets, to lower monitoring costs, and to lower the cost of debt. Part three outlines a theoretical model which allows us to analyze the impact of changes in these parameters on actual governance structures. Part four confronts the results of these model with some stylized facts on the structure of financial systems across Europe and derives hypotheses on possible future changes. Part five concludes.

## **2 Stylized Facts of European Financial Integration**

The process of European financial integration is characterized by at least three developments which partly interact, i.e. by the abolition of capital controls, which was largely complete by the early 1990s, the creation of a Single Market and the concomitant adjustment of institutional structures, and the introduction of the euro in 1999.

Consider the impact of the abolition of capital controls first. *Ceteris paribus*, it should allow investors to optimize their portfolios, hence potentially increasing the degree of diversification of assets and the liquidity of financial markets. From a theoretical point of view, investors should be interested in holding well-diversified portfolios which allow them to hedge idiosyncratic risks. In an international context, the share of domestic securities in investment portfolios should be relatively low, in particular because the return to human capital of investors is typically closely linked to the performance of the domestic economy.<sup>1</sup> Yet, actual investment behavior is typically found to contradict the predictions of standard portfolio models as investors tend to hold a substantially larger share of their assets in the domestic economy. This „home bias“ in investment portfolios has been documented by Tesar and Werner (1992) for the United States or Buch and Lapp (2001) for Germany. As regards explanations of the home bias, asymmetries in information between domestic and foreign investors as caused by differences in institutions are among the most promising candidates (Gehrig 1993).

While the abolition of capital controls has eased international portfolio diversification, it has presumably had relatively little direct impact on differences in institutional structures across countries. Convergence of institutions has rather been promoted by the creation of the Single Market which is likely to have reduced the costs of evaluating international investment portfolios and thus the home bias due to information costs. Monitoring costs in an international context *inter alia* depend on differences in institutional structures between countries. If company law, disclosure requirements, or banking regulations differ between countries, foreign investors will *ceteris paribus* have higher costs of assessing the quality of investment projects than local investors. The harmonization of regulations across countries, which has been one goal of the Single Market program, will tend to diminish these differences over time and to lower information costs.

To the extent that harmonization of regulations lowers information costs, it will encourage investors to hold foreign assets. The liquidity of markets is thus likely to increase. At the same time, however, the diversity of institutions across Europe is still greater than within a single country such as, for instance, the United States. Currently, security markets are still segmented by different settlement techniques, different interest day counts etc. This potentially limits the liquidity of markets.

In addition to the abolition of capital controls and the Single Market program, the introduction of the euro in 1999 has the potential of increasing the transparency of financial markets in Europe and of increasing market liquidity. More specifically, the implications of the euro for financial market integration are likely to arise through three channels:

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<sup>1</sup> See Lewis (1999) for a recent survey.

- First, the elimination of exchange rate risk and, as a corollary, the use of a single benchmark interest rate for the valuation of financial assets is likely to reduce the costs of issuing bonds in foreign markets. This effect mainly has an impact on the fixed income market rather than on the equity market since rates of return on the latter are linked to real assets. The elimination of exchange rate risk also implies that hedging costs for intra-European assets become zero. To the extent that the home bias in international investment portfolios has been a reflection of a currency bias, the demand for foreign assets within Euroland and thus the liquidity of markets are likely to increase.
- Second, the creation of a broader and more liquid market for funds will lower liquidity risk premia. The impact of the euro on market liquidity can be gauged by looking at the size of the European in comparison to national financial markets. While none of the European financial markets in isolation accounted for more than 7-8 percent of global security market capitalization at the end of 1996, the combined share of Euroland is almost 30 percent (Walter 1998).
- Third, risk premia which are due to informational asymmetries are likely to decline. As all balance sheets will be published in one currency, firm-level data will become more easily comparable, and costs of obtaining information will be reduced. Because the main competitive advantage of banks stems from the fact that they have better information on their customers than other intermediaries, this can be expected to reduce the reliance of firms on intermediated (bank) finance and to increase the demand for securitized (bond) finance.<sup>2</sup> This effect, however, should not be overestimated. The comparability of firms' balance sheets across countries is also affected by differences in accounting standards and other institutional factors. Hence, the euro will not make financial data fully comparable to the extent that accounting systems remain non-harmonized.

### **3 Complementarities in Corporate Governance: Monitoring, Ownership Structure, and Capital Structure<sup>3</sup>**

The previous section has argued that European financial integration is likely to influence the liquidity of markets, the costs of monitoring, and the costs of debt. In the following, we present a model which helps us to analyze the consequences of these effects for corporate governance structures.

We consider a principal agent model of the firm featuring managerial pay, monitoring, the ownership structure, and the capital structure as four governance instruments. We then proceed to show how the process of financial integration can influence the interplay of these

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<sup>2</sup> See also Prati and Schinasi (1997), McCauley and White (1997), or Dermine (1995).

