

# The effect of wealth and ownership on firm performance<sup>1</sup>

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## Abstract

Much of the driving force behind how a firm performs and is governed is linked to the financial incentives provided by the stock ownership and wealth of shareholders, managers, and directors. This article provides an overview of research on how the ownership position and wealth diversification of managers and directors influence the performance of commercial banks. We find that boards of directors are more effective at encouraging efficient bank operations when the directors have a financial stake in their bank through stock ownership. Stock ownership by professional managers is also associated with improved efficiency in banks and provides incentives for man-

agers to run banks at a risk level more in line with stockholder preferences. Finally, banks tend to have less risk when the wealth of managers and major stockholders is more concentrated in their bank investments. Overall, we argue that a complete understanding of how financial incentives influence firm performance requires knowledge of not just the ownership positions but also of the level and composition of wealth held by owners and managers. Our results further suggest that many banks and other firms could measurably improve their performance through careful use of the financial incentives associated with stock ownership.

<sup>1</sup> The views in this article are the authors and do not necessarily reflect those of the Federal Reserve Bank of Kansas City or the Federal Reserve System.

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A critical issue that firms of all sizes must face is what form of management, ownership, and board structure will lead to strong performance and effective risk management. At the heart of this issue is the corporate governance framework that is established to protect the interests of a firm's shareholders. This framework – as constructed by laws, regulations, and the actions of the firm and its key players – must address such matters as the makeup of the board of directors, the board's oversight of management officials, and the financial incentives and other factors used to align the actions and interests of key players with that of stockholders. These corporate governance issues, moreover, have taken on even greater significance in the aftermath of such corporate scandals as Enron, Arthur Andersen, Tyco, and WorldCom, and the ensuing passage of the Sarbanes-Oxley Act of 2002. Under the Sarbanes-Oxley Act, publicly traded corporations face a number of provisions aimed at improving corporate disclosures, increasing managerial responsibility and involvement, and tightening board oversight.

Within the corporate governance framework, much of the driving force behind how a firm performs and is governed is the stock ownership and wealth of shareholders, managers, and directors. In addition to forming the basis of a capitalistic system, ownership and wealth provide many of the financial incentives that direct the actions of key players in a firm. For instance, stock ownership, by establishing which parties are entitled to the benefits from a firm's operations, will determine who has the most to gain and the greatest incentive to lead a firm to peak performance. Personal wealth, or one's overall financial position, may further influence the level of risk a company's investors and managers are willing to assume, as well as determine the resources available to support the business. As a result, these ownership and wealth incentives are important for investors and others to understand as they evaluate the performance of firms and the effectiveness of management control and compensation systems.

This article provides an overview of some research we have done on how the ownership position and wealth diversification

of managers and directors influence a firm's performance.

### Banks in the study

We use a sample of state-chartered banks in the Kansas City Federal Reserve District. Each of the banks in our sample has total assets of under U.S.\$1 billion, which would put all of the sample banks in the size range typical of most community banks. These banks provide a good basis for examining the role of wealth and ownership in corporate governance, since they operate with a wide range of management/ownership structures, ranging from hired managers with little or no stock ownership to owner-managers controlling virtually all of their bank's stock.

Much of the ownership and management information in our research is derived from bank examination reports. These reports have the unique advantage of providing detailed information on a variety of factors, including the specific responsibilities of bank managers, the amount of bank stock held by individual investors, and the personal wealth and other characteristics of bank directors. In addition, we use the quarterly Reports of Condition and Income that banks file with their federal regulators to supply information on each bank's performance. This dataset thus offers consistent and comprehensive information on bank performance and on bank ownership/management structure. Also, because the study looks at a single industry, we have the benefit of a fairly comparable group of firms over which to analyze management/ownership relationships.

Although our research only looks at banks, the governance issues we examine are ones that affect businesses of all types and sizes. Since banks are subject to a fairly extensive regulatory framework, bank managers and owners operate under an additional form of governance compared to many other businesses. Consequently, the numerical results we find may not be directly transferable to another industry, but the basic relationships should be typical of what other small- to medium-sized businesses face as they address issues concerning management and ownership structure, board oversight, and

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financial incentives. Large corporations also face much the same set of corporate governance issues, but under a somewhat different operating environment – one that is likely to be characterized by many more stockholders, a less concentrated ownership structure, and the discipline imposed in actively traded markets.

