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What Every Loan Officer Needs to Know about the Year 2000 Computer Problem (But Doesn't Know How to Ask)

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The purpose of this article is to explain the nature of the Year 2000 problem and the dangers it can create for different organizations. The authors discuss the types of risk that emanate from these system problems and propose a process by which a bank's loan department may establish policies to assess and mitigate credit risk resulting from Year 2000 issues.

Small Business Credit Markets: Why do we know so little about them?

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This study discusses the characteristics of firms, lenders, loans, and financial markets that can affect the availability, quantity, and price of credit to a small business. These are the characteristics on which researchers need data in order to test hypotheses about small business credit markets and, in particular, about the two central issues the author focuses on: To what extent do relationships with lenders affect the credit conditions faced by small businesses, and how will bank consolidation affect credit availability to smaller business borrowers.

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This regular feature of the *FDIC Banking Review* contains information on regulatory agency actions, state legislation and regulation, and articles and studies pertinent to banking and deposit insurance issues.

What Every Loan Officer Needs to Know about the Year 2000 Computer Problem (But Doesn't Know How to Ask)

by Jay Golter and Paloma Hawry*

On May 5, 1997, the Federal Financial Institutions Examination Council (FFIEC) issued an inter-agency statement about the Year 2000 problem, giving guidance on what financial institutions need to do to assure that they do not suffer serious computer-system failures related to the change of century on New Year's Day 2000.¹ One section of the statement specifically addressed the potential credit risks that could arise from a borrower's inability to manage its own Year 2000 compliance efforts successfully:

"Financial institutions should develop processes to periodically assess large corporate customer Year 2000 efforts and may consider writing Year 2000 compliance into their loan documentation. Loan and credit review officers should consider in their credit analysis of large corporate customers whether the borrower's Year 2000 conversion efforts are sufficient to avoid significant disruptions to operations." (FFIEC (1997), 4.)

Moreover, the FFIEC anticipates issuing further guidance on Year 2000 issues, including those related to credit risk. Analyzing the scope of any firm's Year 2000 challenges is difficult for professional systems consultants, let alone for the typical loan review officer, who has a limited understanding of computer programming and systems integration and might feel ill-equipped to conduct the type of analysis called for in the inter-agency statement. The purpose of this article is to explain the nature of the Year 2000 problem and the dangers it can create for different organizations. The article discusses the types of risk that emanate from these system problems and proposes a process by

which a bank's loan department may establish policies to assess and mitigate credit risk resulting from Year 2000 issues. A list of reference materials is also included.

ORIGIN AND NATURE OF THE PROBLEM

In the Stanley Kubrick science fiction movie *2001: A Space Odyssey*, the computerized system operating a manned spacecraft has to be disconnected when it turns against the crew. One year earlier than predicted by the movie's title, many businesses may also find that their computers have turned against them, as many systems on which people depend cease to operate correctly. The problem lies in the inability of some computers to interpret correctly dates in which the year does not begin with 19—and failure to correct the problem before the immutable deadline could have dire results for any firm. In fact, many computer industry experts believe that unless firms have already made significant progress fixing the problem it is now too late for some of them to survive.²

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¹The authors' opinions, interpretations and representations regarding the FFIEC and its statements and policies, including the May 5 statement, are not to be relied on as FFIEC policy. The sole source of FFIEC policy is the FFIEC.

²For example, see Peter de Jager's remarks in Levy and Hafner (1997).

The origin of the problem is that early computer programmers had to work around the constraints imposed by limits on the size of computer memory and by the expense of storing data. One useful technique was to represent dates with an implied century. For example, a date field holding the value “01/01/56” meant “January 1, 1956” and not “1856” or “2056.” Use of this convention reduced the amount of storage required and improved the computer’s processing speed. Date fields were expanded only when necessary. For example, a mortgage system might have four-digit years for “maturity date” but two-digit years for “opening date,” “last payment date,” “next mailing date,” and so forth. The convention of representing years with two digits was also used when some components of systems with calendar functions (for example, the timer on a security system) were hard-coded.

Computer systems often use dates to determine how long something has existed (for example, to see whether it is time to perform scheduled maintenance in a manufacturing plant) and this determination is made by subtracting the earlier date from the current one. A system that orders a replacement part every five years, might record that a part was last being installed on June 1, 1992; on June 1, 1997 the system would calculate that “97/06/01” – “92/06/01” represented five years and that the part needed replacing. However, in the Year 2000, the system might conclude that the part is -97 years old (“00/01/01” – “97/06/01” = -97 1/2 years). How the computer would then proceed would depend on how the programming instructions had been written. Some systems might recognize the calculated age as being invalid and might generate a report listing such occurrences for further investigation. Other systems might leave the replacement parts unordered since they would never reach a calculated age of five years.

To the extent that the eventual consequences of using date shortcuts were contemplated during the 1960s and 1970s, it was believed that the underlying programs would be replaced well before the century changed and that if they were not, that there would be plenty of time to correct the problem. Even some programs written recently may contain some elements that will malfunction in date calculations after Year 2000. Now that the century is drawing to a close, however, the time left in which to correct this problem is rapidly shrinking.

The actual amount of time required to modify a system that has a century date problem can vary significantly depending on a number of factors. These include the age of the systems in operation; the num-

ber of systems in operation; the number of programs and lines of code in all systems; the number of computer languages in which programs are written (and the availability of programmers with skills in those languages); the quality of the system maintenance that has been performed (in particular, the extent to which documentation explains the purposes of each computer instruction); the extent to which electronic data are exchanged with other parties; and the degree to which the organization depends on equipment with embedded microchips that may not function properly in the next century. And what makes Year 2000 remediation programs particularly challenging is the need to (1) find *all* of the places where date problems might lead a program to miscalculate or terminate; (2) coordinate the repairs of all parts of the overall system so that no one repair interferes with the operations of other parts of the system; (3) test the repair by using data that accurately mimic the processing that will occur in the next decade; and (4) complete the project without any time extensions being granted.

Six Concentric Circles of Risk

To assess each bank’s credit-risk exposure to Year 2000 problems, it is necessary to understand the operational risks that Year 2000 creates for a bank’s borrowers.³ These risks are like ripples in a pond, moving outward from the center of the firm’s operations. The central risk lies in the firm’s computer systems that handle core applications. These functions traditionally were housed on mainframe systems, but recent developments in data processing have moved much of this activity onto other platforms. The second circle of risk encompasses networks and PCs that may be important in the day-to-day operation of a firm. The third circle of risk involves exchanges of data with third parties. The fourth represents equipment built around microprocessors that operate with internal calendars. Extending outside the company, the fifth circle is composed of business partners—those organizations that provide essential services or are key customers of the firm. Finally, the sixth circle of risk is represented by the macroeconomy which may be adversely affected by the disruptions that result from efforts to adjust to the uncertainties posed by this unprecedented challenge and from the failures of some to prepare successfully for the date change.

³This section is abstracted from the authors’ unpublished manuscript, “Circles of Risk,” which provides much greater detail about the areas that organizations need to address in their Year 2000 remediation projects. Readers can obtain copies by sending an e-mail message to: jgolter@fdic.gov, or to PHawry@Compuserve.com, or by calling 202-898-3924.

First Circle: Core Application Systems

In most large organizations, computer systems perform critical functions, including payroll, inventory management, accounting, accounts payable and receivable processing, and scheduling (of staff, production, or deliveries). The software used to run each of these processes may have been developed by an in-house programming staff or purchased off the shelf from a software firm, or it may represent a combination of off-the-shelf products and custom-developed applications.

If operations are to continue unaffected by the date change, many elements of a firm's core system need to be scrutinized, and either modified and tested or replaced. This process must be conducted on all important components of the system in a coordinated fashion so that the replacement of one part with a century-compliant version does not interfere with the functioning of another part with which it interfaces.

The important components include the system's hardware, its operating system software, and its application software (for example, the general ledger system). If any of these components is incapable of properly handling dates in the 21st century, it will probably have to be replaced with a newer, Year 2000-compatible version, but the upgrading of one component may require the upgrading of other components as well.

Programs will have to be examined line by line to look for places in which dates are used. Date-sensitive functions must be analyzed to verify that they will perform properly when dates from the 21st century are used. Every modification must be tested to ensure that the change does not inadvertently affect either another part of the program or one or more other programs on the system. The difficulty and cost of converting in-house applications will depend partly on how well those systems are documented.⁴

Second Circle: Networks, Workstations, PCs

The search for an institution's vulnerability to Year 2000 problems moves outward from the mainframe system to other data processing systems. Although the core functions of larger organizations usually reside on a mainframe computer, many important tasks may be performed on a network system, on a workstation, or on a stand-alone PC. A firm might be able to function without these systems for an extended period of time, but doing so would cause a great deal of disruption and inconvenience. Thus, part of a Year 2000 compliance

plan should include testing a network's hardware, software, and central data.

Third Circle: Third-Party Data Exchanges

The next circle of vulnerability involves exchanges of data with other entities. Even though an institution may have corrected all of its own data-processing systems, it may still be vulnerable if it is not prepared to read accurately the data it receives from other sources. One of the ways in which automation has developed over the years is by increasing the use of systems that exchange data between organizations. An example is Electronic Data Interchange (EDI) systems, in which a major customer and all of its suppliers exchange important data—from initiation of orders through invoicing and payment—without manual intervention. This development complicates the Year 2000 compliance process because all of the parties must agree on how the data will be modified. As each side of the data stream modifies and updates its data systems, it is important to coordinate and test the results with the counter-party.

Fourth Circle: Plant and Equipment

Although data-processing systems create the key areas of risk for many organizations, other places may also make an organization vulnerable to Year 2000 problems. Many important pieces of equipment, including telephone switchboards, security systems, HVAC, and elevators, may operate with embedded microprocessors that employ calendar functions and it is not always obvious that a particular piece of machinery has date functions incorporated in it. These must be tested to determine how they will behave when the century changes.