<sup>3</sup> The following is based on Heinrich (2000).

governance instruments in reducing the costs of the agency conflict between owners and managers. As discussed in the preceding section, the impact of financial integration will work through changes in monitoring costs and in the cost of debt.

The manager chooses an effort  $e$  at a cost  $C(e)$ . The manager's effort together with a random shock  $\varepsilon$  with  $\varepsilon \sim N(0, \sigma_\varepsilon^2)$  determines the firm's value, i.e. the stream of discounted future profits  $\pi(e, \varepsilon)$ . The owner has the right to these profits. Without monitoring, firm value is the only verifiable signal of the manager's effort. It is an imperfect signal distorted by the random shock.

The severity of the distortion in the signal of managerial performance, i.e. the variance  $\sigma_\varepsilon^2$  is one parameter which can be influenced by the integration of European financial markets. In particular, to the extent that financial integration improves the liquidity of stock markets, the share price may become a more accurate measure of managerial performance. Holmström and Tirole (1993) have argued that, while a liquid stock market is at a disadvantage in providing incentives for collecting *strategic* information about ways in which the performance of a company may be improved (because of free rider problems), it is well suited to provide incentives for collecting *speculative* information about the likely future performance of firms under incumbent management. Speculators can thrive only in liquid markets. If there are only long-term investors in the market, speculators face the same free rider problems that raiders face: incumbent owners will take the speculator's bid as a signal of an imminent rise in the price of the stock and will decline to sell. Thus speculators would have no incentive to monitor a firm. If by contrast there are also short-term liquidity traders, i.e. investors which sell shares because they need liquidity, speculators can exploit any information they may have on the future performance of the stock. It thus pays for speculators to monitor firms and to invest in acquiring such information. Once publicized through the market, this kind of information is well suited to generate high-powered performance incentives for incumbent management.

The manager maximizes his utility  $V = 1 - \exp[-r(w - C(e))]$  under constant absolute risk aversion, where  $r$  is the coefficient of absolute risk aversion, and  $w$  is the manager's pecuniary reward. Let the manager's outside option, his reservation utility, be 0.

For concreteness, let the firm's value be simply the sum of the manager's effort and the shock, and let the shock be normal:

$$\pi = e + \varepsilon .$$

Moreover, let the manager's cost of effort be quadratic  $C(e) = \frac{e^2}{2}$ . Holmström and Milgrom (1987) have shown that with an exponential utility function and normal errors, the optimal contract is linear in the performance signals such that  $w = \beta_0 + \beta_1 \pi$ .



The manager chooses his effort to maximize expected utility given the contract offered by the owner. His incentive constraint (IC) is

$$(1) \quad \frac{\partial V}{\partial e} = (-r)(\beta_1 - e)V = 0$$

which implies that the manager picks the effort

$$(2) \quad e^* = \beta_1.$$

In certainty equivalent form, the manager's participation constraint (PC) is given by

$$(3) \quad 1 - \exp\left[-r\left(\beta_0 + \frac{1}{2}\beta_1^2(1 - r\sigma_\varepsilon^2)\right)\right] \geq 0$$

Assuming that all the bargaining power resides with the owners, (3) will be binding. Solving for  $\beta_0$  yields

$$(3') \quad \beta_0 = -\frac{1}{2}\beta_1^2(1 - r\sigma_\varepsilon^2).$$

Equations (2) and (3') form the constraints under which owners design the manager's contract.

### 3.1 Ownership Structure

In contrast to much of the standard literature on principal-agent problems at the firm level, we allow for risk aversion on the part of owners, and we endogenize ownership concentration. This allows us to model a trade-off between diversification of firm risk and collective action problems in monitoring.<sup>4</sup> In so doing we establish a link between the ownership structure and the capital structure of the firm as two governance instruments that are employed simultaneously to reduce agency costs.

To this end, we consider a particular owner holding a fraction  $\alpha$  of the firm's equity. In order to keep the model simple, we assume that the owner only has the choice between not monitoring at all or monitoring at a specific level of intensity. We assume that monitoring, if it is undertaken, will be perfect, i.e. the signal obtained perfectly reveals the manager's choice of effort. The cost associated with monitoring is  $M$ .

Again, this monitoring cost is a channel through which financial integration may influence the structure and efficacy of corporate governance. In particular, monitoring costs will tend to be higher for outsiders (small investors, analysts etc.) in environments where markets are less transparent, perhaps due to less stringent accounting, reporting and disclosure requirements or due to reporting in different currencies. Conversely, where transparency is higher, the costs for

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<sup>4</sup> Without such a trade-off, the principal agent problem with risk averse principals could be avoided trivially by selling the firm to the agent (wealth permitting).

small investors and analysts to acquire information on how well a firm is being run and how its performance might be improved are likely to be smaller. Hence to the extent that financial market integration leads to greater transparency, this can be expected to have an impact on corporate governance structures via monitoring costs.