### The effect of stock ownership on firm performance

The management or top officers in a firm can largely be composed of its principal owners or be hired from outside this ownership group. While many firms begin with owner-managers, the hired manager route might be chosen when owners are ready to retire from management positions, have other business interests occupying their time, or do not have the background or experience to run the business on a daily basis. Professional or hired managers may also provide a way for stockholders to bring in expertise, experience, and outside perspectives that may be useful to the firm.

owner-managers and hired managers, though, may differ notably in their motivation or incentives for running the business. owner-managers know that they will benefit directly from successful ventures through their claim to the firm's earnings as a stockholder. In contrast, a hired manager's principal compensation is likely to be through his or her salary, with other returns from the manager's efforts being passed on to stockholders. Thus, compared to owner-managers, hired managers do not have the same incentive to maximize the value of the stockholders' investment. Under financial theory, this separation between ownership and management is commonly referred to as the principal-agent problem, in which hired managers look to maximize the value of their own utility rather than that of the firm. Jensen and Meckling (1976) used the term agency costs to describe reductions in the value of the firm arising from such behavior by hired managers.

These agency costs may take a number of forms. A hired manager may not be motivated to put forth as much effort

(shirking) as an owner-manager, since they will not receive the same stock returns as owner-managers. In running the firm, a hired manager may also attempt to maximize his or her utility by consuming excessive perquisites (expense preference), looking to gain power and make unprofitable acquisitions (empire building), or avoiding projects that owner-managers and other stockholders would be willing to pursue (risk aversion). All these costs are indicative of principal-agent problems between stockholders and hired managers and the inherent divergence in their interests.

There are several mechanisms that can help overcome the principal-agent problem. The labor market provides incentives for managers to perform well because there is value in a reputation for competency [Fama (1980)]. The capital market can also encourage good performance by hired managers. Shareholders monitor a firm's performance and can punish poor performance by selling shares, thus putting downward pressure on share prices and increasing the potential for takeover.

Other options shareholders have to align the interests of hired managers more closely with their own include establishing effective board oversight of management and giving managers an ownership stake in the firm. Since the primary role of the board of directors is to oversee and control the firm's operations, the board's responsibilities would involve monitoring hired managers and encouraging them to operate the firm in a profitable and efficient manner. Giving hired managers an ownership stake would provide a direct means for closely aligning their interests with that of stockholders and thus leading managers to attain goals set by stockholders and the board.

One potential danger with managerial ownership is that at sufficiently high levels of ownership managers may become entrenched and be in a strong enough position to pursue their personal interests at the expense of other owners. To the extent such conflicts arise over the control of the firm, a firm's performance may not follow the path desired by other

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stockholders. Several researchers [Stulz (1988)] have found that managerial ownership initially helps to align manager and stockholder interests, but after a point, can lead to entrenchment, thus resulting in an inverse-U shaped relationship between firm performance and the amount of stock held by hired managers.

In relating performance to the ownership and management structures in our sample banks, we measure performance by estimating the relative cost and profit efficiency of these banks. Bank cost and profit efficiencies are calculated through an estimation procedure that expresses a bank's actual cost or revenues as a percent of those that the best banks would have if they produced the same output and faced the same input prices. Because these performance measures thus adjust for market factors, they should provide a better comparative measure of how managers perform than simple accounting ratios for overhead costs and returns on assets and equity. Moreover, we could not use standard stock market performance measures since only a handful of the sample banks had actively traded stock.

### Boards of directors and firm efficiency

A company's board of directors has many important responsibilities, including hiring and overseeing the management team, setting major policies and objectives, monitoring compliance with these policies, and participating in all significant decisions within the company. Directors thus play a key role in defining the framework under which a firm operates, and their decisions should influence a firm's efficiency and performance.