The potential failure of embedded microprocessors could expose some organizations to risks even greater than the ones faced from a malfunctioning data-processing system. Some manufacturing processes may rely on control systems that receive time-stamped data from sensors, compare the changes over time between readings, and either signal an operator that some procedure should begin or automatically make some adjustments to the process. If such control units incorrectly determine the sequence in which readings have occurred or incorrectly calculate the time between readings, they may fail to perform properly. The failure could disrupt the manufacturing process and

⁴"Documentation" refers to the text descriptions in clear English of the purpose and logic behind each section of computer code.

adversely affect a firm's ability to generate revenue. To determine in advance which machinery will be impaired, it is necessary to know how it was designed, and what the capabilities of the embedded microprocessors are.⁵

Fifth Circle: Business Partners

The next circle of vulnerability is located outside of the firm itself. All business organizations depend on suppliers to provide essential goods and services. If any of these suppliers has difficulty providing service, the organization's own operations could be adversely affected. Therefore, it is important for all firms to perform due diligence on their important suppliers to make sure that each has adequately addressed Year 2000 issues. Similarly, when a firm makes business planning and trade credit decisions, it should look at the vulnerability of its customers.

Sixth Circle: Macroeconomic Repercussions

The final circle of risk to which an organization is exposed because of date-change problems involves the economy as a whole. This is important to banks because, in general, a poorly performing economy will lead to a deterioration in the quality of a bank's loan portfolio and will therefore require an increase in loan-loss reserves.

The most immediate economic disruption from Year 2000 problems is the large cost that many firms will incur in fixing their systems to prepare for the next decade. This cost includes the opportunity cost of not being able to undertake other investments during the remaining years of the 20th century because of the need to focus resources on Year 2000 conversions.

As firms engage in "prudent" planning for the date change, their not being able to determine with any certainty which goods and services will be available uninterrupted after January 1, 2000, may lead them to build up inventories of raw materials and finished goods. This anticipatory stocking up is like the rush to buy batteries and various staples when a major storm is predicted. In these cases, simply the process of accumulating inventories and then reducing them back to normal, will cause some distortions in the overall level of economic activity.

Finally, economic disruption will be caused by the actual failures of some systems or enterprises. Initially, failures will be caused by the inability of individual organizations to fix critical systems in time. Between now and the Year 2000 some marginal firms may choose not to incur the cost of converting a system and may subsequently go out of business. One analyst predicts that Year 2000 problems will create a 1 percent level of risk that any given Fortune 500 corporation fails, a 3 percent risk of failure for any given small firm (less than 1,000 employees), and a 5 – 7 percent risk for any given mid-size firm (1,000 – 10,000 employees). The analyst notes: "Mid-sized corporations . . . have historically shown a distressing tendency to utilize quite a lot of software, but to be only marginally competent in how they build and maintain the software. . . . There are about 30,000 companies in the 'mid-size' range in the United States, and a 5% to 7% business failure rate would mean that from 1500 to about 2100 companies might close or file for bankruptcy as a result of the year 2000 problem. This is a significant number and it is an open question as to whether the impact of the year 2000 problem is severe enough to trigger a recession."⁶

Another analyst, Dr. Edward Yardeni, Chief Economist at Deutsche Morgan Grenfell, has written extensively about the Year 2000 and its potential effects on the world economy.⁷ Based on his analysis of the remediation efforts to date of the federal government, the electric utility industry, the transportation industry and other components of the economy, Dr. Yardeni has estimated that "there is a 40% chance of a global recession during 2000 as severe as the 1973-74 downturn."⁸

The magnitude of the economic effects of the Year 2000 will be determined by how successfully each firm, each government entity, and each nonprofit organization addresses the problems it faces. As a whole, the banking industry has demonstrated a greater awareness of the problem than most other sectors of society, so bankers are in a good position to inform their customers and other members of the community about the nature and urgency of the problem.

ASSESSING AND MITIGATING RISK IN COMMERCIAL LOAN PORTFOLIOS

The earnings of a lending institution could be significantly reduced if the bank's commercial customers were delinquent or had to default because of Year 2000 problems within their own systems or within the system of their important customers and/or suppliers.

⁵A good source of additional information about Year 2000 risks within embedded technology is the Web site of the (British) Institute of Electrical Engineers (www.iee.org.uk/2000risk/).

⁶Jones (1996), 38.

⁷Dr. Yardeni's various articles on the subject are all available on his Web site at www.yardeni.com/cyber.html.

⁸*The Y2K Reporter* #11, January 5, 1998.

Banks should therefore incorporate analyses of their customers' Year 2000 risks into their loan review process.

When a thorough assessment gives the lender confidence in the borrower's ability to handle its Year 2000 challenges, both parties can benefit. Firms that complete extensive Year 2000 remediation projects will probably find that after the date change, even though they may experience disruptions that impair their cash flows, these disruptions represent manageable, temporary events. Bank loan officers who have been monitoring those remediation projects will be better able to recognize when a firm's problems are temporary and thus when the firm deserves credit extensions.

Managing the risks in a commercial loan portfolio involves setting up a program to evaluate four aspects of each loan. First, if the borrower became delinquent or were to default how seriously would the bank be affected. Second, how seriously could Year 2000 problems affect the borrower. Third, how well is the borrower dealing with these risks. Finally, how can the bank best minimize its exposure to Year 2000 risks. In establishing a program to manage these risks in its commercial loan portfolio a bank may wish to use the following elements as a starting point: planning and strategy, assessment of portfolio risk, customer assessment, tools and procedures, and integration into the existing credit review process.⁹

Initial Planning and Strategy

Senior management at banks should consider developing an approach for addressing the Year 2000 risks within its loan portfolio. The first step in addressing these risks is to develop a strategy. Then plans will have to be developed for implementing the strategy. (Because time is the scarcest resource in all Year 2000 activities, many of the necessary activities may have to be performed simultaneously.) The strategic questions that should be considered include the following:

- Should the bank take a defensive posture at the risk of alienating some long-term customers?
- How will the bank deal with customers who do not appear to be adequately addressing their Year 2000 challenges?

- Should the bank view current and new customers' needs to finance Year 2000 conversion projects as an opportunity to increase lending?
- Under what circumstances will the bank provide additional working capital to a borrower whose cash flows have been disrupted by problems related to the Year 2000?
- How will the bank evaluate the Year 2000 risks within its loan portfolio? How will individual loans be prioritized for Year 2000 assessments?
- How will the bank monitor and track its exposure to Year 2000-related credit-quality risks?
- How much assistance will the bank give to its customers in dealing with their Year 2000 projects?
- Will the bank require that Year 2000 compliance be written into covenants for new and renewing credits?
- What information about a commercial customer's Year 2000 readiness will be communicated to third parties, such as partners in a loan participation, credit bureaus, or other potential lenders?
- How will the commercial loan department's Year 2000 project be integrated with the bank's other Year 2000 projects?
- How much detail will the bank provide to commercial customers and other business partners who, as part of their own due diligence efforts, inquire about the bank's Year 2000 readiness?

Personnel from several areas of the bank will need to be involved in the early planning phases. The board of directors should approve the final action plan, oversee its implementation, and ensure that adequate resources are provided. Senior management needs to sponsor and develop the strategic plan and be responsible for ensuring its successful implementation. Commercial loan officers will communicate the bank's policies to its customers. They will also obtain the information that will be used to assess the customers' Year 2000 readiness. The loan assessments will be incorporated into the credit approval and loan review process. The Loan Review and Credit Departments will need to develop the procedures by which Year 2000 Review Department will also want to help plan for the prioritizing of credits in the loan portfolio for risk analysis. The legal staff (or outside counsel) and the Risk Management Committee will need to review the loan agreements to determine whether additional

⁹This article does not attempt to provide an exhaustive list of all the programs a bank may undertake to manage the Year 2000 risks in its loan portfolio. Each bank will need to develop a program that is appropriate for the unique Year 2000 characteristics of its customers.

language or covenants should be added to cover Year 2000 concerns.

The Data Processing Department may be asked to describe its Year 2000 project to the other parties mentioned above, to help them understand the scope and complexity of some of the issues borrowers will be facing and to give the loan officers a better understanding of the information the customers will provide. In some cases it may prove useful for data-processing personnel to accompany loan officers to meetings with customers about Year 2000 issues. Other internal parties that may also be involved in developing and implementing a risk management project include Cash Management, Corporate Trust, Audit and Marketing.

At the end of the initial planning process, a written program that describes not only policies and procedures but also each division's role in implementing the plan should be presented to the board of directors for approval.

Assessment of Portfolio Risk

After completing the initial planning, commercial banks will need to develop a process for evaluating the nature and scope of the Year 2000 risks in their loan portfolios. They will also need to establish priorities for mitigating those risks. Each loan portfolio is unique and contains a different mix of industries, loan structures, collateral, and loan sizes. Moreover, some commercial customers have sophisticated in-house systems and maintain direct control over the majority of Year 2000-affected processes, whereas others are highly dependent on the technology of third parties, such as suppliers or distributors. Because lenders are unlikely to have the resources, time or training to audit the Year 2000 compliance of every commercial customer, they must develop some means of identifying the greatest risks and addressing them efficiently while engaging their other customers in less-extensive forms of monitoring.

Institutions may choose to analyze the riskiness of each lending relationship through a two-step process. The first step would involve classifying the portfolio according to the risks posed by different types of customers; increasingly-intensive levels of monitoring requirements could then be applied to the classes of loans that present the greatest risk to the institution. In the second step, the individual efforts of the customers in each stratum would be evaluated so that entities that have not taken adequate measures to deal with the Year 2000 challenges they face could be identified.

Loans have four major characteristics that contribute to the degree and nature of the potential Year 2000 risks they pose for the lender. These four risk categories are the type of business, the relative size of the credit, the structure of the loan, and the type of collateral. A particular customer may contribute risk in all four categories. Some banks may choose to distill this process of measuring risk into a scoring system to rank the risks presented by each borrower. Others may choose to develop a system in which borrowers with similar risk profiles are grouped together. The statistical analysis and sampling approaches for risk monitoring are discussed later in this article.

Line of business risk. Because of the businesses some borrowers are in, they may not face much direct risk from Year 2000 problems. Other borrowers that rely on sophisticated automation for producing, delivering, or getting paid for their products and services, will face much greater risk. For example, it is difficult to imagine how a barber might be put out of business because of Year 2000 difficulties. On the other hand, a medical practice—even a small one—will have many more sources of vulnerability: a doctor's practice could be severely threatened if his or her switchboard (or an answering service's switchboard) failed for an extended period, or if access to on-line patient records was lost, or if sophisticated diagnostic or testing equipment malfunctioned and produced inaccurate readings, raising issues of liability, or if billing systems that are linked to medical insurance companies ceased to work. To some extent, determining the risks posed by certain types of businesses may become an iterative process. As more is learned about the problems uncovered and being addressed by one borrower, the risks facing other borrowers in the same industry may become clearer.