Let the owner's utility function be

$$U = -\exp(-r_o[\alpha(\pi - w) - M]) \text{ where } r_o \text{ is the owner's degree of absolute risk aversion.}$$

Notice that the owner shares in the firm's value (net of payments to the manager) only in proportion to his ownership stake, whereas he bears the full fixed cost of monitoring. Hence monitoring creates a positive externality for other owners. This captures the free-rider problems of monitoring. In the literature, it is frequently argued that this free rider problem can be overcome by concentrating a previously dispersed ownership structure and thereby internalizing more of the gains from monitoring. This argument, however, neglects the simultaneous effect of more concentrated ownership on the *risk tolerance* of monitoring owners, i.e. on the *size of the risk premium* they require. The following paragraphs show that this effect runs counter to the internalization effect, so that the overall impact of more concentrated ownership is theoretically ambiguous.

The manager's optimal choice of effort is unaffected by the owners' risk tolerance for a given contract and is given by (2). For a given ownership structure, and assuming for the time being that monitoring is profitable, the owner maximizes his certainty equivalent utility subject to the manager's incentive and participation constraints (2) and (3). The owner's certainty equivalent is

$$(4) \quad CE_o = \alpha \left( \beta_1 - \frac{1}{2} \beta_1^2 \right) - M - \frac{1}{2} r_o \alpha^2 \sigma_\varepsilon^2,$$

where the last term is the risk premium and measures the owner's tolerance for risk. A higher ownership stake  $\alpha$  is seen to have two countervailing effects on the owner's certainty equivalent under risk aversion and monitoring. It raises the owner's gross expected pay-off and thereby increases the revenue available to defray monitoring costs. At the same time, a higher ownership stake exposes the owner to more of the firm's idiosyncratic risk and hence reduces the owner's utility via a higher risk premium in the certainty equivalent.<sup>5</sup>

Maximization of (4) yields the following contract

$$(5a) \quad \beta_1'^* = 1 \quad \text{and}$$

$$(5b) \quad \beta_0'^* = -\frac{1}{2}.$$

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<sup>5</sup> From equation (4) it is clear that as the ownership stake tends to zero, the risk premium tends to zero faster than the mean pay-off, so that the objective of the risk-averse owner becomes observationally equivalent to the objective of a risk-neutral owner. This is why in the standard model perfect portfolio diversification is equated to risk neutrality.

In addition, the owner chooses his optimal ownership stake according to

$$(6) \quad \frac{\partial CE_s}{\partial \alpha} = 0 \Rightarrow \alpha^* = \frac{1}{2r_o \sigma_\varepsilon^2}.$$

Hence, more risk-averse owners will choose to hold smaller stakes, and risk averse owners will choose to hold smaller stakes in more risky firms. Plugging equations (5) and (6) into (4), we obtain the owner's certainty-equivalent pay-off under risk aversion and with monitoring as

$$(7) \quad CE_{O,M} = \frac{1}{8r_o \sigma_\varepsilon^2} - M.$$

However, ex ante, the owner will decide to monitor only if his certainty equivalent pay-off with monitoring exceeds what he could obtain without monitoring. Without monitoring, the managerial incentive contract can be written only on firm values. The manager's incentive constraint and individual rationality constraint are then again given by (1) and (3) above. The owner's certainty equivalent then is

$$(8) \quad CE_o = \alpha \left( \beta_1 - \beta_1^2 \left( \frac{1}{2} + r \sigma_\varepsilon^2 \right) \right) - \frac{1}{2} r_o \alpha^2 (1 - \beta_1)^2 \sigma_\varepsilon^2.$$

This yields the following optimal parameters for the manager's contract

$$(9a) \quad \beta_1^* = \frac{1 + \alpha r_o \sigma_\varepsilon^2}{1 + (\alpha r_o + r) \sigma_\varepsilon^2} \quad \text{and}$$

$$(9b) \quad \beta_0^* = -\frac{1 - r \sigma_\varepsilon^2}{2} \left( \frac{1 + \alpha r_o \sigma_\varepsilon^2}{1 + (\alpha r_o + r) \sigma_\varepsilon^2} \right)^2.$$

It can be seen from equation (9a) that for any ownership structure,  $\frac{\partial \beta_1^*}{\partial r_o} > 0$  and  $\frac{\partial \beta_1^*}{\partial r} < 0$ . Hence in the presence of asymmetric information (i.e. in the absence of monitoring), it is optimal to expose the manager to more risk as the difference in risk tolerance between owner and manager gets smaller. By the same token,  $\frac{\partial \beta_1^*}{\partial \alpha} > 0$ , as more concentrated ownership exposes the owner to more of the firm's idiosyncratic risk at given risk tolerance.