Figure 1 explores the role that directors play by comparing characteristics of directors at banks that perform well on the basis of a combined cost efficiency and revenue test with those at banks that rate lower on this combined test. Under this test, the makeup of the board does not differ in any significant way between the most efficient and least efficient banks with regard to the number of directors, their average age, or length of tenure. Directors at the most efficient banks,

	Most efficient banks	Least efficient banks
Number of directors	6.6	6.7
Average age	57.1	56.9
Average tenure with bank (years)	16.3	14.4
Net worth per director (median value in \$000s)	\$1,317*	\$835*
Share of bank owned by the entire board	66.3%*	55.9%*
Percent outside directors	25.9%*	34.3%*
Meetings per year	11.6*	10.6*
Attendance rate	94.2%*	92.1%*
Annual fees per director	\$3,326*	\$2,257*

Figures in this table are group averages for the most or least efficient banks, except for the net worth of directors, which are group medians. There are 73 banks in the most efficient group and 70 banks in the least efficient group.  
\* Indicates statistically significant  
Source: adapted from Spong, Sullivan, and DeYoung (1995), p. 9.

Figure 1 - Characteristics of the board of directors and bank efficiency

though, have a higher median net worth, a greater ownership share in their bank, and are less likely to be outside directors. The most efficient banks also tend to have more frequent board meetings, better attendance rates, and higher director fees.

Overall, these figures suggest that banks in our sample are more efficient when their directors have a greater financial stake in their bank's success. Moreover, this financial interest appears to provide a strong incentive for the directors to be more actively involved in their banks and to monitor management closely. Efficient banks have also been willing to pay higher fees for directors and, on the basis of net worth figures, seem to have succeeded in attracting a more successful group of directors.

Although these results are based on our sample of community banks, a more general interpretation of the results would be that the most active and committed directors in any firm are likely to be those with a consequential financial stake in its operations. Thus, while independent directors have a role to play in the makeup of corporate boards, our results suggest that, at least at small- and medium-sized firms, boards and the overall business will function better when directors with a greater ownership interest are included.

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### Ownership, management, and firm profit efficiency

The motivation and goals of officers and stockholders are likely to be major determinants of a firm's performance. In many smaller firms, large stockholders may often form much of the management team, while in other firms, management and major stockholders may be largely separate, thus raising principal-agent and control issues.

To investigate the effect of ownership and management structure on bank profit efficiency, we focus on the daily managing officer of the bank. This individual is responsible for the daily operations of the bank and must make and oversee many of the decisions that come up within the normal course of business. The daily managing officer is thus in a position that could have the most impact on bank profitability, and his or her ability to serve the interests of stockholders will be a major factor in a bank's performance.

In some cases, the daily managing officer will be a major stockholder and will thus have an insight into stockholder interests and will directly benefit from any steps taken to control costs and improve bank performance. In other cases, though, the daily managing officer may be a hired manager with little ownership interest. Since a hired manager would not be rewarded in the same manner as stockholders when the bank does well, stockholders and directors may have to be more careful in conveying their objectives to a hired manager. They may also have to monitor this manager's performance more closely and design effective ways to reward him or her for superior performance. All these steps could elicit better performance from a hired manager, but they might be a less than adequate substitute for significant stock ownership.

Because agency problems will be more prominent in a hired-manager bank, we separated hired-manager from owner-manager banks when we looked at how a manager's ownership position is related to bank profit efficiency (i.e., a bank's ability to generate profits compared to other banks). In this analysis, an owner-managed bank is one in which the daily

managing officer is either the bank's largest shareholder or is part of a family or other close-knit group controlling the largest block of bank stock. When we undertake a multivariate regression analysis of the relationship between managerial stock ownership and bank performance, we find that the estimated relationship between bank profit efficiency and the manager's family ownership of the bank is distinctly different for hired compared to owner-managers. In the relevant range of their ownership, there is a marked change in profit efficiency for small changes in ownership of hired managers. In owner-manager banks, by contrast, profit efficiency changes little in response to changes in manager ownership. This reflects the fact that owner-managers already have substantial control over their organizations so that added ownership will provide little incentive to alter behavior.

Our analysis indicates an inverse-U shaped relation between profit efficiency and ownership positions of hired managers. Profit efficiency is at a peak when hired managers have a 17 percent ownership stake in their bank. Before this ownership level is reached, additional stock holdings are associated with improved efficiency, but afterwards profit efficiency declines.

This effect of managerial ownership is economically meaningful. Banks whose hired managers had no ownership operated with an average profit efficiency ratio of 68 percent. In contrast, banks where hired managers had a 17 percent ownership stake had average profit efficiency ratios of 77 percent. Thus, the optimum use of ownership holdings for hired managers would allow banks to close 28 percent of the gap in performance with the most efficient bank<sup>2</sup>.