Proportionality risk. The larger a credit facility is, the greater the bank's potential exposure. Hence, special attention should be paid to the larger credits in the loan portfolio. Of course, the bank's potential exposure from a customer would include unused lines of credit, outstanding letters of credit, guarantees made on other credits, any portions of a loan that were sold with recourse in a participation agreement, and any other exposures the bank might have from its dealings with the customer, including those that could arise from derivative contracts created on the customer's behalf.

Credit structure risk. The structure of a loan may affect its riskiness. Loans that mature before the Year 2000 will impose risk only if the borrower anticipates rolling over the credit. Amortizing loans may represent less risk than unsecured lines of credit from which customers can draw funds at will.

Collateral valuation risk. Collateralized loans may lose value if the collateral itself becomes impaired by Year 2000 problems. For example, some sophisticated production equipment may malfunction after the century changes because of embedded noncompliant microchips that operate or control the machinery. Should the equipment fail and be difficult or impossible to repair, the borrower could have difficulty maintaining production and making payments on any loans. In this case, having a lien on collateral—the broken equipment—would not bring the lender any relief, but defaulting loans that were collateralized with real estate or government securities would be less likely to impose large losses on the bank.

The ultimate purpose of the portfolio risk analysis is to develop the bank's program of reviewing and dealing with its individual customers' Year 2000 projects. For example, a bank may define four regimes of increasingly intensive review. The minimal regime might involve corresponding with a borrower (or a representative) on a question-and-answer basis to determine what Year 2000 risk is understood and managed. The most intensive regime might involve on-site interviews between the borrower's Year 2000 project manager and the bank's loan officer (accompanied by someone with Year 2000 expertise, perhaps from the bank's Year 2000 project team) and a request for regular progress reports. A description of each regime would specify how the initial customer contact would take place, what information would be received from the customer, and how the responses might be evaluated. On the basis of the information reviewed, different follow-up programs could be defined for customers in each program.

Risk management targets could be established. For example, a bank may decide that customers whose credits aggregate to at least 40 percent of total borrowings would receive the most intensive monitoring, and that no more than 15 percent of aggregate borrowings would be subject to the least-intensive regime. Similar goals could be established for the other risk categories. As customers are assigned to the appropriate monitoring program, the bank is then able to determine whether it is adequately covering its identifiable risks.

Assessments of Customers

A bank's Year 2000 awareness effort should include all commercial customers. Thus, borrowers will be aware of the risks they face and will understand the activities they must engage in to reduce those risks. At a minimum, customers who were identified during the analysis of portfolio risk as contributing the greatest risks to the bank should be required to submit descrip-

tions of their Year 2000 project remediation plans. The bank can then assess the reasonableness of the plans and the progress being made towards completing the project.

A customer's overall viability at the turn of the millennium can be affected by many factors, and lenders cannot expect to become as knowledgeable as expert consultants on Year 2000 project management. In many cases, loan officers, therefore, will need access to expertise, whether from within the Year 2000 compliance team in the bank's Data Processing Department or from outside consultants. Ultimately, however, lenders will need to become familiar enough with the issues involved in Year 2000 project management to understand the assessments being made by those experts.

Lenders need to determine whether their customers have the commitment and skills to ensure that critical processes will function and contingency plans have been developed. Lenders need to be reasonably assured that Year 2000 risk is understood and managed. The characteristics of a well-executed Year 2000 compliance project follow.

Sponsorship: The Year 2000 project is sponsored by the CEO or the board of directors and a senior, experienced project manager is assigned to it and is accountable. **Scope:** The project encompasses all potential areas of risk, not just the data-processing systems; the assessment extends to infrastructure, equipment and external relationships. **Priorities:** The organization has prioritized key areas of risk and remediation plans are scheduled to address all mission-critical areas. Areas that may begin to fail earlier than others are scheduled for prompt remediation. The first step in this process is to inventory all systems and equipment that may be at risk—and any large organization that has not yet begun to do this by the time the present article is published should be considered a high risk. **Plan:** The borrower has a written plan for addressing Year 2000 problems, and it includes a reasonable timetable for completing important milestones; the timetable must leave sufficient time to test the programming changes that are implemented, and allow sufficient time to accommodate unexpected problems. **Resources:** The project has an adequate budget and sufficient numbers of dedicated employees are assigned to the effort; if appropriate, the company has engaged consulting services to assist with the project. The organization's participation in Year 2000 user groups would be a good sign. **Status:** The borrower's project has achieved a reasonable degree of completion, and in any case has not

fallen behind schedule.¹⁰ *Vendor compliance:* The customer understands its reliance on externally controlled processes or equipment and is taking steps to confirm that the external organization will be compliant. For example, if the borrower is a manufacturer, vendors may be asked to test and warrant that the equipment that controls the production process will not fail with the date change. Whenever possible, a vendor's representations should be confirmed by independent third parties. In the case of critical equipment where the possibility exists that it could malfunction by operating in a manner that appears normal while generating inaccurate readings, plans should be made to conduct tests after the date changes. *Coordination with Business Partners:* The firm has engaged in a dialogue with its customers and suppliers, has performed due diligence on key partners and developed contingency plans in case any of them suffers serious Year 2000 disruptions. In cases in which the organization exchanges electronic data with other entities, agreements have been reached concerning new standards and interfaces. Plans have been made for testing interfirm exchanges of data early enough in advance of the date change to allow time to correct any problems that emerge during testing. *Contingency plans:* The client has plans for minimizing the consequences of any date-related disruption. For example, what will a hospital do if it determines that certain pieces of equipment are malfunctioning? Do alternative solutions or products exist? Have they been contracted for or leased ahead of time? Does the hospital have an alternative communications plan in place if the telephone system fails to operate?

For the customers representing the bank's greatest exposure, loan officers will want to evaluate the organizations' project plans and monitor their progress in achieving their goals. The May 5th FFIEC statement presents a useful framework for assessing an organiza-

tion's Year 2000 project. The statement includes a description of the five phases that a bank needs to complete in order to address the Year 2000 challenge properly. These phases are Awareness, Assessment, Renovation, Validation and Implementation. In using this framework to track the progress of an organization, the bank can ask the client to provide target dates by which 25 percent, 50 percent, 75 percent, and 100 percent of the critical systems will be renovated, validated, and implemented. Plans must include deadlines that are reasonable, given the resources being used, but that at the same time provide enough slack to accommodate any unexpected problems that may emerge. Progress toward meeting deadlines can then be monitored at the appropriate times. Other aspects of the borrower's Year 2000 plan should also be evaluated. The bank should determine if the borrower's plan includes assessment and repair of internal infrastructure (such as HVAC and elevators); the extent to which the firm has performed due diligence on key suppliers and business partners; whether contingency plans exist and are reasonable, and whether Year 2000 planning has been integrated with the firm's business strategies, including the development and introduction of new products, and mergers and acquisitions.

Tools for Monitoring and Reducing Risk

Loan officers may find different tools to be especially useful in managing the bank's Year 2000 risks. These are customer awareness campaigns, customer questionnaires, and statistical analysis and sampling.

Customer awareness and education campaigns. Unless a problem is understood and taken seriously customers will not adequately address it. Unfortunately, surveys in late 1997 indicate that senior management of many organizations have yet to understand the complexities and enterprise-wide effects the "millennium bug" can have on their organizations.¹¹ Financial institutions should ensure that their customers understand the issues surrounding Year 2000, and the actions they might take to minimize their exposure. Year 2000 presents an opportunity for financial institutions to provide a service by bringing attention, focus, and external discipline to their customers' remediation projects.

Awareness campaigns can take many forms. Some institutions might write or reproduce articles on the topic and send these to their customers. Other institutions might mount vendor fairs and bring together a variety of experts, ranging from consulting companies to technology tools vendors to provide their customers with a range of sources of information. Still other insti-

¹⁰The FFIEC (1997) strongly encourages financial institutions to have completed an assessment of their Year 2000 project by the end of third quarter 1997, and to have the programming changes for all critical systems made by December 31, 1998. The entire year of 1999 to then be devoted to testing. Similar time frames are appropriate for borrowers with large data-processing needs.

¹¹"According to survey findings released last week by Gartner Group Inc., 40 percent of the 2,300 companies and government organizations in 17 countries are still at the initial awareness and assessment phase." (*InformationWeek* (1997)). "Cap Gemini America, which offers Year 2000 remediation services, found only 16 percent of Fortune 500 companies surveyed have begun to implement a full-fledged strategy to become Year 2000 compliant, and only 24 percent have a detailed plan in place. Some companies have not begun any work at all." (Patrizio (1997).) "Very few of the 2,000 midsize retailers in the United States are ready for the Year 2000 according to a study released last week by the National Retail Federation." (*InformationWeek* (1997).)

tutions might mount seminars on Year 2000 assessment and remediation strategies and incorporate the financial institutions' own expectations relative to their lending policies and monitoring practices. In some cities, Year 2000 users' groups have been formed. Because the financial-services industry was one of the first to become aware of the problem, some banks have been early participants in these groups. However, many users' groups have limited participation to data-processing personnel. Lending or credit officers who wish to join these meetings should ask if their participation would be welcome or if their presence might inhibit discussion.

If the institution has already determined that it will alter its lending and credit policies, conduct Year 2000 audits, or require self-assessments from its borrowers, these new policies can be introduced in the awareness campaign. It is essential to make all customers clearly aware of the Year 2000 issues as soon as possible, so they can quickly plan and implement compliance programs.

Customer questionnaires. Probably the single most effective tool that the financial institution might wish to use to determine the degree of risk within the loan portfolio is customer completion of a self-assessment of its Year 2000 readiness and planning. A fairly comprehensive and well-designed questionnaire will yield important information and clearly indicate the level of risk exposure and next steps that might be necessary to reduce risks. Many major corporations now require their key suppliers to answer such questionnaires to certify their compliance with Year 2000 before they will renew contracts.¹² Some insurance companies are now developing specialty policies for business interruption from Year 2000 problems with primary underwriting data generated from customer self-assessment questionnaires.¹³ Lenders should determine when it would be appropriate to incorporate this type of assurance into the overall credit review of a customer. Many of the Year 2000 questionnaires that are currently in use can be modified to reflect the lender's needs (see Appendix). Ideally, for the questionnaire to support the lender's review process, it should allow quantitative analysis (that is, should provide scoring data that can be weighted and/or evaluated in a risk assessment).