Differentiating (8) with respect to  $\alpha$ , we obtain the optimal degree of ownership concentration in the absence of monitoring as

$$(10) \quad \alpha^* = -\frac{1 + r \sigma_\varepsilon^2}{r_o} + \frac{r}{r_o} \sigma_\varepsilon^2 \sqrt{\frac{1 + r \sigma_\varepsilon^2}{1 - r \sigma_\varepsilon^2}}.$$

Hence more risk averse owners will choose smaller stakes.

Plugging (10) into (9a) gives us the optimal incentive coefficient with endogenous ownership structure

$$(9a') \quad \beta_1^* = \frac{(1-r\sigma_\varepsilon^2)[1-\sigma_\varepsilon^2(1+r\sigma_\varepsilon^2)]+r\sigma_\varepsilon^4\sqrt{1-r^2\sigma_\varepsilon^4}}{(1-r\sigma_\varepsilon^2)[1+r\sigma_\varepsilon^2-\sigma_\varepsilon^2(1+r\sigma_\varepsilon^2)]+r\sigma_\varepsilon^4\sqrt{1-r^2\sigma_\varepsilon^4}}$$

Note that with the ownership structure endogenized, the optimal incentive parameter *under the condition that no monitoring is undertaken* no longer depends on the owners' degree of risk aversion  $r_0$ . This is as it should be: when owners become more risk averse, they basically have two options; they can shift more of the firm's risk onto the manager by making the contract more responsive to firm value, or they can reduce the risk they take by holding a smaller stake in the firm. In the present model, the former response carries a cost (the higher expected remuneration the manager requires to accept greater risk), while the latter response does not (given that owners do not monitor, there is no externality that could increase if the stake is reduced). Therefore without monitoring, the optimal managerial contract is independent of the owners' degree of risk aversion. However, both the optimal ownership stake and the decision whether or not to monitor do hinge on the owners' attitude towards risk.

The condition for monitoring to be optimal then is

$$(11) \quad \frac{\alpha}{2}[1-2\beta_1+\beta_1^2(1+2r\sigma_\varepsilon^2)]-\frac{1}{2}r_0\alpha^2\sigma_\varepsilon^2(2\beta_1-\beta_1^2)\geq M$$

where  $\beta_1 = \beta_1^*$  and  $\alpha = \alpha^*$  from (9a) and (10).

The effect of more concentrated ownership on monitoring incentives is seen to be a priori ambiguous as more concentrated ownership has the benefit of internalizing more of the gains from monitoring, but comes at the cost of exposing the monitoring owner to more of the firm's risk. Differentiating the LHS of (11) with respect to the ownership structure and using (9a), we have

$$(12) \quad \frac{1}{2}[1-2\beta_1^*+\beta_1^{*2}(1+2r\sigma_\varepsilon^2)]-r_0\alpha^*\sigma_\varepsilon^2(2\beta_1^*-\beta_1^{*2})+ \\ \left([-1+\beta_1^*(1+2r\sigma_\varepsilon^2)]-r_0\alpha^*\sigma_\varepsilon^2(1-\beta_1^*)\right)\alpha^*\frac{\partial\beta^*}{\partial\alpha}$$

the sign of which can be either positive or negative depending on the parameters of the model. Thus whether more concentrated ownership actually leads to more monitoring depends on the owner's degree of risk aversion relative to the manager's as well as on the overall riskiness of the firm and on the cost of monitoring. If owners are sufficiently risk-averse, then the positive effect of ownership concentration, i.e. internalizing monitoring benefits, is overcompensated by the negative effect, i.e. the larger risk premium required by owners.

### 3.2 Capital Structure

Given that variations in the ownership structure in isolation do not necessarily help in mitigating the problem of insufficient monitoring, we now ask how the negative effect of ownership concentration on monitoring incentives, which is at the root of the problem, might be neutralized. We have seen in the previous section that increasing ownership concentration, while having the benefit of reducing monitoring externalities, comes at the opportunity cost of making the owner less tolerant towards risk and therefore less inclined to use information obtained via monitoring. Hence it makes sense for the firm to use an additional governance instrument to counteract the risk-shifting effect of ownership concentration. We propose changes in the capital structure as a way to achieve this. Specifically, it has been recognized that higher leverage allows owners to share the downside risk of the firm with creditors, without forcing them to share the upside risk (see e.g. Jensen and Meckling 1976). This suggests that increases in leverage can be used to balance the risk-shifting effects of increases in ownership concentration.

