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# BUSINESS REVIEW

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## OFFICE VACANCY RATES: HOW SHOULD WE INTERPRET THEM?

*Theodore M. Crone*

Making sense of commercial office markets is no mean feat. Long stretches of high office vacancy rates might seem evidence that the office market works slowly or not at all. Popular reports notwithstanding, the true measure of slackness or tightness in an office market is not the office vacancy rate by itself. The significant indicator is the gap between the actual vacancy rate and the "natural" rate—the rate that would prevail if developers' expectations about new leaseings were always met. This gap is critical to understanding how the commercial office market operates.

## OWNERS VERSUS MANAGERS: WHO CONTROLS THE BANK?

*Loretta J. Mester*

There are no guarantees that managers will act in the best interest of their bosses, the shareholders. In fact, studies show that, unless controlled, managers will divert resources for their own use and will act too conservatively in order to avoid the risk of unemployment. Banking has its share of these so-called agency problems, which result from managers and owners having divergent goals and different information. But there are ways in which the interests of managers and shareholders could be aligned more closely.



# Office Vacancy Rates: How Should We Interpret Them?

*Theodore M. Crone\**

The construction and leasing of commercial office space receive considerable coverage in most metropolitan newspapers. Often it is the office vacancy rate, or the percentage of office space available for lease, that grabs the headlines. But this measure is not an easy statistic to interpret. The vacancy rate associated with a healthy office market varies from place to place and from period to period. In a city like Boston, a 10 percent vacancy rate might be viewed as a

sign of oversupply. But in a city like Denver, a 10 percent vacancy rate could be seen as a constraint on expansion.<sup>1</sup> And the same 10 percent vacancy rate that would have indicated a slack

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<sup>1</sup>In mid-1988, when the average vacancy rate for 34 downtown markets, according to The Office Network, was about 18 percent, office vacancy rates in the central business districts of Boston, Hartford, New York, and Washington, D.C. were all below 11 percent. In Dallas, Denver, Kansas City, and Miami, they were greater than 24 percent. Moreover, except for short periods, vacancy rates in the first four cities have been below the national average for the past 10 years; rates in the latter four cities have generally been above the national average. It is unlikely that all those cities with long periods of above-average vacancy rates are always overbuilt.

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office market in the late 1970s would be less likely to signal oversupply in the early 1980s.<sup>2</sup>

The true measure of slack in an office market is the gap between the actual vacancy rate and what has been called the natural rate. The natural vacancy rate is the one that would prevail if developers' expectations about regional economic conditions were realized. A city's natural vacancy rate cannot be observed directly, but economists have developed some estimates. The gap between the actual and natural vacancy rates helps rationalize the way the commercial office market performs.

Making sense of commercial office markets is no mean feat. To the casual observer, prolonged periods of high vacancy rates—or sometimes rising vacancy rates accompanied by new construction—might be evidence that the office market works slowly or maybe not at all.<sup>3</sup> But the realization that it is the gap that matters suggests that office markets do adjust to shifts in supply and demand much the way that other markets do.

## DEVELOPERS PLAN FOR SOME SPACE

In the office market, vacancies serve the same role that inventories serve in other markets. They are like any store's merchandise that is kept on hand for immediate purchase. For some goods there are consumers who buy made-to-order items, such as tailor-made suits, and there is no need for the craftsman, in this case the tailor, to keep an inventory of finished

goods on hand. Most people, however, buy suits from clothing stores, where they are available in a short time after only minor alterations. Knowing that most people shop around until they find the suit they want, clothing store managers keep an inventory on hand in order not to lose customers who do not want to wait.

Developers sometimes act like tailors and build to suit, but more often they act like clothing store managers and keep some inventory on hand. For some clients, developers build to suit, or the clients pre-lease space in a building on which construction has not yet begun. These clients, especially if they are large users of space, frequently get concessions on the rental rate, but they must wait for some time before they can occupy the building.

Other tenants, however, need to occupy space quickly and must select from the available inventory. For these tenants, the existence of an adequate inventory of office space saves not only the cost of delay in moving, but also some of the search costs associated with locating the right space. Only a developer who has space readily available will be successful in leasing to these tenants. Vacancies allow developers to have different configurations of space available for potential tenants and to take advantage of any unexpected high demand.

**How Much Vacant Space Should Developers Hold?** In deciding how much space to hold, each developer will weigh the benefits and costs of holding the inventory. In any market, the appropriate level of inventories depends upon the expected level of sales. The clothing store manager who normally sells 50 suits a week will hold more inventory than the one who normally sells only 25. In the same manner, the prime consideration in how much vacant space developers are willing to hold is the amount of space they expect to be absorbed in the near future. (Absorption, or the demand for new office space, is simply the amount of newly occupied space in a given period minus the space vacated in that period.)

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<sup>2</sup>The average vacancy rate for the nation has ranged from 11 percent to 18 percent since 1983. For the previous five years, 1978 to 1982, it was much lower—in the 4 percent to 7 percent range. The years 1972 to 1977 represented an earlier period of double-digit vacancy rates, according to the Building Owners and Managers Association.

<sup>3</sup>For example, the average downtown vacancy rate rose from about 6 percent in mid-1982 to approximately 16 percent by late 1985; yet office construction continued to expand in each of the intervening years.



But what ultimately accounts for the pace of office absorption? Leased as an input into the production of other goods and services, office space is a requirement for accountants, lawyers, and bankers, among others. Thus, office absorption is closely tied to growth in office-related employment, and developers have to assess how fast that employment will increase in the near future, then determine how many years' or months' supply of office space they have on hand. In effect, they have to forecast the growth of certain industries in which a large percentage of workers occupy commercial office space. These industries are fairly easily identified. An examination of the San Francisco office market from 1961 to 1983 found that the best predictor of the increase in occupied office space was the growth of employ-

ment in finance, insurance, and real estate.<sup>4</sup> And a study of national office markets was able to establish that the growth of jobs in these financial services, as well as in other business and personal services, was the most significant factor in explaining the amount of office space absorbed nationwide in the 1967-86 period.<sup>5</sup>

Based on this historical experience, developers can expect the demand for office space to increase with overall job growth in the service

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<sup>4</sup>Kenneth T. Rosen, "Toward a Model of the Office Building Sector," *AREUEA Journal* 12 (1984) pp. 261-69.

<sup>5</sup>William C. Wheaton, "The Cyclic Behavior of the National Office Market," *AREUEA Journal* 15 (1987) pp. 281-99.

## Office Market Surveys

Published on a regular basis, the following surveys contain vacancy rates for individual office markets.

**Building Owners and Managers Association**, *North American Office Market Review*: Produced by the Association since 1986, this semiannual publication contains data on total office space, occupied space, and vacant space for both downtown and suburban markets in various cities in the U.S. and Canada. It also includes a range of quoted rental rates for downtown and suburban markets. This publication replaces an earlier, less complete office market survey by the Building Owners and Managers Association.