There are different approaches a financial institution can take to using questionnaires. The institution can require customers to complete the questionnaire immediately or at the point of next loan renewal, or it can take a softer approach and promote the questionnaire as a tool that is to be used primarily for the benefit of the customer and is not tied directly to a lending policy. In either case, once the customer has produced a self-assessment of Year 2000 readiness, it will probably have a better understanding of the scope of the problem and the efforts needed to remedy any shortcomings.

If the financial institution chooses to use questionnaires, it will have to determine which of the completed forms it wishes to review and how it will respond to the information contained in them. This decision would evolve from the program that was developed during the assessment of portfolio risk.

Statistical analysis and sampling. Because the time and resources available for addressing Year 2000 credit concerns are limited, banks may find it more efficient to use statistical analysis or sampling, or both. Statistical analysis of the overall portfolio will help with the portfolio assessment; sampling may help the bank estimate the initial state of readiness of different segments of the portfolio.

The purpose of the statistical analysis is to segment the loan portfolio into potential risk categories as described in the section on assessing portfolio risk. The first step is to determine which characteristics may be relevant in contributing Year 2000 risk to the bank. The variables that would be appropriate are business category (such as SIC code) and specific product lines; type of collateral; credit structure; projected outstanding balances on 12/31/99; current outstanding balances and line commitments; the risk or credit scores already associated with that credit, and liquidity of the borrower; and if available, the results of the initial Year 2000 questionnaires.

The next step is to determine how the loan portfolio is distributed across each of these characteristics and then to plan accordingly. For example, if a large proportion of the loan portfolio is associated with a particular type of business (for example, retailing, manufacturing, technical services), specialized review procedures for that industry can be developed.

Important cross-tabulations should also be analyzed. For example, what percentage of the estimated 12/31/99 portfolio is composed of loans to businesses with poor liquidity secured by equipment that may be

¹²Hoffman (1997).

¹³For example, American International Companies' Millennium Insurance Policy.

impaired by embedded technology that is not Year 2000–ready?

When a bank wants to get a sense of how well prepared various types of borrowers are while it is developing initial plans and strategies for addressing Year 2000 credit risks, sampling may be useful. Surveying and compiling the responses of all borrowers could take considerable time and effort, so banks may choose first to survey a smaller sample of various categories of borrowers. (Banks that have not had much experience applying sampling techniques may wish to hire a consultant to help design the sample and interpret the results.) The results of the survey may help the bank determine how extensive its public awareness campaign needs to be and how much time and how many resources it should allocate to monitoring customers' Year 2000 preparations.¹⁴

Different banks will use statistical analysis and sampling in different ways. Some banks may choose to obtain information about each customer's Year 2000 project plans (from a written questionnaire, telephone contact, or on-site visits). Other banks may initially canvas a sample of borrowers to identify characteristics that may indicate risks. Still other banks may choose to build their models of portfolio-level risk before receiving any information from borrowers in order to save time in the early (analysis) stage and will then direct most of their attention to only the most critical borrowers.

Integration into Loan Review System

Banks will have to develop a system for incorporating the information they receive about each customer's Year 2000 projects into the existing loan review system. In addition, some banks may choose to develop systems that track the overall level of Year 2000 risk in the loan portfolio. Decisions that have to be made involve, among other things, timing, verification, standards, measurement of success, and changes to the loan review process.

Timing. Will the bank require that (some) borrowers report on Year 2000 progress more often than they are currently required to report financial data? Will the loan officer—on the basis of an assessment of the quality of the borrower's plans and its progress to date in completing the plan—establish a separate review schedule for each customer?

Verification. Will the bank require independent assessment of (some) borrowers' Year 2000 readiness from an accounting firm or other independent analyst? Will the bank want to contact customers and/or suppli-

ers of the borrower to verify that they have been coordinating on Year 2000 issues with the borrower? To the extent that the bank itself exchanges electronic data with a corporate customer, loan officers should help facilitate the interaction between the two organizations' data-processing staffs and should stay informed about any difficulties that emerge during tests of the new formats.

Standards. What will the institution consider minimal acceptable activity on the part of borrowers for the bank to retain confidence in the borrower? How will these standards be communicated to borrowers? Will new covenants be added to the loan documentation?

Measuring the success of a borrower's program. If a borrower experiences some disruption early in the Year 2000 caused either by the malfunctioning of internal systems or by such external factors as the inability of suppliers to deliver goods or services, how will the bank estimate the time required to recover and the obstacle the borrower faces in regaining normal cash flows? If such borrowers want to draw down or increase outstanding credit lines, how will the bank analyze these cases?

Loan review. How will the bank incorporate information about a firm's Year 2000 readiness into its credit and loan review decisions? How often will the borrower's progress toward completing its Year 2000 project plan be tracked and reevaluated? How quickly and firmly will the bank deal with customers that do not have adequate or realistic remediation plans or that have fallen far behind in implementing those plans?

CONCLUSION

The Year 2000 problem is unprecedented. Although simple in origin, it can have serious consequences. For many borrowers, managing a remediation plan is complex, and commercial customers who do not properly handle their Year 2000 projects can present banks with credit risks. To manage this type of risk effectively, a bank will have to devote time and resources to developing and implementing an action plan. This task is made more difficult by the need for loan officers to become more knowledgeable about the technical and operational aspects of their customers' business than they normally have to be. However, if the bank successfully implements a plan, it will have not only avoided large credit losses but also strengthened its relationship with its best customers.

¹⁴For more information on how to create and measure a sample, see Cowan (1997).

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APPENDIX

Sources of Additional Information

WEB SITES

The World Wide Web on the Internet includes many sites that maintain extensive information about Year 2000 issues.

Government Entities:

FDIC: The FDIC has plans to include Year 2000 information on its Web site. The material will be accessible from the FDIC homepage at: www.fdic.gov.

FFIEC: The FFIEC Web site includes the Year 2000 guidances that the Council has issued, Congressional testimony of bank regulators, bank trade associations, and links to other Year 2000 Web sites. One link of potential interest to commercial loan officers is the U.S. General Accounting Office's Year 2000 Assessment Guide. This document outlines the steps that organizations should follow as they manage their Year 2000 remediation project. The efforts of commercial customers can be compared to the practices described in this document. www.ffiec.gov/y2k/default.htm.

Federal Reserve Board: The FRB site includes copies of testimony and speeches of agency officials, information on testing PCs for Year 2000 problems. www.bog.frb.fed.us/ysk/.

General Services Administration: The GSA maintains a comprehensive Year 2000 Information Directory with links to other government agencies, vendors, and news articles. www.itpolicy.gas.gov/mks/yr2000/y201toc.

Trade Associations:

Institute of Electrical Engineers: This British association has some detailed information about the problems associated with equipment built with microchips that may malfunction when the calendar changes. www.iee.org.uk/2000risk/.

Information Technology Association of America: The ITAA has a program for certifying that organizations are following best practices in dealing with Year 2000 issues. The Web site has more information about this program, including a way to order the questionnaire upon which certification decisions are based (at the time of this writing, there is an initial fee of \$250 to receive the questionnaire and a very substantial fee for applying for certification). The Web site also contains an archive of past issues of the ITAA's electronic newsletter on Year 2000 issues, a page from which to order books about the Year 2000, and additional useful information. www.ita.org/year2000.htm.

RMA: The Association of Lending and Credit Risk Professionals: The RMA site has a Year 2000 area which includes a questionnaire that loan officers can use as part of their Year 2000 assessment of borrowers. www.rmahq.org.

Society of Information Managers: SIM sponsors a Web site upon which the Year 2000 Best Practices Discussion Group takes place. The Web site also includes a page from which a large number of Year 2000-related books can be ordered. www.year2000.unt.edu.

Private Firms:

ASB Bank: This New Zealand institution has some Year 2000 information on its Web site, including the text of a letter that it has sent to all of its customers discussing Year 2000 concerns. www.year2000.co.nz/y2kabs01.htm.

BankBoston: Among U.S. financial institutions, BankBoston has been one of the most public in its discussions of Year 2000 issues. www.bankboston.com/todya/about/y2k.html.

Gartner Group: The Gartner Group provides consulting and advisory services on technology matters to its clients, which include the FDIC and many financial institutions. They have con-

ducted a great deal of research and analysis on the Year 2000 problem. Occasionally, specific Year 2000-related materials are made available to the general public on their Web site. www.gartner16.gartnerweb.com/public/static/home.html.

Market Partners: Market Partners was established to assist banks in their Year 2000 projects. Their Web site is open to the public and includes breaking news stories related to Year 2000 and the banking community and an extensive list of links to related Web sites (including one called *H. Elliot's Mother of All Year 2000 Links Page*). www.marketpartners.com.

Edward Yardeni: Edward Yardeni, Chief Economist at Deutsche Morgan Grenfell, sponsors Dr. Edward Yardeni's Economic Network, a Web site of general interest to the banking community. Within the Web site is the Center for Cyber Economics from which the public has access to an archive of Dr. Yardeni's writings on Year 2000, and an extensive listing of related Web sites, including several that discuss legal issues. The site also contains a brief questionnaire that can be used for assessing the Year 2000 readiness of other organizations. www.yardeni.com.

Year 2000 Information Center: This site is the home of Peter de Jager, perhaps the Paul Revere of the Year 2000. The site includes links to various solution providers, local user groups, and to a daily listing of articles that have appeared in the press about Year 2000. www.year2000.com.

Electronic Newsletters:

Several organizations produce newsletters about Year 2000 issues that are delivered via e-mail. The ones listed here are free to the public.

Cutter Consortium: The Cutter Consortium produces a weekly newsletter aimed at the CIO and CEO of corporations. www.cutter.com/consortium.

ITAA: The ITAA's weekly newsletter has an emphasis on issues relating to government policies. It includes a listing of upcoming Year 2000 conferences and seminars. www.ita.org/year2000.htm.

Year 2000 Information Center: This newsletter includes the URLs for several recent press reports on Year 2000 topics that are available online. www.year2000.com.

BOOKS

Year 2000 Problem: Strategies and Solutions from the Fortune 100

Leon Kappelman, Contributing Editor
International Thomson Computer Press.

Leon Kappelman, a professor at the University of North Texas, is the Co-Chair of the Society of Information Managers' Year 2000 Task Force. Information about the book can be found at www.year2000.unt.edu/book/main.htm. It can be ordered by calling (512) 321-9652 or 1-888-999-2665. This Web site also has links to a long list of additional books about the Year 2000 problem.