In order to discuss the impact of the capital structure on monitoring incentives, we introduce a further simplification by assuming that the random shock influencing firm values is dichotomous rather than normally distributed.<sup>6</sup>

$$(13) \quad \varepsilon = \begin{cases} \bar{\varepsilon} & \text{with } \bar{p} \\ \underline{\varepsilon} & \text{with } 1 - \bar{p} \end{cases}$$

We also first assume that the shareholder is risk neutral (and hence may own the entire firm). In a firm financed fully with equity, the shareholder's pay-off with monitoring then is

$$(14) \quad (\pi - w - M)_M = \begin{cases} \bar{\varepsilon} + \frac{1}{2} - M & \text{with } \bar{p} \\ \underline{\varepsilon} + \frac{1}{2} - M & \text{with } 1 - \bar{p} \end{cases}$$

with mean  $E(\pi - w - M)_M = \frac{1}{2} - M$  and variance  $\sigma_\varepsilon^2$ .

Without monitoring by contrast, his pay-off is

$$(15) \quad (\pi - w)_N = \begin{cases} \frac{1}{1 + r\sigma_\varepsilon^2} \left( \frac{1}{2} + \bar{\varepsilon} r \sigma_\varepsilon^2 \right) & \text{with } \bar{p} \\ \frac{1}{1 + r\sigma_\varepsilon^2} \left( \frac{1}{2} + \underline{\varepsilon} r \sigma_\varepsilon^2 \right) & \text{with } 1 - \bar{p} \end{cases}$$

with mean  $E(\pi - w)_N = \frac{1}{2(1 + r\sigma_\varepsilon^2)}$  and variance  $\left( \frac{r \sigma_\varepsilon^2}{1 + r \sigma_\varepsilon^2} \right)^2 \sigma_\varepsilon^2$ .

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<sup>6</sup> Note that  $E \varepsilon = 0$  implies  $\underline{\varepsilon} < 0$ .

Note that as before, the variance of the owner's pay-off is larger under monitoring because monitoring shifts firm risk from the manager to the owner, i.e. in the good state the pay-off with monitoring is larger than without monitoring, but in the bad state it is smaller. Setting the two mean pay-offs equal, we find that the owner will be indifferent between monitoring and not monitoring iff

$$(16) \quad M = \frac{1}{2} \frac{r\sigma_\varepsilon^2}{1+r\sigma_\varepsilon^2}.$$

Now suppose the firm is not financed fully with equity, but with a combination of debt and equity. Specifically, assume that the owner has wealth  $K$  and that the firm requires an investment of precisely  $K$ . Then without leverage, the owner had to invest his entire wealth in the firm. Now suppose he takes on outside debt in the amount of  $D$ , freeing an equal amount of his own wealth for investment in some safe asset with return  $s$ . Let the debt service payment due at maturity be  $(1+i)D$  where  $i$  is the unit cost of (risky) debt and  $i > s$ . Clearly, if the debt service is such that it can be paid with probability 1 regardless of whether monitoring is undertaken or not, i.e. if  $(1+i)D \leq \underline{\varepsilon} + \frac{1}{2} \frac{1}{1+r\sigma_\varepsilon^2}$ , then the introduction of debt will not change the monitoring decision.

By contrast, if the payment due on the debt is larger, e.g. if

$$(17) \quad (1+i)D = \frac{1}{1+r\sigma_\varepsilon^2} \left( \frac{1}{2} + \underline{\varepsilon} r \sigma_\varepsilon^2 \right),$$

such that the owner will get a pay-off of 0 in the bad state of nature irrespective of the monitoring decision, then without monitoring, the owner now expects a pay-off of

$$(18) \quad E_N^D = \bar{p} \frac{r\sigma_\varepsilon^2}{1+r\sigma_\varepsilon^2} (\bar{\varepsilon} - \underline{\varepsilon}) + (1+s)D$$

Conversely, if he decides to monitor, his pay-off will be

$$(19) \quad E_M^D = \bar{p} \left( \bar{\varepsilon} - \frac{r\sigma_\varepsilon^2}{1+r\sigma_\varepsilon^2} \underline{\varepsilon} \right) + (1+s)D.$$

Clearly, we then have

$$(20) \quad E_M^D - E_N^D = \bar{p} \bar{\varepsilon} \frac{1}{1+r\sigma_\varepsilon^2} > 0,$$

i.e. in the presence of debt, the owner is now better off monitoring, when in the absence of debt he was indifferent between monitoring and not monitoring.

Thus, leverage *ceteris paribus* strengthens the incentives to monitor. The rationale behind this result is that leverage introduces an additional investor who will share in the downside risk of the firm. As a consequence, the owners' incentives are distorted towards raising the

amount of risk borne by all investors together by reducing the amount of risk borne by the manager.