**Coldwell Banker**, *Office Vacancy Index*: This quarterly publication contains office vacancy rates for both downtown and suburban markets in various U.S. cities. The earliest data are for June 1978.

**Cushman and Wakefield**, *Across the Nation*: Issued quarterly, this publication contains vacancy rates for both downtown and suburban office markets in various U.S. cities. The survey contains a range of rents for older buildings and for new construction. The number of square feet of completed office construction is also provided in the survey.

**The Office Network**, *International Office Market Report*: This semiannual report contains vacancy rates for downtown and suburban office markets in several U.S., Canadian, and Western European cities. Rates are given separately for existing buildings and for buildings under construction. Quoted rental rates are given for the same categories of buildings. The earliest data are for December 1979.

sector. But not all new jobs in the service sector generate the same demand for office space. First, office workers do not all require the same amount of space. One attempt to estimate the amount of space an office worker uses found that the typical manager occupies 372 square feet of space while the average sales person occupies less than half that (144 square feet).<sup>6</sup> And categories like "manager" and "sales person" are themselves fairly broad. Furthermore, there is no guarantee that the amount of space occupied by a particular type of office worker is the same in every market. It is unlikely that a manager in midtown Manhattan, where yearly asking rents in new buildings in mid-1988 averaged \$50 a square foot, would occupy as much space as his or her counterpart in Wilmington, Delaware, where the average was only \$22.50. In other words, the demand for additional office space is determined not only by the number of new office workers in an area, but also by the price of office space.

By and large, developers' planned vacancy rates will rise and fall with expected job growth. And at least one recent study found a positive relationship between nonmanufacturing employment growth and the natural vacancy rates estimated for 17 U.S. cities.<sup>7</sup> But the composition of new employment and the price of office space will affect the absorption rate and the planned vacancy rate associated with a given rate of job growth. Expected absorption rates rise with increases in expected job growth, but not in lockstep.

While expected demand is the primary factor determining developers' planned vacancy rates, the costs of holding vacant space also

play a role. The major cost, of course, is the cost of financing a building, which depends on the level of interest rates. But this is not the only cost. Operating expenses—including taxes, energy costs, and janitorial services—represent another inventory cost, since some of these expenses are incurred whether the space is leased or not. Property taxes, for example, are an operating expense that can affect the natural vacancy rate. These taxes must be paid whether the building is occupied or not. Accordingly, higher local property taxes seem to lower the natural vacancy rate.<sup>8</sup>

Income tax considerations, too, can affect planned vacancy rates. Even if a building is only partially occupied and not yet producing a positive cash flow, investors can sometimes write off the building's depreciation against the tax liability on income from other projects. This became an important factor in real estate investment in the early 1980s, when the income tax law was changed to allow much of the cost of commercial real estate to be written off soon after it was first put into service or purchased. This accelerated depreciation reduced the cost of holding space in new or newly acquired buildings and may have raised the natural vacancy rate in the United States.<sup>9</sup>

With so many regional and national variables at work, it would not be surprising to find that developers' planned vacancies in office space vary from region to region and from one period to the next. Of course, we cannot observe each developer's plans directly, but economists have tried to estimate the natural va-

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<sup>8</sup>See Shilling, Sirmans, and Corgel (1987).

<sup>9</sup>Estimates by Richard Voith and Theodore Crone of natural vacancy rates for 17 cities and suburbs showed a significant increase in late 1982, about one year after the passage of the 1981 tax act. The authors suggest that this increase was due to the change in the tax law. See Voith and Crone, "National Vacancy Rates and the Persistence of Shocks in U.S. Office Markets," *AREUEA Journal* 16 (1988) pp. 437-58.

<sup>6</sup>David L. Birch, *America's Office Needs: 1985-1995* (Cambridge: MIT Center for Real Estate Development, 1986).

<sup>7</sup>James D. Shilling, C.F. Sirmans, and John B. Corgel, "Price Adjustment Process for Rental Office Space," *Journal of Urban Economics* 22 (1987) pp. 90-100.



cancy rate for various cities—that is, the vacancy rate we would observe if developers' expectations were realized. Recent attempts to measure the natural vacancy rate for individual cities have found considerable differences among cities (see *Estimates of Natural Vacancy Rates*, p. 8).

### OFFICE MARKETS RESPOND TO GAPS BETWEEN ACTUAL AND NATURAL VACANCY RATES

Assessing the health of an office market is not simply a matter of estimating the market's natural vacancy rate or of measuring its actual vacancy rate. It is a matter of evaluating the gap between the two.

If the actual vacancy rate exceeds the natural rate, the market is overbuilt and developers respond accordingly with lower rents and slower construction. If the actual vacancy rate falls below the natural rate, then the market is short on supply and developers raise rents and speed up construction.

A gap between the actual and natural vacancy rate can develop any time the natural rate changes either because expectations about future growth have changed or because the costs of holding inventory have changed. However, larger gaps between the actual and the natural rate generally develop when there is some *unexpected* change in demand.

Consider the case of a market in which office-related employment and office use had both grown at 4 percent a year for some time and the vacancy rate had been a steady 6 percent, indicating that the natural vacancy rate was 6 percent. At any point in time, this market would have a one and a half years' supply of space available. Now suppose that in one year office employment and the use of space unexpectedly grew by 6 percent. Because it takes time to build large office buildings, the level of inventories could fall dramatically. The actual vacancy rate could drop to 4 percent, producing a 2-percentage-point gap

between the natural and the actual vacancy rate. Moreover, if developers believe that the faster growth in employment and office use is likely to continue, they may now prefer a 9 percent vacancy rate in order to maintain the year and a half's supply of space. This scenario would produce a 5-percentage-point gap between the actual and the natural vacancy rate. A similar gap in the other direction could occur with an unexpected decline in the growth of office employment and office use. Over time, of course, developers will act to eliminate the gap.

**Rents Respond to Changes in the Gap.** In response to such gaps between the natural and the actual vacancy rate, rents should change, increasing when the actual rate falls below the natural rate and decreasing when the opposite occurs. It is difficult to measure the extent to which rents in commercial office markets react to these gaps, because the rental rate for office space is not a publicly quoted price but rather is set by individual leases.<sup>10</sup> Despite this difficulty, at least three studies, each using a different measure of rent, have found that a gap between the actual and desired vacancy rate does translate into an adjustment in rental rates. One study of national office markets found a 2.3 percent change in average rents for each percentage-point deviation of the actual vacancy rate from the natural rate.<sup>11</sup> In a market like center-city Philadelphia, where the

<sup>10</sup>Rents are set by lease agreements that normally last for five to 15 years. These leases may contain concessions and special provisions, such as one year of free rent, an allowance for moving costs, or specific terms for increasing the rental rate over time. There are surveys of average rental rates, but these are generally quoted rates and do not reflect the special features in lease agreements. In the following discussion, changes in rents refer to changes in real rents, or rents adjusted for inflation.