Small Business Credit Markets: Why do we know so little about them?

by Katherine Samolyk*

The vast majority of U.S. businesses are small and medium-sized. Internal Revenue Service (IRS) data for the 1992 tax year indicate that there were around 16 million firms in nonfarm, non-financial industries.¹ Fewer than 5,000 of these were large firms, mostly corporations, having more than \$50 million in annual sales. Another 16,000 were what bankers would call middle-market firms, those with sales of \$10 million to \$50 million. The remaining 99.9 percent of businesses were financially small.

In this country, small business is seen as a means to economic opportunity, innovation, and growth.² It is also commonly accepted that there is a role in the U.S. economy for independent enterprises that stay small. Historically these values have been reflected in the legislative and regulatory consideration given to small business, as well as in antitrust policies that aim to limit the concentration of economic power.

In particular, smaller firms tend to receive special attention when policymakers focus on conditions in the banking sector. For example, during the contraction in bank credit in the early 1990s, when it was thought that smaller enterprises were most likely to feel the crunch,³ initiatives were taken to promote the availability of credit to small businesses, and bank regulatory reporting was expanded to include data on small loans to businesses.⁴ And now longer-term secular trends in the financial sector have raised concerns about the attractiveness of the small business borrower. Specifically, some analysts believe that financial innovation and changes in bank regulation may be causing the banking industry to find small commercial customers less attractive.⁵

Survey data indicate that small businesses rely on financial intermediaries—especially commercial banks—

as lenders. Thus, it is not surprising that the rapidly changing structure of the commercial banking industry has raised concerns about the future availability of credit for small businesses. Historically policies such as deposit insurance or branching restrictions may have encouraged small business lending (though that was not their purpose) by promoting the existence of smaller institutions that make smaller loans.⁶ By the same token, the ongoing consolidation of the banking industry has highlighted the question of whether, as banking organizations grow in size, the needs of smaller business customers will continue to be met.

Supply and demand considerations can explain the logic behind this conjecture. Smaller businesses may

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¹ Although 1993 Statistics of Income (SOI) data on business tax filers from the IRS have been published, they do not report on nonfarm, non-financial unincorporated businesses by size class. The 1992 data reported in this paragraph are from unpublished special tabulations produced by SOI.

² In some discussions, "small" and "new" are used synonymously, as the vast majority of newer firms tend to be small. Of course, new firms also tend to be very risky, as evidenced by their failure rates (Bates (1991)); it is only in hindsight that one can say the winners seemed like such sure things.

³ See Samolyk and Humes (1993).

⁴ Section 477 of the 1991 FDIC Improvement Act (FDICIA) requires that the Board of Governors of the Federal Reserve System report periodically to Congress on the availability of credit to small businesses. More recently, under the Community Reinvestment Act small business lending was included in the mandate for banks to serve local community needs.

⁵ See Berger, Kashyap, and Scalise (1995).

⁶ Indeed, it should be noted that although historical branching restrictions promoted the atomistic structure of the industry, it is less clear that they also promoted efficient provision of credit to borrowers (Berger, Kashyap, and Scalise (1995)). In unit-banking states, densely populated areas tended to have numerous banks competing for local customers, but small towns were more likely to have only single institutions to serve their needs.

face tighter credit conditions simply because the costs and risks associated with lending to them are greater. Although these costs and risks may depend upon the type of loan that is sought, they can also be affected by who the lender is. If larger banks face cost diseconomies in serving both small and large commercial customers, then industry-wide bank consolidation will adversely affect credit conditions for small businesses. Even if larger banks do not dramatically reduce the volume of their small business lending, differences in how these institutions make credit decisions can affect who gets credit. For example, to the extent that larger banks favor credit scoring models or standardized loan products, the ability of firms and firm owners to pledge collateral or guarantee loans may become more important relative to the value of establishing borrower-lender relationships.⁷

A number of researchers have studied the extent to which relationships between borrower and lender benefit small business borrowers, and the findings they have produced are mixed. Similarly, there is a growing body of literature that examines whether bank consolidation will reduce the supply of smaller commercial credits funded by banks, and again, the results are mixed.

These are important issues, and the success of attempts to address them empirically depends on the kinds and quality of data available, particularly data about supply and demand factors and market conditions. For ultimately the attractiveness of small businesses (individually and as a group), like that of any borrower or group of borrowers, is related to these customers' characteristics, their credit needs, and the costs of meeting these needs relative to the costs of serving other customers. Yet surprisingly little is known about small firms as borrowers or about their credit markets.⁸ Survey data do confirm that small businesses rely on financial intermediaries—especially commercial banks—as lenders,⁹ but the information available to us about the role of intermediaries as small business lenders, about the underlying costs and risks associated with small business loans, and about the factors that influence decisions to supply credit or to demand credit is meager at best. There is no single source of data that includes all of the types of information one would like to consider in assessing the availability of credit.¹⁰

This lack of information reflects the complexities of the market relationships involved. Of course, problems identifying and analyzing the factors relevant to decision making affect financial market research generally; but the unique nature of small businesses makes

the problem of gathering data about these credit markets particularly challenging.

First, even defining the category is problematic because the term small business means different things to different people. A bank is likely to classify its small business customers by a financial criterion, such as sales or assets, but the criterion used by the Small Business Administration (SBA) is number of employees. To the SBA, a small business is any firm with fewer than 500 employees—a cutoff that some might consider fairly sizable. Second, however “small” is defined, this population comprises firms with very diverse characteristics (in contrast, households are a more homogeneous group, making choices about consumption, investment, and borrowing that can be characterized in terms of the household's income, wealth, stage in the life cycle, and other demographic characteristics). Third, many small businesses keep few, if any, financial records besides those needed for filing tax returns (in contrast, large, publicly traded businesses have sophisticated, standardized accounting systems and publish periodic financial reports). Finally, the credit market options available to small businesses are not well defined. Whereas households and large corporations borrow in fairly standardized markets (households in mortgage and consumer credit markets, large corporations in publicly traded debt and paper markets as well as from banks and other lenders), the diverse small business population obtains loans from a wide range of sources, including loans not identified as commercial. In particular, smaller firms are more likely to finance themselves by tapping the personal credit available to the firm's owners and the owners' friends or family.

The next section of this study discusses the characteristics of firms, lenders, loans, and financial markets that can affect the availability, quantity, and price of credit to a small business. These are the characteristics on which researchers need data in order to test hypotheses about small business credit markets and, in particular, about the two central issues this paper

⁷ Avery, Bostic, and Samolyk (1998) present evidence that these sorts of commitment do appear to have become more prominent features of small business loans during the past decade.

⁸ This statement does not apply to bankers, who have information about their small business customers that other specialists, such as economists and policymakers, do not have.

⁹ In contrast, large businesses (mostly corporations) can raise funds in direct credit markets, that is, in markets where debt and equity issues are placed directly with investors.

¹⁰ Oh (1991) discusses a number of other sources of data on small firms and comments on the deficiencies that limit their usefulness for studying small business finance.

focuses on: To what extent do relationships with lenders affect the credit conditions faced by small businesses, and how will bank consolidation affect credit availability to smaller business borrowers. The two subsequent sections describe the data that have been collected from small businesses and from commercial banks. These descriptions of the available data are followed by a section summarizing the studies done to date on relationship lending and on bank consolida-

tion. Underscored throughout are the ways in which both data and methodology limit the studies' usefulness to those addressing important policy questions in the area of small business finance. Ultimately, it is hard to avoid concluding that better data are essential for a better understanding of what small business' credit needs are and whether these needs will continue to be met by existing and evolving financial markets.

FACTORS INFLUENCING SMALL BUSINESS CREDIT ARRANGEMENTS

Small business lending, like consumer credit, is increasingly characterized as a separate product line or market by lending institutions. Thus, it would be plausible for economists to construct a model of a small business credit market, including all of the factors believed to affect the costs and returns to lending and to borrowing. These factors would determine small business credit conditions—defined in terms of the quantity, price, and other terms of credit agreements as well as the ability of certain borrowers to obtain a loan at all.

Generally, credit demand by firms is considered to reflect the profitability of a firm's prospects relative to the availability of internal resources to fund these prospects.¹¹ If a business has profitable prospects that it cannot fund internally or chooses not to, then it should borrow if the prospects remain profitable given the costs of obtaining the credit.¹² For small businesses, these costs may include owners' guarantees, pledges of collateral, and covenants restricting the firm's behavior.

In choosing to extend credit, lenders should weigh the expected risks and return of a given loan relative to the lender's current portfolio and other available lending opportunities. A loan's credit risk is related to the borrowing firm's prospects and the condition of its balance sheet as well as to provisos of the loan contract, including collateral, guarantees, and term to maturity. The profitability of a given loan, however, is also affected by the costs associated with assessing and monitoring these risks as well as by the costs of originating, funding, and servicing the loan. When intermediaries develop an expertise in screening, contracting, and monitoring loans to small businesses, they reduce the marginal costs of gathering credit information.

Academic conjectures about how small business credit arrangements should differ from those of other borrowers tend to focus on the greater difficulty and cost, for a lender, of obtaining information and assessing risks, and on the lender's use of credit arrangements that mitigate these costs. (The reason both the inherent risks and the costs involved in assessing them are believed to be greater for smaller businesses is partly that smaller firms are often newer and therefore less established.) Although these academic conjectures often take the form of informal discussions rather than mathematical models, the discussions do build on a growing literature of formal models.

At the same time, testing these "cost-based" theories of small business credit availability is particularly challenging for researchers. The available data usually do not include direct measures of borrower risk; hence, researchers use certain characteristics of the borrower or of the loan as indirect indicators of risk. Similarly, direct measures of the information and transaction costs of funding various borrowers are not available, and researchers must use indirect measures—again, certain characteristics of the borrower or of the loan—as "proxies" for these factors. A wide range of observable factors that researchers have related to the underlying credit characteristics of certain borrowers or certain types of loans is discussed in the rest of this section. They include characteristics not only of the borrower and of the loan but also of the borrower-lender relationship, of the lender itself, and of the financial markets.

Characteristics of the Borrower

Certain small business customers may involve higher information costs for lenders because of the types of businesses they are in, the inadequacy of their financial accounting, and/or their failure to separate business and personal finances. And some smaller business borrowers may represent greater credit risks than others,

¹¹ For a textbook discussion, see Mishkin (1992), chaps. 5 and 6.