However, the fact that leverage strengthens the incentives to monitor does not yet imply that the firm will actually take on debt. It will do so only if by taking on debt and then monitoring the management, the owner is better off than by not taking on debt and abstaining from monitoring. In other words, the owner will decide to take on debt if

$$(21) \quad \bar{p} \left( \bar{\varepsilon} + \frac{1}{2} M - (1+i)D \right) + (1+s)D - \frac{1}{2} \frac{1}{(1+r\sigma_\varepsilon^2)} \geq 0$$

subject to

$$(22) \quad M \geq \frac{1}{2} \frac{r\sigma_\varepsilon^2}{1+r\sigma_\varepsilon^2} \quad \text{and}$$

$$(23) \quad (1+i)D > \underline{\varepsilon} + \frac{1}{2} \frac{1}{1+r\sigma_\varepsilon^2}.$$

Inequality (22) is the condition for monitoring not to be worthwhile in an unlevered firm, while (23) gives the condition for leverage to improve monitoring incentives ex post.

## 4 The Impact of Financial Integration on Corporate Governance Structures

The process of European financial integration has been characterized above by enhanced liquidity of financial markets, reduced monitoring costs, and lower costs of external debt. The model of the preceding section has argued that changes in these parameters are likely to trigger changes in corporate governance structures. Ownership concentration, financial leverage, and monitoring can complement each other in mitigating agency problems between owners and managers in corporations. Leverage allows owners to overcome the externalities of monitoring via accumulating large stakes without exposing themselves to excessive risk. Hence, as these externalities decline, i.e. as the fixed costs of monitoring fall, we would expect to find less concentrated ownership alongside lower leverage. An increase in the liquidity of financial markets, by making market valuation a more accurate signal of managerial performance, would reduce the benefit of monitoring at given monitoring costs, and hence likewise should lead to lower ownership concentration and lower leverage. Reduced costs of external debt, by contrast, would tend to have a countervailing effect on leverage and hence on ownership concentration. Hence, the overall impact of the integration process depends on the strength of these separate effects of integration on market liquidity, monitoring costs, transparency, and the costs of debt. However, by reducing the degree of information asymmetry between owners and managers directly, or by reducing the opportunity

costs of reducing information asymmetry, all these changes can be expected to reduce the costs of the agency conflict between owners and managers.

In this section, we confront these results with some stylized facts on financial systems in Europe and the United States. Because the available time series on, for instance, the financial structure of firms are too short to show the full impact of the integration process, we need to confine our analysis mainly to the status quo. However, we draw implications concerning possible directions of change.

#### 4.1 Capital Structure

The structures of financial assets in Europe and the US show striking differences. Historically, equity has made up between 40 and 60 percent of the liabilities side of the balance sheets of US corporations, with bonds contributing another 10 to 15 percentage points. Thus, markets have consistently been the source of more than half the financing of US corporations in the past 50 years. Bank credit by contrast played a relatively modest role. In Germany, the pattern has been pretty much the opposite, with banks supplying roughly half of all financing (Table 1). Similar figures apply for other European countries (OECD 2001). Similarly, La Porta et al. (1998) find that debt-equity ratios are higher in countries following the German, French and Scandinavian legal traditions than in Anglo-Saxon countries, although the differences are not always significant. In accordance with the above stock measures, analyses of flow data suggest that new equity issues have been considerably more important in the United States than in Germany and Japan, whereas the opposite holds for bank finance (Hackethal and Schmidt 1999).

Given these substantial differences in the structure of enterprise balance sheet, there have been interesting dynamics recently. While, in the US, the share of bank credit has been declining from an already low level, no such trend can be found in Germany so far in the aggregate. However, recent data are available only for corporations. For these firms, the trend is similar to what has been going on in the US, with a declining share of bank finance, and an increase in equity issues.

Obviously, European financial integration and the creation of a common currency area have implications for the financing decisions of firms in Europe. Reduced information costs and greater market liquidity, primarily through the introduction of the euro, are likely to lower leverage. Lower costs of debt through a reduction in liquidity and other risk premia, in contrast, are likely to have a counterbalancing effect. This makes it difficult to isolate the impact of individual parameter changes. Also, the convergence of institutional and corporate governance structures is likely to take place only gradually. While the euro will accelerate the harmonization of institutions, it is too early to draw strong inferences about the importance of these second-round effects.



Table 1 — Balance sheet structure of German and US firms 1950–2000 (percent of total assets)

	1950	1970	1990	1991	1998	2000
<i>Germany<sup>1</sup></i>						
<i>All firms</i>						
Bonds	2,1	2,6	1,7	1,6	1,3	...
Shares	27,8	20,0	16,4	16,0	26,1	...
Bank credit	45,8	51,3	54,5	55,3	52,6	...
Housing credit	0,9	4,2	3,6	3,4	2,8	...
Credits from insurance firms	2,4	4,7	4,6	4,1	3,4	...
Other liabilities	22,6	17,6	19,2	19,5	13,9	...
<i>Corporations</i>						
Bonds	...	...	...	2,1	1,6	1,2
Shares	...	...	...	24,8	38,5	35,4
Credits	...	...	...	46,8	36,6	37,6
Other liabilities	...	...	...	26,2	23,4	25,9
<i>USA<sup>2</sup></i>						
Bonds	14,7	13,3	14,6	13,6	10,4	11,1
Shares	50,6	56,9	38,5	45,4	60,9	59,1
Bank credit	7,2	8,3	7,1	5,7	4,1	4,3
Mortgages	5,0	4	3	2,6	1,5	2,0
Other liabilities	22,6	16,8	36,5	32,6	23,2	23,5
End of period — 1) Germany: For corporations, credits from banks, housing credits, and credits from insurance firms are not reported separately; Other liabilities include i.a. money market funds. — 2) USA: Non-financial corporations outside agriculture; Other liabilities include miscellaneous credits and advances, trade credit, deferred taxes, money market funds.						