<sup>11</sup>See William C. Wheaton and Raymond G. Torto, "Vacancy Rates and the Future of Office Rents," *AREUEA Journal* 16 (1988) pp. 430-36.

## Estimates of Natural Vacancy Rates

Wheaton and Torto, in "Vacancy Rates and the Future of Office Rents" (*AREUEA Journal*, 1988), estimated that the nation's average natural vacancy rate was about 7 percent in 1968 and rose to almost 13 percent in 1986. They used data from the Building Owners and Managers Association and from Coldwell Banker. A number of factors, including increased growth in office-related employment and changes in the tax law, could have accounted for this increase.

Shilling, Sirmans, and Corgel, in "Price Adjustment Process for Rental Office Space" (*Journal of Urban Economics*, 1987), estimated average natural vacancy rates over the 1960-75 period for 17 cities, using data from a survey of vacancy rates and rents done by the Building Owners and Managers Association.<sup>a</sup> The following table shows the resulting estimates:

City	Average Actual Vacancy Rate	Estimated Natural Rate	Average Estimated Gap
Atlanta	5.8	6.3	-0.5
Baltimore	5.9	13.9	-8.0
Chicago	2.9	4.1	-1.2
Cleveland	3.3	2.8	0.5
Denver	8.7	12.3	-3.6
Des Moines	3.3	9.9	-6.6
Detroit	8.0	11.8	-3.8
Indianapolis	6.1	6.5	-0.4
Kansas City	8.9	20.9	-12.0
Minneapolis	3.8	4.5	-0.7
New York	0.5	1.0	-0.5
Philadelphia	7.3	9.5	-2.2
Pittsburgh	5.6	10.0	-4.4
Portland	7.4	16.0	-8.6
San Francisco	2.3	2.9	-0.6
Seattle	8.4	8.4	0.0
Spokane	9.7	10.5	-0.8

Voith and Crone, in "National Vacancy Rates and the Persistence of Shocks in U.S. Office Markets" (*AREUEA Journal*, 1988), constructed estimates of natural vacancy rates for a group of U.S. cities during the 1979-87 period, using data from The Office Network.<sup>b</sup> In this study, the natural vacancy rate for each city was assumed to vary over time. In center-city Philadelphia, for example, the estimated natural vacancy rate ranged from a low of 4.5 percent in December 1980 to a high of 11.0 percent in June 1987 (see figure).

<sup>a</sup>The natural vacancy rates were estimated much the way the natural rate of unemployment is often estimated. Changes in real rents were regressed on actual vacancy rates, and the natural vacancy rate was calculated from the estimated constant term in the regression equation.

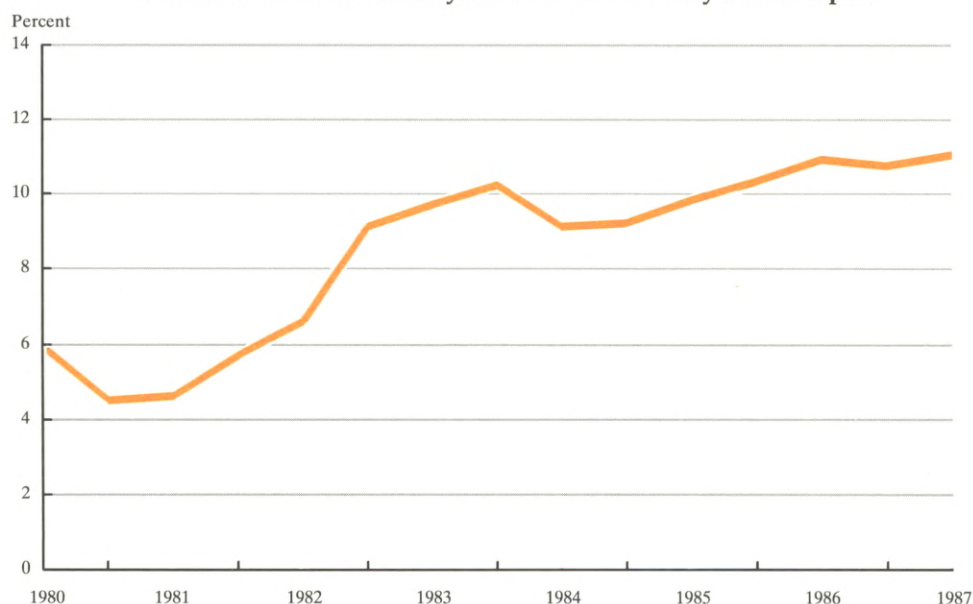
<sup>b</sup>The authors regressed the actual vacancy rates on two sets of dummy variables, one set for the cities and one for the time periods, in a cross-section, time-series model. Because of the lingering effects of shocks to the office market, the error terms for each city were assumed to be serially correlated. The sum of the coefficients on the city-specific dummy and the time dummy represents the natural vacancy rate for any period.



The following table shows the estimated natural vacancy rates for 16 downtown office markets in mid-1987:

City	Actual Vacancy Rate (June 1987)	Estimated Natural Rate (June 1987)	Estimated Gap
Atlanta	19.9	20.3	-0.4
Baltimore	19.0	5.2	13.8
Boston	7.3	6.5	0.8
Chicago	14.4	9.9	4.5
Dallas	25.9	13.1	12.8
Denver	26.5	17.3	9.2
Hartford	11.6	10.9	0.7
Houston	23.9	12.5	11.4
Kansas City	18.9	10.7	8.2
Los Angeles	8.0	8.5	-0.5
Miami	29.8	14.9	14.9
New Orleans	23.3	13.9	9.4
New York	9.3	8.5	0.8
Philadelphia	12.0	11.0	1.0
Pittsburgh	15.6	8.8	6.8
Washington, D.C.	12.1	8.4	3.7

**Estimated Natural Vacancy Rate for Center-City Philadelphia**



average asking price of new office space is about \$34 a square foot, this would imply an increase to almost \$38 a square foot if the actual vacancy rate fell 5 percentage points below the natural rate.

Estimates for individual markets around the country in the 1960s and 1970s show changes in rents ranging from 0.2 percent to 6.3 percent for each percentage-point gap between the actual and the natural vacancy rate.<sup>12</sup> This broad range of estimates may reflect the difficulty in accurately measuring rent changes. But even with no agreement on the degree to which rents adjust, these estimates provide evidence that developers do react quickly to changing market conditions by adjusting their rents, since the rent changes were estimated for the same year in which the gap occurred. Therefore, as quoted vacancy rates change, it is important to determine whether these rate changes are being accompanied by changes in rents. Such price changes will indicate that a gap has developed between the actual and the natural vacancy rate.