¹² Frazzari, Hubbard, and Peterson (1988) discuss why, for smaller firms, external financing is likely to be more expensive than internal financing.

such as newer firms with less-proven track records, firms with numerous other credit commitments, or, of course, firms with bad credit histories. Greater costs or risks will translate into either more monitoring or more true uncertainty for lenders to small businesses, but there are no direct measures of the costs and risks of funding a given firm. Thus, proxies for these factors should be defined and related to observed credit conditions as lenders seek to be duly compensated.

Researchers have conjectured that costs and risks are correlated with a range of firms' characteristics, including industry, size, age, and the legal organization of the business (incorporated versus unincorporated). For example, researchers have used firm age as a proxy for business risk as well as an indirect measure of the information that is publicly available about a firm (a firm's age is posited to be inversely related to a lender's information costs).¹³ A firm's characteristics may also be related to its demand for credit.

Loan Characteristics

The costs and risks of funding a small business are also conjectured to depend on the size and type of loan the firm is seeking. Since any fixed costs associated with making a loan translate into higher per-dollar financing costs for smaller credits, credit terms should be related to *loan size*. In addition, certain *types* of loans may involve lower costs and risks for lenders. For example, vehicle loans tend to be fairly uniform in contracting features, criteria for approval, and loan-to-value ratios and can therefore be evaluated on their own merits rather than on the firm's merits. To the extent that lenders can reduce their costs by standardizing loans, smaller firms can obtain better credit terms by taking advantage of these credits.

In contrast, the costs and risks associated with more idiosyncratic types of lending, such as business credit lines, should be greater than those incurred on standardized credits or on loans linked to the acquisition of particular assets. Therefore, the variations in the costs and risks across small business borrowers may be reflected in the types of loans that firms obtain as well as in the interest-rate differentials they pay on a given loan product.¹⁴ The differences in loan products imply that researchers studying credit relationships should segment small business credit markets along product lines. For example, when one is measuring how interest-rate differentials are related to firms' characteristics, it is important to look at patterns for a given type of loan.

Other Loan Terms

Besides a loan's size and type, *contractual loan features* are related to the costs and risks incurred by both borrowers and lenders. For example, an *increased term to maturity* allows the borrower's payments to be distributed over a longer period of time. Although this reduces the size of the payment and the costs of renewing the loan, it also extends the time horizon over which a borrower's fortunes may change. All other things equal, lengthening the term of a loan transfers risk from the borrower to the lender; hence it tends to be associated with an increase in the loan's rate.

In contrast, credit enhancements—including collateral pledges, loan guarantees, and loan covenants—are nonprice features of loan contracts that tend to shift risks from lenders to borrowers. A loan secured with a *collateral pledge* gives a lender an explicit claim to assets; hence, a collateral pledge can increase the return a lender expects to get if default should occur.¹⁵ Moreover, *the pledge of personal collateral or a loan guarantee* can represent the commitment of assets otherwise more difficult, if not impossible, for lenders to reach in the event of default.¹⁶ Of course, in the case of a guarantee, the claim is on the general net worth of the guarantor rather than on specific assets. For corporations or limited partnerships, the guarantee creates an explicit claim where otherwise liability is limited to the owners' equity. Finally, *loan covenants* limiting actions of the firm that could potentially reduce loan creditworthiness are another means of mitigating problems associated with imperfect information and lender costs. Because the value of a firm's credit enhancement to a lender partly depends on what has been promised to others, the willingness of borrowers to limit the promises made to other lenders can also enhance their creditworthiness, albeit at some cost to the borrower.

¹³ Leeth and Scott (1989) use age as a proxy for business risk, conjecturing that younger firms are more risky. Petersen and Rajan (1994) and Berger and Udell (1995) use age as a proxy for the information available about a firm.

¹⁴ Of course, a firm's ability to take advantage of lower-cost types of loans depends on the firm's planned use of the funds, such as its need to finance the purchase of a building, vehicle, or capital equipment.

¹⁵ Mann (1997) presents an extensive discussion of the role of secured lending in small business finance.

¹⁶ Bester (1985) presents a theoretical framework in which collateralization reduces what is called the adverse selection problem, that is, the ability of borrowers to misrepresent their riskiness. Chan and Kanatas (1985) advance the argument that the pledge of personal assets signals the willingness of a firm's owner to risk wealth besides the equity that has already been invested in the firm. See Avery, Bostic, and Samolyk (1998) for an extensive discussion of personal commitments in small business financing arrangements and of results as to their importance.

Characteristics of the Relationship between the Borrower and the Lender

Economists also conjecture that the nature of the relationship between a small firm and its lender should affect the credit conditions the firm faces. Lenders should have better information about borrowers they have dealt with previously. Thus, small firms should be able to obtain better credit terms from lenders with whom they have developed a relationship, whether through a previous credit arrangement or through the purchase of other business services.¹⁷ Lenders also should have better information about borrowers in the markets where they have maintained a more active presence. Hence, screening and monitoring costs have a geographic dimension that is particularly important for smaller firms.

These relationship dimensions of information costs suggest that markets for smaller business credits will tend to be characterized by more-localized and longer-term relationships.¹⁸ All other things being equal, smaller business borrowers should be at a greater informational disadvantage if they seek credit from nonlocal lenders who are not familiar with their geographic market or line of business. Not only will smaller firms face higher costs when shopping for new lenders, but they may also lose the benefits of dealing with lenders with whom they have already formed relationships. The value of these relationships, however, is likely to depend on the type of loan being sought. As discussed below, it may also depend on the characteristics of the lender as well as of the local credit market.

Type of Lender

Banks, and to a lesser extent finance companies, are the dominant sources of small business loans.¹⁹ However, whereas finance companies tend to focus on standardized types of lending, commercial banks fund a greater share of information-intensive small business loans. Researchers contend that banks' greater share of such loans reflects a cost advantage that banks have as small business lenders.²⁰ Historically they have pro-

vided a wider range of business services than nonbank intermediaries, and this may reduce information costs, as banks obtain additional information through the other financial products (such as depository or cash management) that they sell to smaller firms.²¹ Banks have also tended to offer a wider range of loan types, which can reduce the cost of finding the most efficient credit product for a business. Finally, the decentralized structure of the U.S. banking industry may enable small business customers to develop local relationships.

To some extent, differences between banks and finance companies also reflect regulatory policies as well as market factors.²² The very different regulatory environments may be manifest in differences in lending strategy and in the contractual features that characterize particular types of loans. For example, one might expect that fairly low-cost credit enhancements, such as signatory personal guarantees, would be used more frequently by regulated banking institutions, if only to satisfy government examiners seeking to limit loan risk.

Other Lender Characteristics

Credit terms received by smaller enterprises should also reflect the characteristics of the particular lending institution. Within the commercial banking industry, for example, smaller banks are increasingly viewed as different commercial lenders from larger regional or money-center banks. If the costs and profitability of

¹⁹ By focusing on this type of lending, these intermediaries can develop a comparative expertise in evaluating and monitoring credit risks and in settling the defaulted claims of small borrowers. Fama (1985) and Bernanke and Gertler (1987) argue that the nature of their lending is what makes these institutions "special." Because of wide variations in business characteristics and credit needs, intermediaries may tend to specialize in screening and monitoring particular types of borrowers—such as firms in certain industries or certain regions. By focusing on certain types of firms, a lender can reduce the average costs of producing information about the prospects for these firms, as any fixed costs can be spread over numerous borrowers.

²⁰ See Petersen and Rajan (1994) and Berger and Udell (1995).

²¹ To some extent, however, the range of business services provided by finance companies reflects the regulatory definition of a finance company. The Federal Reserve classifies all institutions that fund short- and intermediate-term credit but are not depository institutions as finance companies. Although the historical roots of finance companies are very different from those of commercial banks, the industry has evolved into one that funds a broad range of credit for the business and household sectors. It has also evolved into an industry that is dominated by the largest firms, most of which are captive financial affiliates of major U.S. corporations (D'Arista and Schlesinger (1992)).

²² Finance companies have never been subject to minimum capital standards, regulated lending limits, or restrictions on geographic branching or on affiliations with nonfinancial corporations; however, they are prohibited from issuing federally insured deposit liabilities. Large finance companies must raise funds in capital markets and are subject to the scrutiny of sophisticated investors; smaller finance companies borrow from other intermediaries, including banks.

¹⁷ Several theoretical papers have demonstrated that loan rates and/or collateral requirements should decline as relationships between borrowers and lenders mature (Diamond (1991), Boot and Thakor (1994)).

¹⁸ Indeed, for antitrust purposes the geographic markets serving smaller commercial customers are defined as local markets. Antitrust laws are designed to protect all bank customers, but special emphasis is placed on small firms and consumers who face high costs in finding alternatives to their local banks. Both the Department of Justice and the Federal Reserve Board of Governors scrutinize proposed bank mergers for potential anticompetitive effects. Defining the relevant product and geographic markets as well as alternative suppliers of small business credit are key features of these analyses.

small business lending are related to the scale and scope of a bank's activities, then the credit terms obtained by a small business will be related to the size of its lender. Obviously, larger business customers require larger banks to meet their credit needs. Small banks are constrained by their size to make smaller loans, given the need for portfolio diversification and regulatory limits on loans to individual borrowers.

However, some researchers have argued that smaller banks can make small commercial loans more profitably than other lenders because they develop better information about the local community.²³ Larger and organizationally complex banking companies may find it less profitable to focus on both relationship-oriented small business borrowers and either large commercial customers or more-standardized loan product lines, such as credit-card lending. If large organizations do find relationship-oriented small business loans to be less profitable, they will either charge more for them or be less willing to extend them than will smaller banks.²⁴

In addition to a lending institution's structural characteristics, its current condition can affect the credit terms obtained by its small business borrowers. The financial condition of a lender is, of course, related to the condition of its current loans, hence its current borrowers. Although bank asset-quality problems may be due to a number of factors, lenders

experiencing these problems may tighten origination standards for prospective borrowers, including small firms.²⁵

Financial Market Structure and Economic Conditions

Researchers posit that financing options should be affected by the structural characteristics and cyclical conditions in loan markets. Clearly the competitive structure of business loan markets reflects the availability of credit alternatives. As stated above, small firms seeking credit in geographic or product markets that are highly competitive should obtain better credit terms.²⁶ However, if the market is dominated by large banks, the terms that small business borrowers obtain may not be as favorable.