Source: Deutsche Bundesbank (1998, 2002), Federal Reserve Bank (2002).

In addition, financial integration will have an impact on financial structures which goes beyond the implications of the model above. Particularities in financial structures which are caused by national regulations in the field of monetary policy (such as the use of trade credit in France) are bound to disappear over time. Likewise, differences in the shares of short-term loans, of variable interest-rate loans, and of foreign currency denominated loans in total credit are often the result of a history of high and/or volatile inflation. Under a common currency, these differences in inflation performance largely disappear, and this should imply a convergence of financial structures as existing contracts expire.

## 4.2 Ownership Structures

A comparison of ownership structures in large corporations across Europe reveals major differences between the US and the UK, on the one hand, and continental European countries on the other hand (Table 2). Ownership is considerably more dispersed in continental Europe

than in the Anglo-Saxon countries. La Porta et al. (1999) trace this fact to differences in the extent to which minority shareholders are protected from abuses of control by majority shareholders.

As a result, agency costs resulting from conflicts of interest between controlling and minority owners are comparatively unimportant in the US. This is confirmed empirically by the low premium which is paid for voting rights in the US stock market, and which can be interpreted as evidence that private benefits of control are small (Macey 1998).<sup>7</sup> These benefits are minimized by the elaborate capital market regulations protecting the interests of minority owners.<sup>8</sup> Indeed, these regulations make for a highly liquid stock market in which minority owners can easily exit whenever they are dissatisfied with a firm's performance (La Porta et al. 1998).

The dominant agency problems in the US therefore are those between owners and managers (Berglöf 1997a) and between owners and creditors. It is important to understand that the efforts to limit agency problems between controlling and minority shareholders *by essentially eliminating controlling shareholders* are directly responsible for making agency problems between owners and managers, and between owners and creditors potentially more severe.

This is because, as shown above, diversified owners tend to underinvest in monitoring the firm due to free rider problems (Bhide 1993). Moreover, the regulations described above place obstacles in the way of shareholder activism even when shareholders otherwise would be willing to monitor and discipline managers. In turn, the more dispersed ownership structure itself creates stronger incentives for stock market analysts and minority investors to collect information on firms, a fact which tends to improve the information content of share prices (Holmström and Tirole 1993), thereby reducing the value of additional signals of managerial performance.

At the same time, the diversification of portfolios which results from the bias towards dispersed shareholdings raises shareholders' tolerance for risky investments. By contrast, creditors prefer the firm to incur as little risk as is compatible with generating a return sufficient to service its debt. Hence the higher tolerance for risk which dispersion induces in owners exacerbates the agency problem between owners and creditors. The relatively low leverage observed in the US can be taken as evidence of agency problems between owners

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<sup>7</sup> Zingales (1995) finds the average voting premium in US markets to be ten percent with a median of only three percent. This is at the lower end of the spectrum in international comparison (Zingales 1994).

<sup>8</sup> It is true that in a takeover ownership becomes more concentrated, so that agency conflicts between controlling owners and minority owners may become more important. However, minority owners enjoy some protection from this in that prospective raiders are not allowed to make tender offers only for controlling blocks of shares. Rather, tender offers must be extended to all shareholders. Indeed, this form of protection for minority owners may lead to the failure of some efficiency-enhancing takeover bids due to free rider problems (Grossman and Hart 1980).

and creditors being avoided rather than being governed. In addition, the comparatively large role of the corporate bond market in the US can be interpreted as a response to the greater divergence of risk preferences between owners and creditors in the US: bonds offer creditors a way to diversify their portfolios more than bank credit could, and thereby allows them to better absorb idiosyncratic firm risks.

*Table 2 — Ownership Concentration*

	Ownership by three largest shareholders		Average market capitalization (millions of US-\$)
	Mean	Median	
Austria	0.58	0.51	325
Belgium	0.54	0.62	3467
Denmark	0.45	0.40	1273
Finland	0.37	0.34	1980
France	0.34	0.24	8914
Germany	0.48	0.50	8540
Greece	0.67	0.68	163
Ireland	0.39	0.36	944
Italy	0.58	0.60	3140
Netherlands	0.39	0.31	6400
Norway	0.36	0.31	1106
Portugal	0.52	0.59	259
Spain	0.51	0.50	1256
Sweden	0.28	0.28	6216
Switzerland	0.41	0.48	9578
United Kingdom	0.19	0.15	18511
<b>average Europe</b>	<b>0.44</b>	<b>0.43</b>	<b>4504</b>
average w/o UK	0.46	0.45	3571
United States	0.20	0.12	71650

Average Combined Ownership Share of the Three Largest Shareholders in the Ten Largest Corporations in 17 countries

Source: Adapted from La Porta et al. (1999).