The response of office market rents to a gap between the actual and natural vacancy rate is a normal part of the price-adjustment process. Both tenants and developers should react to these price changes in a way that reduces the gap (see *The Adjustment Process*). But who accounts for most of the adjustment? And when should we expect to see results in terms of the vacancy rate?

**The Demand for Office Space Declines Somewhat as Rents Rise.** Demand for new office space is driven primarily by growth in certain types of employment, but this is not the only factor. As rents rise, a given amount of job growth will result in less absorption of new space per worker than would occur when rents were lower. Evidence of this effect is docu-

mented in Kenneth Rosen's study of the San Francisco market. After taking account of the growth in office-related employment, Rosen estimated that a 1 percent increase in real rents led to a 0.18 percent decline in occupied office space. This estimate suggests that office space per worker does respond to changes in real rents, but not radically.

**Construction Responds to Changes in Vacancy Rates and Rents.** Most of the adjustment in office markets seems to depend upon developers, the suppliers of office space. William Wheaton's study of the national market indicated that gaps between the actual and natural vacancy rate and the subsequent changes in rents had a much greater effect on new office construction than on the demand for new space.<sup>13</sup> Specifically, he estimated that a 1-percentage-point decrease in the vacancy rate, and the resulting rise in rents, would decrease demand for new space by 2.5 percent but increase office construction by 6.5 percent. John Hekman found a similar relationship between new construction and changes in rent. In an examination of rents and construction in 14 cities between 1979 and 1983, Hekman estimated that a 1 percent increase in real rents produced an increase of more than 3 percent in the square footage of new office space under construction.<sup>14</sup>

This new space would not typically become available for occupancy for one and a half to two years. Thus, the construction process itself introduces a lag between the time in which the actual vacancy rate begins to diverge from the natural rate and the time in which new space becomes available. It has been estimated that

<sup>13</sup>See Wheaton (1987).

<sup>14</sup>See John S. Hekman, "Rental Price Adjustment and Investment in the Office Market," *AREUEA Journal* 13 (1985) pp. 32-47. Hekman's construction variable is the value of buildings for which permits have been issued divided by the cost per square foot of new construction.

<sup>12</sup>See Rosen (1984) and Shilling, Sirmans, and Corgel (1987).



## The Adjustment Process

The adjustment process in the commercial office market can be illustrated in a set of diagrams of short-run supply and demand. Since it takes time to build office space, the maximum amount of space available for lease (OZ) in any period will be determined by decisions made in the past (see Figure A). No matter how high rents go, the total amount of space cannot be increased very much in the short run. Some of that space (AZ) will represent planned vacancies. (Since OZ is not total space in the market but only that available for lease, it is not the case that AZ/OZ is the vacancy rate.)

Developers will have based their building decisions on the expected demand for office space ( $D^e$ ) and on the rent ( $R$ ) they would have to charge to earn the required rate of return. If actual demand ( $D^a$ ) turns out to be greater than expected demand, developers will be willing to lease more space and lower their inventories, but only in exchange for higher rents ( $R'$ ). With this shift in demand and higher level of rents, tenants will lease new space equal to OB.

In time, developers will be able to supply more space, and space available for lease in any period will eventually increase from Z to Z' (see Figure B). As vacancies return to their desired level, real rents should also drop ( $R''$ ), resulting in somewhat more space being leased (OB'). Rents may not return to their original level, however, because land, one of the major inputs into office construction, tends to become more expensive as a market grows more rapidly. The increase in construction will provide for the increased demand (OB') and a return to the desired level of vacancies ( $B'Z'$ ), which will be higher than the original level (AZ) because of the more active leasing market.

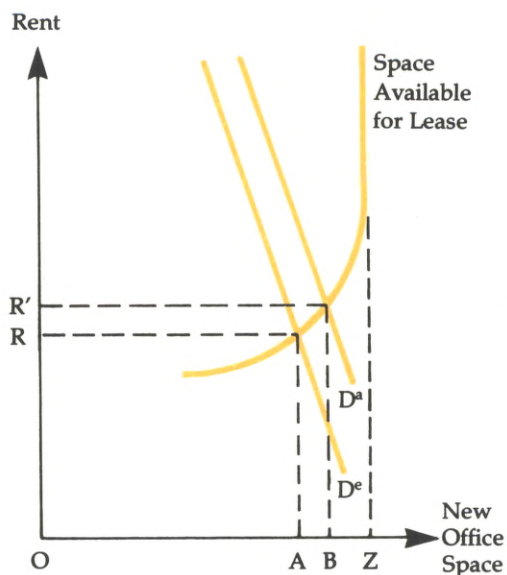
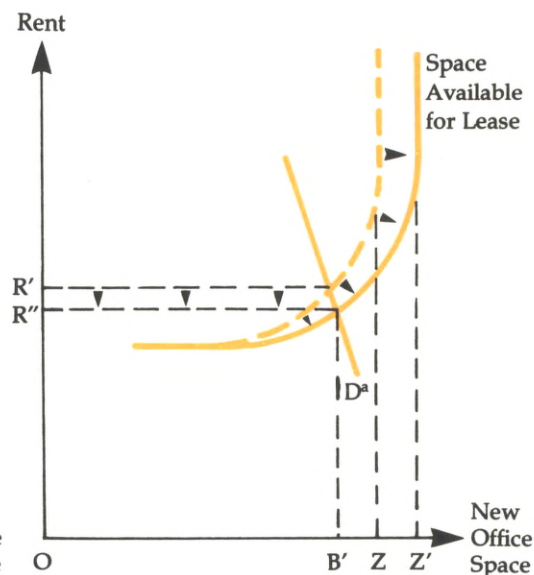


FIGURE A



when some unexpected event causes the actual vacancy rate to deviate from the natural rate, it takes most markets almost a year to return half way to the natural rate.<sup>15</sup> Because of these lags it can appear to someone focusing only on the vacancy rate that developers are not reacting quickly to changing circumstances, such as a drop in demand for new space. But developers may have already begun to react by lowering their rents and by slowing the pace at which new projects are begun, even though projects already under construction will still be completed.

### INTERPRETING INFORMATION ON COMMERCIAL OFFICE MARKETS

The notion of a natural vacancy rate brings a new perspective to the interpretation of office market statistics. First, it is clear that the natural rate can vary considerably from city to city. A city can have a vacancy rate consistently higher than the national average without having unplanned vacancies or unplanned inventory. Moreover, the vacancy rate alone is an inadequate measure of whether an office

market is overbuilt. It is also important to look at changes in rents to see whether the supply of available space is greater or less than what developers had planned. Changes in rents are also the first evidence that an adjustment is taking place in the local office market to bring supply and demand into balance. Other signs of adjustment, such as a change in the amount of new space coming on the market or a turnaround in the vacancy rate, can take time because of the lags in the construction process itself.