Credit availability for small business should also be considered in the context of broader financial and economic conditions. Despite public policies that promote small business lending, smaller enterprises are considered most vulnerable to changing conditions over the business cycle. Economic downturns have the potential to magnify the problems associated with lending to information-intensive small commercial borrowers. As property values and income prospects become less certain, the ability to use personal guarantees or collateral to mitigate a lender's risks and costs is likely to decline.

INFORMATION ON LOANS TO SMALL BUSINESSES

Although there are several surveys of small business finance, the only comprehensive, publicly available data on the credit arrangements of small firms are from the National Survey of Small Business Finances (NSSBF), cosponsored by the Board of Governors of the Federal Reserve System and the Small Business Administration. Surveys were conducted for 1987 and 1993 to gather detailed financial data on the types and

sources of credit used by small businesses. The data for each survey year are based on a sample of firms that was statistically designed to be representative of all non-agricultural, nonfinancial enterprises having fewer than 500 full-time-equivalent employees.²⁷ This latter point is particularly important for researchers because, although some private analysts also collect data on firm-level finances (as discussed below), these data

²³ Nakamura (1994) discusses this view. It is important to note, however, that banks *choose* whether to devote resources to processing information about local borrowers. Because small banks serve limited localities, focusing on an information-intensive small business credit niche may be a more efficient business strategy for them than it would be for the branch of a large organization that focused on meeting the needs of corporate customers.

²⁴ See Berger and Udell (1996) and Berger, Saunders, Scalise, and Udell (1997).

²⁵ An institution may be having problems because it effectively underprices the risks or costs of lending to certain borrowers, hence giving these borrowers credit terms that are too good. Alternatively, an institution may be in poor condition because, although it priced risks correctly, it has effectively gotten a bad draw in terms of the performance of its loan portfolio. Thus, asset-quality problems are not a clear indi-

cator of past underwriting standards.

²⁶ At the same time, however, Petersen and Rajan (1995) conjecture that because borrowers and lenders in these markets have more alternatives, relationships tend to have less value.

²⁷ The survey for both years is restricted to include only for-profit, non-agricultural, nonfinancial firms with fewer than 500 full-time-equivalent employees (as reported by Dun and Bradstreet) that were in business at the end of the survey year. The NSSBF reports data for 3,224 firms in 1987 and 4,637 firms in 1993. The two surveys differ somewhat in the focus of the information sought. Population estimates are also not directly comparable for the two years, because of differences in the underlying small business populations that the surveys represent. (See Cole, Wolken, and Woodburn (1996) for details.) For additional information about the 1987 and 1993 NSSBF, see Elliehausen and Wolken (1990) and Cole and Wolken (1995).

are hard to use as small business estimates, for they are not based on scientifically designed samples. In contrast, the NSSBF is designed to provide a comprehensive picture of small business credit conditions for a well-defined population.²⁸

NSSBF: Overview

The NSSBF asks sampled firms to report information on their outstanding loans, including the balance due, the type of loan (such as line of credit, mortgage, or vehicle loan), any collateral and guarantee arrangements, and the source of the loan (that is, the type of lender). Respondents also report detailed information about the terms of their most recent loan applications. Finally, each firm is asked to report income-statement and balance-sheet data as well as demographic characteristics about the firm and its owners. Table 1 lists the types of information included in the 1993 NSSBF.

Lacunae in NSSBF Data

Careful collection of survey data is expensive and difficult. Thus, although the NSSBF is unparalleled in its ability to link the characteristics of a small business to the firm's use of credit, its capacity to record the role of lenders in the credit-allocation process is more limited. The only information reported by respondents about each supplier of credit is type (such as commercial bank or finance company), geographic distance from the firm, and the duration of the relationship with the firm. To a large extent, the reason for the lack of information about suppliers of credit is that small firms are not likely to have much information about their lenders. For example, small businesses are not likely to be able to report much about their lenders' balance sheets, including how these lenders book the various types of loans they make to the firms. Thus, although it is generally believed that loans booked as mortgage or consumer loans by lenders are often used to finance

small business activities, the survey data cannot be used to quantify the extent to which this is the case.

In addition, the information provided by the NSSBF about a firm's outstanding loans is missing some factors that researchers need if they are to fully evaluate small business credit arrangements. Survey respondents report the source, type, balance due, and whether certain credit enhancements are pledged on each outstanding loan. However, they do not report the original loan amount, loan origination date, maturity date, or contractual interest rate. Although the reason for these omissions may be that many firms would not be able to recall the information, the omissions do make it difficult for researchers to study the capital budgeting decisions of small firms.

Finally, although the NSSBF reports a lot of information about the terms of a firm's most recent credit application, it does not include data about a number of important factors that normally affect credit decisions. In particular, it reports very little information about a prospective borrower's options at the time of the loan application. More problematic is the fact that the NSSBF reports employment, income-statement, balance-sheet, and financial-service-usage data for the survey year but nothing about a firm's financial condition when it last applied for credit—unless that happened to be in the survey year.²⁹ These omissions limit the extent to which researchers can relate the financial condition and options of a borrower at the time of a credit decision with the reported outcome of the application process.

The Usefulness of NSSBF Data

Despite these shortcomings, the NSSBF data are useful in several respects. First, they allow researchers to quantify the relationship between small business borrowing and a wide range of firms' characteristics. Economists at the Board of Governors of the Federal Reserve System and other researchers have published studies describing the features of the small business population and of small business credit markets represented by the NSSBF.³⁰ According to these studies, in 1993 the small business population was composed of roughly five million firms that, by and large, were quite small, generally not that young, and concentrated in the services, trade, and construction industries.³¹ Roughly 60 percent of these firms had an outstanding line of credit, loan, or lease; however, among the other firms some may have used trade credit or credit cards for very short-term financing needs.³² The 1993 data also suggest that the proportion of firms that borrow

²⁸ The population characterized by the NSSBF does not really represent the population of very small business entities, in particular the millions of individuals filing tax returns to report small amounts of income from part-time business activities.

²⁹ Gathering this sort of information for each outstanding small business loan would be virtually impossible.

³⁰ Cole and Wolken (1995) and Ellichehausen and Wolken (1995) report extensive univariate statistics on firms' credit use, by source and by type. For statistics on the distribution of outstanding small business credit dollars across types of loans and types of lenders, see also Ellichehausen and Wolken (1995) and Cole, Wolken, and Woodburn (1996). The articles reporting on the 1993 NSSBF use preliminary data that differ from the final-use database now available on the Internet.

³¹ See Avery, Bostic, and Samolyk (1998).

³² This measure of loans and leases does not include credit-card debt, trade credit, or loans from owners.

Table 1
The 1993 National Survey of Small Business Finance
Overview of Survey Content

Firm Characteristics as of 1993

Includes
 Standard Industrial Classification (SIC) code
 Legal organization type
 Year business was acquired
 Number of FTE employees
 Selected owner characteristics

Use of Deposit Services in 1993

Includes
 Checking accounts
 Savings accounts (any nonchecking deposits)
 Up to three possible sources
 Up to three possible typical monthly balances

Outstanding Credit and Financing in 1993

Includes
 Lines of credit
 Capital leases
 Mortgages
 Motor vehicle loans
 Equipment loans
 Any other loans
 Up to three possible sources
 Principal owed to each source
 Types of collateral pledged on loans from each source
 Whether guarantees have been pledged to each source
 Loans from partners/stockholders
 How many?
 Total principal owed
 Are they subordinated to other loans?

Use of Other Financial Services during 1993

Includes
 Transaction services

Cash management services
 Credit-related services
 Pension/trust services
 Brokerage services
 Yes or no reported for each financial institution used by firm

**Relationships with Financial Institutions/
 Credit Sources in 1993**

Up to six institutions identified as most important financial service suppliers
 Type of supplier
 How many years has used supplier?
 Distance between firm and supplier location
 Most frequent method of conducting business

Most Recent Credit Application¹

Includes
 Month and year applied (last three years)
 Amount applied for
 Primary use of loan or line proceeds
 Secured by real estate?
 Appraisal required?
 Cost of appraisal
 Environmental survey required?
 Cost of environmental survey
 Was application approved or denied?
 Information about lender applied to
 Type
 Length of relationship (as of 1993)
 Distance between lender and firm
 Why firm applied to this particular lender
 Loan application accepted or denied?

¹Does not include applications either pending or withdrawn by firm.

tends to increase with firm size, and very old firms borrowed less frequently than others.

Second, the NSSBF is the only source—public or private—of data that can be useful for constructing a representative picture of who funds small businesses. Hence, it can be used to assess quantitatively the validity of a number of credit-market issues, such as the concern that banks will no longer be the preeminent small business lenders.³³ As shown in table 2, the 1993 survey indicates that more than two-thirds of borrowing firms obtained at least one of their loans, credit lines, or leases from a commercial bank. Just over one-fifth of borrowing firms reported obtaining some credit from a finance company, the second most important source of loans. But in addition to market shares based on number of borrowers, shares of dol-

lar value of borrowings are also important, since very small firms dominate the sample but account for a small share of total small business credit outstanding. In terms of loan dollars, commercial banks were the dominant source of small business credit, accounting for almost 60 percent of the dollar amount of outstanding credit lines, loans, and leases.³⁴ Finance companies remain a somewhat distant second, funding roughly one-seventh of outstanding small business credit in 1993.

³³ Small business loans and loan dollars as measured here do not include credit-card debt, trade credit, or loans from owners.

³⁴ As reported in Cole, Wolken, and Woodburn (1996), this share has changed little since 1987.

Table 2
The 1993 National Survey of Small Business Finances
Panel A. Percentage of Firms Having Any Loans,
by Loan Type and by Lender Type

	All Sources ¹		Commercial Banks		Finance Companies	
	All Firms	Borrowing Firms	All Firms	Borrowing Firms	All Firms	Borrowing Firms
All loans, lines, leases	59.1	100.0	40.7	68.9	12.6	21.3
Credit lines	25.7	43.5	22.0	37.2	1.4	2.4
Vehicle loans	25.3	42.8	13.9	23.5	8.0	13.5
Equipment loans	14.8	25.0	8.0	13.5	2.2	3.7
Mortgages	7.8	13.2	5.3	9.0	0.3	0.5
Leases	10.3	17.4	2.0	3.4	2.3	3.9
Other loans	12.7	21.5	5.1	8.6	0.3	0.5

Panel B. Percentage of Outstanding Small Business Credit,¹
by Loan Type and by Lender Type

	All External Sources	Commercial Banks	Finance Companies
	All external sources	100.0	58.6
Credit lines	42.0	32.8	6.4
Vehicle loans	4.3	2.0	1.8
Equipment loans	8.2	4.9	1.9
Mortgages	24.9	11.3	2.1
Leases	4.5	1.4	0.9
Other loans	16.2	6.3	0.6

¹Percentage of the total value of outstanding credit lines, loans, and leases, excluding loans from owners.