Conversely, in much of continental Europe, so far ownership has been relatively concentrated, and leverage has been relatively high, as shown in the previous section. In terms of our model, this suggests that the emphasis in solving agency problems between owners and managers has been on active monitoring by owners as the major avenue to reducing information asymmetries in continental Europe. At the same time, the relatively concentrated ownership structure attenuates owners' appetite for risk and thereby mitigates agency conflicts with creditors.

To the extent that financial market integration reduces information asymmetries between owners and managers in Europe by improving the information content of the stock market value (through higher market liquidity and the attendant incentives for information gathering by small investors and stock market analysts) and reduces monitoring costs (through harmonization of standards and the introduction of the common currency), this would create opportunities for owners to diversify their portfolios more without sacrificing the quality of monitoring. Conversely, lower costs of debt would tend to create incentives for raising leverage, thereby reducing the benefits of more diverse ownership structures. Thus while financial integration is likely to reduce agency costs through all three channels discussed here, it is an empirical matter which of the three effects dominates and how as a result ownership structures and capital structures will adapt.

## 5 Outlook

This paper has discussed implications of financial integration for the corporate governance of firms. It has argued that integration tends to increase the liquidity of markets, to lower monitoring cost, and to reduce the costs of debt through reduced risk premia. The implications of these parameter changes have been analyzed in a model of complementarities in corporate governance. The model distinguishes two ways of dealing with agency problems between owners and managers. One is to rely on active monitoring by owners. In order to overcome free rider problems, this solution favors concentrated firm ownership. This in turn will typically require the firm to be significantly leveraged in order to insulate owners from some of the risk their monitoring activities impose on them. The alternative is to rely more strongly on management contracts tying pay to the markets' assessment of the performance of the firm. This leaves more scope for risk diversification through ownership dispersion and therefore reduces the benefits of leverage. Which solution should prevail was shown to depend on the degree of information asymmetry between owners and managers, on the costs of monitoring, and on the costs of debt, all of which can be affected by financial integration.

Historically, ownership has been rather concentrated in continental Europe, leverage has been relatively high, and the sensitivity of managerial pay to the performance of the firm has been muted, suggesting that in terms of our model, the first of the two alternative solutions to the agency problem between owners and managers dominated.

To the extent that financial integration reduces information asymmetry and monitoring costs, our model suggests that *ceteris paribus* continental European corporate governance systems would shift towards less concentrated ownership, less financial leverage and more market-based management remuneration. However, a reduction of the costs of debt induced by financial integration would militate in the opposite direction. Hence the overall impact of financial integration on corporate governance structures must be expected to depend on the

relative strength of the effects which financial integration will have on information asymmetries, monitoring costs and costs of debt.

In turn, this will depend to a significant degree on the response of economic policy. The Competitiveness Advisory Group (CAG) to the European Commission has called for rather far-reaching harmonization of corporate governance. Inter alia it advocates a European company statute (although this is not to be mandatory for European corporations), raising the transparency of European stock exchanges „to the highest international standards“, facilitating takeovers, and making accounting, reporting and disclosure rules more stringent (CAG 1999). A more cautious stance has been taken by the OECD which warns against trying to impose a „one size fits all“ system across different countries, and which advocates harmonized mandatory standards only for accounting rules (OECD 1998).

The question which policies should be recommended is complicated by the complementarities between the various elements of national governance systems. On the one hand, partial, gradual reforms run the risk of undermining the internal consistency of a corporate governance system and thereby leading to a deterioration of performance in the short run. This in turn might create pressures for a reversal of reforms even if down the road they held the prospect of leading to a more efficient system. On the other hand, radical, comprehensive reforms allowing for a quick move from one internally consistent system to another would probably require a broad-based consensus about what constitutes an efficient system. Given that research on the interplay between the constituent parts of corporate governance systems is still in its infancy, such a consensus would be difficult to build.

Finally, it should not be overlooked that the pressures for adjustment which are created by the integration of European and global capital and goods markets, and by the introduction of the euro, do not affect all firms the same way. Thus one future scenario would be for national differences in corporate governance systems to prevail as national systems retain their relevance for medium-sized firms with a regional or national orientation, while at the same time the corporate governance practices of large multinational firms converge as they compete on global markets for capital, managerial talent and goods (Schmidt et al. 2001).

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