Much progress has been made in understanding how commercial office markets function, but many aspects of these markets still need to be explored. Better measures of the real cost of office space would help. Estimates of natural vacancy rates need to be tied more closely to expectations of future demand for new space and to the costs of holding inventory. Projections of future office needs could be greatly improved. For example, little attention has been paid to how demand for new space is affected by the need to replace or renovate older office space. But while recent research has not answered all of the questions about office markets, it has taught us to look beyond the simple vacancy rate and to read office market indicators with more care.

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<sup>15</sup>See Voith and Crone (1988).



# Owners Versus Managers: Who Controls the Bank?

Loretta J. Mester\*

*"Let's remember when we talk about hostile takeovers, the hostility is between the managements of the two organizations, not between the shareholders of either. In fact, the problem that exists is that too often, in my judgment, the managements try to protect themselves from, in effect, their own shareholders, who are essentially their bosses."*

Alan Greenspan, Chairman of the Federal Reserve Board, testifying before the Senate Banking Committee in February 1988 on Bank of New York's hostile-takeover bid for Irving Bank.

On October 5, 1988, Bank of New York's year-long struggle to take over Irving Bank Corporation ended when Irving announced it would accept BONY's tender offer. While not

the first hostile takeover in the banking industry, the BONY-Irving transaction is the largest the industry has experienced to date. Although Irving claimed during the battle that such hostile takeovers would "promote serious instability in the industry," the Federal Reserve has taken the position that it will treat hostile bids no differently from friendly bids in assessing whether or not to permit a takeover.

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Why do some managers, as Chairman Greenspan stated, try to “protect themselves” from their own shareholders? If managers are hired to act on behalf of the stockholders, the firm’s owners, then why wouldn’t the goals of both always be aligned? Or if managers were inclined to act on their own behalf and not on the owners’ behalf, why wouldn’t the market ensure the replacement of such managers and so deter any self-serving actions?

The agency theory of the firm can be used to analyze the relationship between a firm’s owners and managers. It asks whether there are sufficient mechanisms in place that will induce managers to take actions in the best interests of owners, or whether managers will be able to act in their own interests at the expense of owners. If agency problems exist, are there ways in which owners can control managers?

The conventional theory of the firm makes no distinction between the managers of a firm and its owners: the firm is treated as a single entity that acts to maximize its stock market value (and so its long-run economic profits). But this view applies only to small firms that are tightly run by entrepreneurial owners willing to take risks. Many firms today, including banks, are complex organizations. More banks are members of holding companies, holding a larger percentage of assets than ever before.<sup>1</sup>

At the same time, ownership of the bank is becoming more dispersed—that is, most shareholders own only a small fraction of the bank’s shares. In today’s larger, more complex banking corporation, decisions are made not by a single individual but by officers and directors, who do not, without inducement, have the same goals as the stockholders. Because out-

side directors on the bank’s board have no managerial responsibilities, their goals are less likely to differ from those of the stockholders they represent. But inside directors are managers whose goals do differ from bank owners. And more control in the hands of inside directors means more chance of conflict, or so-called agency problems.

Recent empirical studies of the banking industry indicate that agency problems do exist. Agency theory suggests certain prescriptions that would help minimize the conflict between bank managers and bank stockholders. These prescriptions include the Fed’s position on treating hostile takeovers no differently from friendly takeovers.

## THE OWNER-MANAGER RELATIONSHIP IS A PRINCIPAL-AGENT ONE

The relationship between bank owners and bank managers is just one example of a principal-agent relationship. A principal delegates an agent to take some action on his behalf, often because the agent is an expert. A person who hires a real estate agent to sell his house, a performer who hires an agent to find her interesting acting roles, or a litigant who hires an attorney to try his case in court are all principals who are hiring agents. In fact, the word “attorney” means agent. (See the Bibliography for several excellent articles on agency theory.)

Several principal-agent relationships are found in banks. The bank acts as an agent for its depositors: when depositors place their money in a bank account rather than investing directly in firms, they are delegating to the bank the responsibility of monitoring the performance of each firm to which the bank lends depositors’ money.<sup>2</sup> Borrowers are also agents for the

<sup>1</sup>In 1987, 68.3 percent of commercial banks were in bank holding companies (BHCs), holding 91.9 percent of the industry’s assets. This is a substantial increase from 1977, when 26.5 percent of banks were in BHCs, holding 68.2 percent of the assets.

<sup>2</sup>Mitchell Berlin discusses the role of the bank as a delegated monitor in “Bank Loans and Marketable Securities: How Do Financial Contracts Control Borrowing Firms?” this *Business Review* (July/August 1987) pp. 9-18.



bank: typically, the firm selects the projects it will develop with the money it has borrowed. But banks can also be thought of as agents for borrowers, since the bank works on the firm's behalf in obtaining funding for the firm's project. Finally, as in other kinds of firms, the managers of the bank act as agents for the bank's owners, making decisions about the bank's everyday operations.

Because the agent can be a specialist, there are efficiency gains in the principal-agent relationship. Rather than doing some job for himself, the principal is better off hiring an agent who is an expert in the field. However, these gains must be weighed against the problems that arise in the principal-agent relationship. Problems can arise if the goals of the agent differ from the goals of the principal, and if the agent and principal have different information relevant for the decisions the agent is supposed to make on behalf of the principal. Both conditions must be present for there to be a problem. Suppose, for instance, that the agent had the same goals as the principal. In this case there would be no problem—the agent, in working on his own behalf, would also be doing what the principal wants.

But the goals of the principal and agent are not always aligned. For example, an attorney who is paid a flat fee regardless of the outcome of a case might not put forth her best effort to win on the litigant's behalf. Of course, if the litigant could see how hard the attorney was working and knew enough law to determine whether the attorney was pursuing the best strategy to win, then the litigant could fire the attorney for shirking. Knowing this, the attorney would be compelled to work hard in order to get paid. But typically the principal is ignorant of some relevant information—the litigant can't tell how hard the attorney is working and, even if he could, he doesn't know enough law to determine whether the attorney is doing the best possible job. (If the litigant knew enough law, he wouldn't have to hire the attorney.)

The benefits in the principal-agent relationship derive from the specialized knowledge of the agent. But the fact that the principal and agent have different information causes a problem if the two have different goals. One way to solve the problem is to bring the aims of the agent in line with the aims of the principal. For example, if instead of paying the attorney a flat fee, the litigant paid a fee contingent on the outcome of the case, then the attorney would have the incentive to try her best to win. (Many contracts between attorneys and their clients are written this way.)

The two conditions necessary for a principal-agent conflict—divergent goals and different information—are present in the owner-manager relationship. The owners of widely held firms want to maximize their firm's market value. Typically, these owners hold a portfolio of stock in many firms. If their portfolios are well diversified, they won't be concerned about the riskiness of any one firm.<sup>3</sup> Managers, however, have their own goals that may not coincide with value maximization. Managers want to maximize their own welfare, which may mean diverting some of the firm's resources for their own use. For example, managers may want to spend money on perquisites like large staffs and expensive offices—so-called expense preference behavior.