One interpretation of these results is that the incentive of ownership helps to mitigate the principal-agent conflict and spur hired managers to improve the performance of their banks. Given these benefits, it is surprising that only one-third of the sample banks with hired managers allow these managers to have more than a trivial stake in the bank. This outcome suggests that ownership is a greatly underutilized tool in combating agency costs. At the same time, only a

<sup>2</sup> This result is based on the calculation  $28\% = (77-68)/(100-68)$ .

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small number of banks operated with hired managers that had over a 17 percent ownership stake, which is the point at which entrenchment and conflicts with principal owners began to have an adverse effect on performance in our sample banks<sup>3</sup>.

There are some caveats to these results. Perhaps most important, we caution against thinking that managerial ownership is a magic bullet: simply grant hired managers a 17 percent ownership stake and improve your firm's profit efficiency by 9 percentage points. It is more likely that stockholders have rewarded hired managers with grants of stock and/or stock options for superior performance over time rather than just as an inducement for better performance now. We would, by no means, downplay the continuing incentives that ownership provides, though, given the better performance that still exists during our study period for hired managers that have accumulated an ownership stake.

We also find that many hired-manager banks may have achieved higher profit efficiency than owner-managed banks, which seems to dispel part of the principal-agent hypothesis. However, some of the difference in performance is due to differences in bank size, location, and organizational form, and adjusting for these factors would improve the efficiency of owner-managed banks relative to hired-manager banks. owner-managers in small banks also have incentives to shift part of the remuneration they would otherwise receive in the form of bank earnings and dividends into additional salary and other benefits for themselves, thus reducing the double taxation they would face, as well as reducing the bank's estimated profit efficiency. Moreover, as we will see next, many owner-managers may perform well, but with a different risk-return trade-off that is linked to their personal financial situation.

### How managerial ownership and wealth concentrations affect firm risk

Managing risk is a complicated task in any firm and perhaps even more so in banks where a public safety net exists to ensure financial stability and where banks are subject to

close oversight by banking agencies. Moreover, preference for risk taking is an individual matter, and it may be difficult for outsiders to determine if a particular firm is operating at a desirable risk-return trade-off. In this regard, the best that firms may achieve is to manage risk in a manner that reflects the wishes of their base of stockholders.

Principal-agent relations can complicate the management of risk in any type of firm. A manager without an ownership interest does not benefit to the same extent as stockholders when risky projects are successful but suffers damage to reputation and human capital when they fail. As a result, these managers (if other relevant factors are similar) will be more averse to risk than stockholders and may avoid risky projects that have a positive expected payoff. Incentives through compensation contracts as well as potential future job prospects can encourage managers to better meet stockholder objectives. Ownership can also align manager interests with that of stockholders and thus provide an incentive for a manager to take more risks.

An alternative and complementary strategy is to actively monitor the activities of the manager. This is a major role of the board of directors, but because monitoring is a costly activity, it will likely be more effective if the monitor has a strong interest in the performance of the bank. In particular, an effective monitor will likely have a significant ownership position in the bank.

Apart from the amount of stock they own, we can also expect the risk preferences of owners and managers to be tied to their personal financial characteristics. An important characteristic is the degree of diversification of personal financial wealth. If a manager's financial wealth is not well diversified and the value of his or her investment in the firm is a large part of that wealth, then the manager would likely be much more cautious in taking risks compared to a manager with a highly diversified portfolio. In a similar fashion, a monitor or director's personal financial position would influence firm risk according to the same parameters.

<sup>3</sup> In our sample, only 10 of the 55 hired managers with nonzero family ownership had a stake greater than 17 percent.

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### Measuring risk in the sample banks

Managing risk in a bank involves a wide range of steps. Lending losses are one major source of risk in a bank. This risk is controlled through decisions on mix of assets held (loans versus investments), the mix of loans a bank will make (consumer, real estate, commercial, or other types of loans), as well as the process and parameters used to screen potential borrowers. Other banking risks include interest rate risk that arises when bank assets and liabilities have different maturities, liquidity problems associated with the need to stand ready to meet the needs of those with demand deposits and other bank obligations, and all the risks that arise in the normal daily operations of banks.