In addition, managers of large firms are often paid more than managers of small firms. While this could be related to the greater difficulty of managing a large firm, it also gives a manager the incentive to maximize the firm's size rather than its value. For example, a loan officer's compensation might be tied to the number of loans he makes, not to their quality

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<sup>3</sup>In fact, if the owners of a firm that is leveraged can declare bankruptcy and have limited liability, they may want to take on more risk. The owners would benefit from a risky action if it paid off, but could declare bankruptcy and avoid the full cost of the action if it didn't.



and so not to the value produced by his portfolio. The manager of a large firm may also find that he has better employment opportunities than the manager of a small firm—another incentive to maximize size rather than value.

Unlike diversified shareholders of widely held firms, managers will be concerned about the riskiness of the firm. The manager may have developed skills and studied techniques that can't easily be used in another firm. If so, then if the firm goes bankrupt, the manager would suffer a high cost by losing his job. Since a manager can't be diversified like the firm's owners can be (that is, he can't hold a portfolio of employers), he may take on less than the value-maximizing amount of risk.<sup>4</sup>

Just as in the litigant-attorney relationship, it is difficult for the firm's owners to see all the actions the manager takes on their behalf. And even if owners see the actions, it is difficult for them to know if these actions are proper for the situation, since managers know more about the firm than the owners. (Recall that one reason to hire a manager is for his expertise.) Therefore, unless controlled, managers will not always act to maximize the wealth of shareholders. Managers will divert resources for their own use to provide themselves with perks and will act too conservatively in order to avoid the risk of unemployment.

**Owners Versus Managers in Banks.** These same issues characterize the owner-management relationship in today's large, complex

banking organization. But the conflicts between owners and managers can also explain why small banks often act in a very risk-averse manner. In these small banks, the owners are the managers. They can be thought of as owners who also manage their bank, but it's better to view them as managers who also own the bank. That is, their interests are closer to those of a typical manager than to those of shareholders in a widely held firm. Owner-managers in small banks often have a taste for managing and therefore try to act in a manner that would preserve their positions as bank managers. This would include acting very conservatively—maintaining high capital-to-asset ratios, for example—in order to avoid bankruptcy.<sup>5</sup>

Banking is a regulated industry, and the regulators want to ensure its safety and soundness. Thus, it might seem that regulators would prefer the objectives of managers, since managers prefer less risk. However, regulators also want to ensure an efficient banking industry. They don't want to support bad managers who divert bank resources for their personal use. To the extent that the goals of managers and owners can be aligned, bad management would be weeded out and the industry would become more efficient. Regulations already in place, such as risk-based capital requirements, can help control risk-taking in banking.<sup>6</sup>

The fact that banks are regulated adds another place for the conflict between owners and managers to emerge. Periodically, banks must report their balance sheet information to regulators. Shareholders of the bank have an incentive for *downward window dressing*, that is, tak-

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<sup>4</sup>However, there are reasons why managers might take on more risk than the shareholders would like. For example, a manager who directs a risky project that turns out to be successful may increase his attractiveness to other firms. See Stiglitz [6]. Also, if the firm is near bankruptcy, a manager has nothing to lose by taking on a very risky project in an attempt to keep the firm solvent and retain his job. So he has the same incentives as stockholders in leveraged firms that are near bankruptcy. See Eric Rasmussen, "Mutual Banks and Stock Banks," *Journal of Law and Economics* 31 (October 1988) pp. 395-421.

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<sup>5</sup>For example, in 1987, the capital-to-asset ratio of banks with assets of at most \$100 million was 11.64 percent, while that of banks with assets of over \$1 billion was 8.15 percent.

<sup>6</sup>But some regulations, such as flat-rate deposit insurance, exacerbate the conflict between bank managers and stockholders over the optimal level of risk-taking.



ing actions at the end of a reporting period that allow the bank to report lower values for assets and liabilities than their average values over the reporting period. Downward window dressing reduces the cost of meeting capital requirements, lowers the cost of deposit insurance (which is based on the bank's reported liabilities), and may reduce the cost of capital to the bank by raising the bank's apparent capital adequacy ratio and thereby making the bank look safer. So, downward window dressing raises the value of the bank, which is the aim of shareholders.

Managers, on the other hand, have an incentive for *upward window dressing*, since their compensation is often tied to the size of the bank. Also, since upward window dressing reduces the reported capital adequacy ratio, regulators may then require a capital infusion into the bank that would lower the chance of bankruptcy and the risk of managers losing their jobs.<sup>7</sup> Thus, in regulated firms like banks, the direction of window dressing, expenditures on perks, and risk-taking behavior are three areas where the conflict between owners and managers may appear.

## WHAT CONTROLS THE BEHAVIOR OF MANAGERS?

While managers and owners have divergent goals, it is not clear that managers can pursue their own goals at the expense of owners. There are some controls that limit the ability of managers to follow the beat of their own drummer. These controls fall into two groups: labor market controls and capital market controls.

**Labor Market Controls.** Managers want to act in their own best interests; however, if their interests can be made to coincide with those of stockholders, then by acting for themselves they will be acting for stockholders. For example, if a manager's compensation is tied to

the value of the firm's stock, then she will want to act to raise the value of the stock—which is what the owners want. But even though more corporations are including stock in managerial compensation packages, bank size rather than performance still appears to be the largest determinant of pay scales in the banking industry.<sup>8,9</sup> Perhaps a better incentive for a manager is her reputation. Managers with good reputations will have an easier time finding other jobs, if they need to, and will have better employment opportunities than managers with poor reputations.

**Capital Market Controls.**<sup>10</sup> Other controls on the behavior of managers work through the capital markets. One potential control on managers is the stockholders' meeting. However, these meetings are rarely effective since they are usually controlled by management. Also, stockholders who are well diversified usually don't bother to attend the meetings and vote since they don't have very much of their wealth tied up in any one firm. Good management is what economists call a public good—all the stockholders benefit from good management, but no individual stockholder

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<sup>8</sup>This was reported by J. Richard Fredericks and Jackie Arata in *Montgomery Securities Annual Banking Industry Compensation Review*, May 5, 1987. In studying compensation at 33 banks in 1985 and 1986, they found no correlation between the compensation of the top five highest-paid employees and the performance of the bank.

<sup>9</sup>Joseph Stiglitz [5] observes that most stock-option plans were instituted not so that managers would bear more risk, but as supplements to their salaries. Thus, the incentive effects of these plans are questionable. However, a Bank Administration Institute survey of 839 banks with assets under \$500 million found a positive correlation between bank performance and the presence of an annual bonus program. Of course, it is not clear which came first, the award program or better performance. See W. Frank Kelly, "Bank Performance and CEO Compensation," *Bank Administration* 62 (November 1986) pp. 52-56.

<sup>10</sup>Most of the discussion in this section and the next follows Stiglitz [5] and Jensen [2].

<sup>7</sup>This is discussed in Allen and Saunders [8].



has an incentive to ensure that management is good because the personal gain from doing so is not great enough. Other shareholders can get a “free ride” if one shareholder decides to become an active participant in the stockholder meetings. Large shareholders, however, can exert control on the management—they find it worth their effort—but usually have to be compensated in some way for taking on the risk of not being diversified; for example, they may receive a high fee for being on the board of directors.<sup>11</sup>

One control on the management of nonfinancial corporations involves banks themselves. Like large shareholders, banks have an incentive to monitor the performance of firms to which they have made substantial loans, in order to avoid default. Unlike equity holders, who cannot control their funds once invested, banks have more control of their funds: they set the terms of their loans and can decide not to reinvest in the firms once the loans mature.

The interbank loan market and certificate of deposit (CD) market provide a similar control on banking firms, especially money-center banks, which rely greatly on purchased funds. Federal funds transactions (overnight interbank loans) are not collateralized, so banks that find themselves in trouble (perhaps due to the negligence of management) must pay a premium for such funds. Also, the large, negotiable CDs of large banks trade on a no-name basis. That is, even though CDs differ with respect to the quality of the issuing bank, dealers quote a single price for large-bank CDs and don't specify names when trading them. However, if a bank is in trouble, traders will refuse to trade the bank's CDs on a no-name basis. Once singled out, the bank will have to pay a premium for funds. (Continental Illinois, for example, was dropped from the no-name

list when it ran into trouble in 1982.) In addition to hurting shareholders (by lowering the market value of the bank), these “punishments” have a direct negative impact on managers by hurting their reputations, by reducing the amount available for perquisites, by lowering compensation to the extent it is tied to market performance, and by increasing their chance of unemployment due to bankruptcy.

**The Threat of Takeover Is a Capital Market Control on Managers.** The 1980s have seen a new wave of corporate mergers, acquisitions, and takeovers. The pros and cons of these takeovers are being debated, especially the extensive use of debt financing characteristic of recent takeovers, and the wealth transfers from employees (many of whom lose their jobs) to shareholders of the acquired firm (who gain the takeover premium).

A potential benefit of a well-functioning takeover market is that the threat of a takeover, in which management is usually replaced, can discipline managers to act in the interests of the firm's shareholders. The idea here is that if the firm's market value could be enhanced with better management, then someone could purchase the firm by buying the outstanding shares from the current shareholders. He could then remove the bad management, make the proper decisions to maximize the firm's value, and gain from that increase in value.

For several reasons, however, this takeover threat won't necessarily be effective in controlling management. And even if takeovers are effective in replacing bad management, there are several ways in which managers can avoid this discipline.

For instance, takeovers may not work because of information problems. A firm may be performing poorly because the current management is bad or because the past management was bad. That is, management might be doing the best it can given what it has to work with. Only the insiders of a weak firm know which is the case, and if they hold enough stock

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<sup>11</sup>See Stiglitz [5], p. 144.



in the firm to determine the outcome of any takeover attempt, they'll sell only if the offer is more than the firm is worth. In other words, successful takeovers will be overpriced takeovers, in which case the new stockholder will not gain.

As with the stockholders' meetings, there are free-rider problems associated with takeovers. Suppose takeovers work and eliminate inefficient management; then the shareholders who didn't sell their shares get a free ride and gain from the firm's increased stock price. Each shareholder reasons this way, believing she doesn't have enough stock to affect the success of the takeover attempt. Therefore, it is in her interest to hold onto her shares. If everyone does this, the takeover won't be successful.

Another free-rider problem occurs if it is costly to find badly managed firms, which are good takeover targets. Someone who has expended the resources to find such a firm and then makes a bid thereby announces to other potential bidders that the firm is a good target. The ensuing bidding war drives to zero any expected profits from taking over the firm, so the first bidder who expended the resources to find the target firm earns a negative expected profit, even if he's successful in taking over the firm. Therefore, there is no gain in finding good takeover targets.<sup>12</sup>

While extreme, these cases point out that it is not easy to complete a successful takeover. However, if bidders can find a way to keep some of the gains from a successful takeover for themselves (rather than sharing them with others) they will have an incentive to search out firms with inefficient management and

attempt a takeover.<sup>13</sup> But even if the takeover market would otherwise work smoothly, there are ways in which managers of targeted firms can deter takeovers. By thwarting potential acquirers, these actions help entrench managers who may not be acting in the shareholders' interests.<sup>14</sup>

For example, managers of a targeted firm can swallow a *poison pill*, that is, they can take some action that will make the firm an unattractive candidate for takeover. The action is something that the firm wouldn't do if it were not threatened with a takeover. One poison pill is for the targeted firm itself to take over another firm in order to increase the possibility of antitrust litigation if its potential acquirer succeeds. Other poison pills include financial restructuring of the firm, issuing "poison pill preferred stock" that raises the cost of a takeover, or selling off some assets that attracted the bidder.

In the Bank of New York-Irving fight, Irving's board voted a poison pill that gave shareholders certain rights to buy stock at half price in the event of a hostile merger. They added a "flip in" amendment that allowed the measure even if the hostile investor did not attempt an immediate merger. BONY filed suit against this defense and a state court invalidated it. The decision was appealed and the Appellate Division of the New York Supreme Court upheld it, which led to the takeover's final resolution.

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<sup>13</sup>See Andrei Shleifer and Robert W. Vishny [4].

<sup>14</sup>These defensive tactics may, however, actually improve the takeover market. Eliminating a bidder can help solve the bidding-war free-rider problem discussed above and encourage other firms to study the possibility of taking over the firm. The increased likelihood of more bids may be enough to compensate shareholders for the elimination of a potential acquirer and the costs of discouraging him. See Andrei Shleifer and Robert W. Vishny, "Greenmail, White Knights, and Shareholders' Interest," *Rand Journal of Economics* 17 (Autumn 1986) pp. 293-309.

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<sup>12</sup>Event studies find that in recent takeovers the excess returns to acquired firms are usually positive, while those to acquiring firms are often negative or zero. See Robert Schweitzer, "How Do Stock Returns React to Special Events?" in a forthcoming issue of this *Business Review*.



Another way a firm can prevent a takeover involves *greenmail*. The payment of greenmail refers to a targeted stock-repurchase plan in which managers repurchase the stock of a subgroup of shareholders at a premium over the market price. Greenmail can be used to avert a takeover—if offered enough, the potential acquirer will sell the shares it has accumulated back to management. Usually, the potential acquirer also signs an agreement prohibiting the purchase of any of the firm's stock for a period of time, sometimes as long as five years.