Our research looks at a number of bank risk measures to test how managerial ownership and monitoring affect bank risk taking<sup>4</sup>. In this article, we report on a comprehensive measure of bank risk called the ‘distance to default.’ It is based on the probability distribution of the income earned by the bank and is derived by asking the question: how far would income have to fall before the bank would be forced to default on its debt. Specifically, the distance to default is defined as:  $(\text{capital-to-asset ratio} + \text{average value of return on assets}) / (\text{standard deviation of return on assets})$ .

This number represents the number of standard deviations below the mean that return on assets would have to fall in order to eliminate capital and force the bank to default<sup>5</sup>. The higher the value of this distance to default, the lower a bank’s risk. An increase in the capital-to-asset ratio would raise the index, as would an increase in the mean value of operating return on assets, both of which imply less risk. A decrease in the standard deviation of operating return on assets would also raise the index and lower a bank’s risk exposure.

The distance to default is of particular importance to stockholders and regulators since bank failure can wipe out a stockholder’s investment, while also exposing the bank insurance fund to loss. An additional advantage of this risk measure is that it incorporates three elements of bank risk, name-

ly, fluctuations in income, the overall level of profitability, and capitalization. For example, a bank may have a highly variable income stream, but it could offset some of this risk with higher capital protection or a higher level of average profitability.

### Manager characteristics and bank risk

As might be expected, much of the net worth of owner-managers is tied up in their bank investment. Figure 2 shows that, in our sample, the average ratio of the daily managing officer’s bank investment to personal net worth is 86 percent in owner-managed banks, and the corresponding value for managers in hired-manager banks is only 21 percent.

If other factors affecting risk were the same, this would suggest that the typical owner-manager has much more of his or her livelihood at stake and should be more careful in running the bank than a diversified hired manager would be. And in fact the distance to default for owner-managed banks averages 20.58, somewhat higher than the 18.96 average for hired-manager banks, although this difference is not statistically significant.

This division of managers into hired and owner-managers, though, is a crude method for understanding the many variables that can influence bank risk. For instance, these categories do not directly adjust for the amount of stock held by each manager, which will influence the returns a manager might get from taking on more risk. Neither do they account

	Owner-managed banks	Hired-manager banks
Personal net worth (millions)	\$1.719*	\$0.472*
Value of bank investment /personal net worth	.86*	.21*
Distance to default	20.58	18.96

\*There are 100 owner-managed banks and 160 hired-manager banks in the sample.  
Source: adapted from Sullivan and Spong, (1998), Tables 1 and 5.  
\* Indicates statistically significant

Figure 2 – Sample averages for the daily managing officer’s bank investment / personal net worth and the bank’s distance to default

4 These risk measures attempt to address credit risk (the loan-to-asset ratio, loan losses, and past due loans), financial risk (the equity-to-asset ratio, the fixed-to-total asset ratio, non-core funding), and interest rate risk. Because risk in one activity can offset that in other activities, we also examine measures of the overall risk of the bank, such as variation in income, as measured by the standard deviation of income over a 20-quarter period.

5 Our research uses operating income (income before taxes and extraordinary items) to calculate return on assets in order to focus more closely on risk in bank operations.

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for other underlying characteristics, such as the wealth diversification of key directors or major owners overseeing the activities of hired managers or the size and location of each bank.

Multiple regression analysis provides an appropriate statistical tool for incorporating the effects of these other factors and gaining a clear picture of how wealth concentration might affect risk taking. We specify an equation that makes risk a mathematical function of several explanatory variables: the manager's ratio of bank investment to personal net worth, the ownership share of the hired manager (when the bank has a hired manager), and a monitor's ratio of bank investment to personal net worth (for hired-manager banks only). In this analysis, a monitor is the director who holds the most shares of any board member and is also part of the largest ownership group. This monitor-director thus has the greatest financial incentive of anyone to monitor management and to play a role in deciding appropriate bank risk exposures. The equation also includes variables to account for a bank's location (metropolitan or rural) and its asset size.

This multivariate approach especially helps to distinguish between the effects of ownership and wealth concentration on risk-taking behavior. Although a person's bank stockholdings would enter into both of these variables, the financial implications can be quite different. Increased stock ownership, *ceteris paribus*, is likely to encourage greater risk taking, given one's increased claim on the returns from successful ventures. However, the more that a person's wealth is concentrated in the bank, the less willing they will be to put this investment at a greater risk.