Like greenmail, *golden parachutes* can be used to deter takeovers by raising their cost. A golden parachute is a large severance payment made to top managers who are replaced after a takeover. By lowering the costs to managers of losing their jobs, the parachutes also hinder the threat of takeover in controlling managers. They may also induce the manager to cave in and sell the firm at too low a price, or even to seek out buyers for the firm. On the other hand, the parachutes may benefit shareholders by facilitating a takeover. If the managers who have to decide whether or not to fight the takeover have golden parachutes, they will be less inclined to fight—and this can benefit shareholders. Also, by lowering the costs to managers of investing in education and training worth little outside the firm, the parachutes may increase the efficiency of managers.

On balance, then, whether golden parachutes are harmful or beneficial to stockholders depends on who receives them and how they are structured. If the parachutes are paid to the managers involved in negotiating the terms of the takeover with a potential acquirer, and if their value is tied to the increase in the firm's market value that may occur after a takeover, then parachutes benefit shareholders. Otherwise, they are probably detrimental to shareholders.

In general, restrictions on the type or number of potential acquirers of a firm make takeovers less likely and limit the ability of the

takeover threat to discipline management. For example, there are two principal ways for a corporation to acquire a commercial bank. It can either acquire a controlling interest in the bank's stock or it can merge with the bank. But mergers are prohibited between nonbank corporations and commercial banks, and some states restrict corporate acquisitions of bank stock. Also, banks in states that prohibit branching are less attractive merger partners than are banks in branching states, all else equal, and prohibition of interstate banking eliminates out-of-state banks as potential bidders, making takeovers less likely. Thus, in banking, the threat of takeovers may not ensure that managers work on behalf of their shareholders.<sup>15</sup> However, the recent breakdown of these restrictions—for example, regional interstate banking pacts—suggests that the takeover threat should become more effective in the future.

## HOW EFFECTIVE ARE THE CONTROL MECHANISMS IN THE FINANCIAL SERVICES INDUSTRY?

Although there are many potential mechanisms for ensuring that managers act on behalf of stockholders, these controls are imperfect and costly. Just how well do these controls work in the financial services industry? Are managers able to pursue their own goals at the stockholders' expense, or are they disciplined to act in a way that maximizes the value of the firm? Empirical studies suggest that there are agency problems in financial firms: managers are able to pursue their own interests and do not always act in an efficient, value-maximizing manner. (The Bibliography includes references to the studies discussed below.)

Several studies of the commercial banking industry find evidence that managers spend excessively on perquisites, such as large staffs. That is, they spend more than the profit-maxi-

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<sup>15</sup>This is the focus of Christopher James [11].



mizing amount. Michael Smirlock and William Marshall present evidence that larger banks, whose management is presumably harder to control, exhibit such expense preference behavior. In a study of states that limit the acquisition market for banks by limiting the amount of bank stock a corporation can own, Christopher James finds that bank managers in these states spend more on perquisites than do managers of banks in states that permit corporate holdings of bank stock. This is evidence that takeovers can discipline managers.<sup>16</sup>

In a study last year, the author investigated the savings and loan industry for evidence of expense preference behavior. Savings and loans are organized either as stock-issuing institutions or as mutual institutions. Although the owners of a mutual S&L are, in theory, its depositors, these owners have virtually no control over management. Thus, managers of mutual S&Ls should be more able to follow their own pursuits than managers of stock S&Ls. The author's study finds that the mutual S&Ls are operating with an inefficient mix of inputs and outputs. While this could be due to the impact of regulations and to the fact that mutual S&Ls are not able to issue stock in order to expand, it is more likely evidence that managers are consuming some of the firm's resources as perquisites.

In addition to spending excessively on perquisites, managers have the incentive to act more conservatively than shareholders would like and to engage in upward window dressing. Anthony Saunders, Elizabeth Strock, and Nickolaos G. Travlos find evidence that banks with diffuse ownership—that is, no one shareholder holds a large number of shares—are

more conservative than other banks whose shareholders can be expected to exert more influence on the decisions of managers. Linda Allen and Anthony Saunders find evidence of upward window dressing in banks located in states with takeover barriers and in banks whose managers have no large equity holdings.

To sum up these studies, in cases where the agency theory predicts that managers of financial firms will work on their own behalf rather than on the shareholders' behalf, there is evidence that they do so.

## **PRESCRIPTIONS TO REMEDY AGENCY PROBLEMS**

There is evidence that managers of financial firms are able to pursue their own interests rather than the interests of shareholders. The agency theory of the firm suggests several ways in which the goals of managers and shareholders could be better aligned, which would lead to higher efficiency and help resolve agency problems.

Bank managers and directors could be encouraged to own stock in the companies they manage. In this way, they would directly benefit from the decisions they make that increase the market value of the bank. Since outside directors' goals are more coincident with shareholders', increasing the power of outside directors to remove managers could induce better behavior by managers. But this may not have much effect if it is difficult to find directors with enough knowledge to determine whether the management should be replaced. Finally, decreasing the barriers to takeovers—including state prohibitions on corporate acquisition of commercial bank stock, laws prohibiting interstate banking and branching, and laws restricting hostile takeovers—will increase the effectiveness of the takeover threat as a device to control managers; so will the Federal Reserve's position to treat hostile takeovers in banking no differently from friendly takeover bids.

<sup>16</sup>However, the methodology of the studies by Smirlock and Marshall and by James, as well as that of earlier banking studies, is critiqued in Loretta J. Mester, "A Testing Strategy for Expense Preference Behavior," Working Paper 88-13/R, Federal Reserve Bank of Philadelphia, December 1988.

Some argue that today's takeovers are too often funded by high-risk junk bonds or other sources of debt that can lead to macroeconomic instability by increasing the number of bankruptcies when a recession hits.<sup>17</sup> And there is evidence that while shareholders of the target firm gain in a takeover, their gain is at the expense of employees who lose their jobs or are forced to take wage cuts.<sup>18</sup> Clearly, not all

takeovers are in the best interests of society. However, it should be remembered that an actual takeover is not necessary to induce managers to act efficiently—the *threat* of a takeover is what is needed. If restrictions on takeovers are reduced, making the possibility of a takeover a real threat to inefficient managers, these managers will be induced to maximize the value of their firms. Easing restrictions on takeovers could actually lead to a reduction in the number of acquisitions by reducing the number of inefficiently managed firms, which are among the prime takeover targets.

<sup>17</sup>See F.M. Scherer, "Corporate Takeovers: The Efficiency Arguments," *Journal of Economic Perspectives* 2 (Winter 1988) pp. 69-82.

<sup>18</sup>See Shleifer and Vishny [4].

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[2] Michael C. Jensen, "Takeovers: Their Causes and Consequences," *The Journal of Economic Perspectives* 2 (Winter 1988) pp. 21-48. An excellent overview of the takeover as a capital market control on managers, this article discusses such potential takeover deterrents as greenmail and golden parachutes.

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