Our research suggests that ownership by hired managers can help to overcome a tendency by them to take on less risk at their banks than would be desired by stockholders. We find that the distance to default falls considerably (bank risk increases) as hired-manager ownership increases. We also find that, for a given change in ownership, the predicted change in the distance to default is larger for hired managers

compared to that for owner-manager banks<sup>6</sup>. This result is expected because owner-managers already have a significant ownership position in their banks and additional ownership would not provide much incentive to alter bank risk.

In addition, our research suggests that manager wealth concentration is negatively related to bank risk. We find that as a manager's portfolio becomes more highly concentrated in his or her bank investment, the distance to default rises, meaning a lower level of bank risk. The effect that wealth concentration has on bank risk, moreover, is economically important and of a similar magnitude to the impact of changes in managerial ownership. To the extent that stockholders and corporate governance researchers regard ownership structure as a key determinant of firm risk, they should also regard portfolio effects of comparable importance.

Finally, our research indicates that monitors who have their wealth concentrated in their bank investment are able to increase the bank's distance to default, thus lowering bank risk to a level more in line with their own preferences. However, we find no relationship between the monitor's wealth diversification and measures of credit risk at the bank, thus indicating that major investors may have less influence over daily decisions of a bank than they have on broader policy issues, such as capital and aggregate revenue.

While these ownership and wealth influences on risk taking are for a sample of community banks and involve wealth information not normally available to investors, they indicate several relationships important to the operation of firms. For instance, ownership can provide a tool for getting managers to pursue risk-return trade-offs that are more in line with what stockholders want. The results also indicate that a manager's approach to risk taking may be greatly influenced by his financial position. Managers with much of their wealth tied up in their own firms certainly have a strong incentive to put forth their best effort in running the firm, and this wealth concentration may also manifest itself in a more conservative approach to risk taking.

<sup>6</sup> In fact, we do not find a statistically significant relation between an owner manager's stockholdings and bank risk.



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### Establishing the role of wealth and ownership in firm performance

Businesses operate under a wide variety of management/ownership structures, ranging from just a few owners to a widely dispersed group of shareholders, hired managers to owner-managers, boards with few outside directors to many, and stockholders with diversified portfolios to those that have everything tied up in their company. The fact that firms continue to operate with such substantial differences indicates that no single optimal structure is achievable under all circumstances. Instead, businesses must base their operating structure on the type of investors they are able to attract, the managers that are available, and the individuals that are willing to serve as directors.

Within many of these frameworks, there are inherent weaknesses, potential problems, and likely conflicts of interest among the key participants. Financial theory and the results of our research, though, demonstrate a number of steps that stockholders and directors can take to address shortcomings in their ownership/management structure and bring firm performance closer to stockholder preferences. These corrective steps largely reflect the critical role that wealth and ownership play in business ventures. Among our key findings is that an ownership stake for hired managers can help improve firm performance and align the interests of managers more closely with that of stockholders, thus reducing the principal-agent problems posited by financial theory. In a similar manner, we find that boards of directors are likely to have a more positive effect on firm performance when directors have a financial interest in the firm and will thus benefit directly from their own actions.

We also find that managerial ownership, along with wealth and the financial positions of managers and directors, significantly influence a firm's risk decisions and risk-return trade-offs. While no single risk position is appropriate for all firms and all investors, it is important for shareholders to ensure that their own preferences are reflected in their company's operations. Our results suggest that hired managers with no

stock ownership may be reluctant to take the type of risks desired by stockholders, since these managers will not directly benefit from successful ventures and may be putting their jobs at risk in the event of adverse outcomes. An ownership stake for these managers, though, can help to overcome this risk aversion. Wealth concentration or the portion of assets managers have tied up in their own firm can play a separate and equally significant role in a firm's risk taking and its default risk. Firms in which managers or principal owners/directors have invested much of their own wealth in the business operate with lower risk exposures and have much less chance of default.

Our research indicates that each of these ownership and wealth relationships can have a significant effect on a firm's overall performance, and that businesses with management/ownership weaknesses have the potential to improve their operations substantially by addressing these shortcomings. Although some of these ownership and management adjustments may take time, it is important for businesses to identify corporate governance problems and decide what corrective steps are needed.

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