Third, the 1993 NSSBF is also the only source of data that can be used to construct a comprehensive picture of small business loan markets defined by the different types of loan products that small businesses use. As table 2 shows, small business borrowers most commonly reported having at least one loan in the form of a credit line or a vehicle loan (43.6 percent and 42.8 percent, respectively). However, as credit lines tend to be larger, they account for a much greater share of outstanding small business credit dollars than vehicle loans (42.8 percent and 4.3 percent, respectively).³⁵

Fourth, the information in the NSSBF can be used to describe many other features of small business credit arrangements. For example, researchers have documented the importance of collateral pledges and owners' guarantees for particular types of business borrowers that use particular types of loans or sources of credit.³⁶ They find that the personal commitments of owners' wealth play an important role in the allocation of credit, especially to firms with limited-liability ownership structures, such as small corporations. Other researchers use data on the distance

between firms and their lenders to characterize the geographic dimensions of small business credit markets. Their findings indicate that for most kinds of loans, (at least as of 1993) the vast majority of small businesses deal with fairly local lenders.³⁷

³⁵ Lines of credit accounted for roughly 25 percent of small business loans but roughly 40 percent of the outstanding volume of small business credit. Roughly 80 percent of credit line facilities are small (less than \$100,000); however, takedowns from larger facilities account for 90 percent of outstanding balances owed on credit lines. Roughly 98 percent of vehicle-loan balances were less than \$100,000; of course, this understates the average size of the loans at origination. The data also indicate that commercial banks remain the dominant source of small business credit lines in terms of loan dollars, funding 78 percent of outstanding credit line balances. The outstanding vehicle-loan balances owed to banks and to finance companies were roughly equal (46.5 percent and 45 percent, respectively).

³⁶ Avery, Bostic, and Samolyk (1998) study the incidence of usage of personal collateral and personal guarantees by small firms, as well as the dollar amounts of credit backed by these enhancements.

³⁷ Kwast, McCluer, and Wolken (1997) use the 1993 NSSBF to examine the extent to which the small businesses obtain their financial services locally. Their results are consistent with the existence of fixed transaction and information costs for both lenders and borrowers that make it cost effective for small borrowers to borrow locally, but their results also show that within local markets, smaller firms shop around. It should be noted, however, that their findings reflect the predominance of very small firms in the NSSBF population and cannot be used to quantify the share of small business credit market dollars that is extended locally.

Other Data from Small Businesses

Private-sector analysts also collect data on firm-level finances. Although these samples are generally not statistically designed to be representative of any particular segment of the small business population, they have been used to generate conclusions about small business credit conditions. The National Federation of Independent Business (NFIB) has conducted surveys of small-firm finances that—although not publicly available—have been used in research on small business.³⁸ For example, in late 1987 a mail survey was sent to a random sample of member firms, asking about their experiences with commercial banks as lenders and about the terms of their recent loans. The 1,921 usable responses are not statistically weighted to represent any specific small business population, but the survey's administrators argue that the characteristics of the sample of responding firms are fairly comparable to those of what the administrators call "an estimated small business universe."³⁹

Findings based on other private sources of data on small business finance have been cited as well in the popular press (see sidebar). Like the NFIB, these sources gather information from their constituencies or clients but generally do not scientifically link the data to a broader population of small firms. Thus small business data from private sources can lead researchers to very different conclusions because the small businesses represented by the samples may be different. Unfortunately, without information about the underlying populations, it is difficult to reconcile conflicting findings.

"Sharp Drop in 'We'll Just Put It on the Card'"— *American Banker*, August 25, 1997

"Credit Card Use to Finance Business Is Soaring, Says Survey of Small Firms"— *The Wall Street Journal*, September 25, 1997

On August 25, 1997, an article in the *American Banker* asserted that "recent surveys show that the use of personal credit cards for business financing, . . . has fallen in recent years." One month later, an article in *The Wall Street Journal* announced that the use of credit cards by small firms was soaring. These two recent pieces illustrate the inconclusiveness of evidence yielded by different populations of small firms, especially when they are not well defined.

The *American Banker* article reports the results of two 1996 studies (by the National Federation for Women Business Owners [NFWBO] and by Dun & Bradstreet [D&B]), but makes no attempt to define the small business populations on which the evidence is based.

The Wall Street Journal story discusses an annual survey by Arthur Andersen and the trade group National Small Business United (NSBU), and does mention that the results are for businesses with fewer than 20 employees.¹ However, it does not state whether these businesses were drawn from the NSBU membership file or from some other groups of small businesses.

¹The *Wall Street Journal* article also acknowledges that the reported increase in credit-card use conflicts with the 1996 Dun & Bradstreet (D&B) survey results. In doing so, it notes that "small firms," as represented by the D&B study, refers to businesses with fewer than one hundred employees.

DATA ON SMALL COMMERCIAL LOANS TO BUSINESS

The other main type of data used to study credit availability for small business is banking data on commercial loans (from Call Reports and from the Federal Reserve Board's Survey of the Terms of Bank Lending). When linked to other information about the lending institutions or their markets, these data have been used to answer questions about how banks' small-commercial-loan portfolios are related to the structure and condition of the banking industry.

Call Report Data

The only publicly available source of commercial banking data on outstanding small commercial loans is the midyear Report of Income and Condition (Call Re-

port). Since 1993, each commercial and mutual savings bank has reported its outstanding balance and number of business loans of \$1 million or less on its June Call Report. These data identify the number and dollar volume of outstanding Commercial and Industrial (C&I) loans, commercial real-estate loans, and agricultural loans for several loan-size classes.⁴⁰

³⁸ The NFIB also publishes quarterly indices that summarize changes in credit market conditions as experienced by its members.

³⁹ See Dennis, Dunkelberg, and Van Hulle (1988) for a description of their 1987 survey. An academic study by Leeth and Scott (1989) describes earlier surveys.

⁴⁰ The Call Report small-loan numbers for the early years (especially 1993) are known to reflect some confusion as to what was supposed to be reported; hence evidence from these years should be interpreted cautiously.

Call Report data have an advantage over many other sources of information in that they cover the entire population of banks, and they are particularly valuable inasmuch as they can be used to examine how the volume of small commercial and agricultural loans held by a bank is related to a wide range of bank financial data also reported on Call Reports. Researchers can aggregate these data to examine how small commercial lending by the industry (by particular segments of the industry) is related to the industry's structure and performance.

Call Report small-commercial-loan data can also be linked with information about banks that is not published on Call Reports but is collected by bank regulatory agencies. For example, bank-level databases produced by the Federal Reserve Board of Governors and the FDIC track changes in the structural characteristics of the banking industry, including those due to the resolutions of bank failures as well as to unassisted bank mergers, acquisitions, and changes in charter.⁴¹ The FDIC also collects annual data on the geographic distribution of each bank's deposits which can be used to construct a picture of the bank's market in terms of this funding source. Call Report data are also frequently matched with other geographic data to characterize the economic or market conditions in which a bank is operating. For example, some researchers use state economic data, such as income growth and unemployment rates, as proxies for the local economic conditions affecting banks.

The format of the Call Report itself, however, limits the usefulness of the small-commercial-loan data for studying small business finance. Characteristics of the loan rather than of the borrower make up these balance-sheet items. In particular, banks report data that are based on the size of the commercial loan—not the size of the business borrower. Some “small” businesses may obtain significant credit in amounts of more than \$1 million, yet these loans are excluded. Moreover, it is believed that many smaller businesses finance their activities through bank loans not reported as commercial credits—for example, consumer installment loans and home equity lines of credit—and are thus excluded from the data.

In addition, Call Report data report the consolidated commercial loan outstandings for all offices of a bank, whether the bank is a small community lender or one with branches in a number of states. Thus, although Call Reports identify the state, city,

MSA, and county of what is usually the bank's headquarters, they do not report the geographic location of the office where the small commercial loans were originated. Finally, balance-sheet data indicate only the quantity of small loans held by banks but reveal nothing about the terms associated with the loans.

STBL Data on Small Commercial Loans

Another source of commercial bank loan data that has been used for studying small business credit availability is the Federal Reserve Board of Governors Survey of the Terms of Bank Lending (STBL), administered since the late 1970s. This quarterly survey of roughly 300 banks reports data on the individual C&I loans made during the previous week. Although these data are not available publicly, they have been used in studies by Federal Reserve researchers because they include characteristics of individual loans, such as the dollar amount, interest rate, maturity, and whether collateral was required.

The STBL data are particularly valuable because they can be used to study the terms of individual commercial loans. By linking the STBL loan data reported by each bank to Call Report and other data, researchers can examine the relationships between bank characteristics and loan originations. As with Call Report data, however, the scope of the survey information limits its usefulness for studies of small business finance, since it includes nothing about the characteristics of the borrower. Thus, the STBL does not indicate the size, type, or geographic location of the commercial borrower. The STBL also does not include any data on commercial loans collateralized by real estate, which are an important type of small business loan. Finally, the STBL samples do not necessarily characterize the entire population of banks adequately, because they tend to include high proportions of larger institutions (that is, the STBL oversamples large banks relative to their incidence in the industry) and are correspondingly less likely to adequately represent loans originated by small banks.

⁴¹ The Federal Reserve Board (FRB) and the FDIC each produce a database that tracks the evolving structure of the banking industry. The FRB's is called the FRB National Information Center (NIC) database and the FDIC's is called the Structure database.

STUDIES OF RELATIONSHIP LENDING AND BANK CONSOLIDATION VIS-À-VIS SMALL BUSINESS CREDIT

Despite limitations of data, public-policy concerns about how changes in the financial sector may affect the availability of small business credit have underscored the importance of gathering evidence about small business financing arrangements. These concerns center on two issues: the importance of firm-lender relationships in the allocation of credits to small businesses and the effects of bank consolidation on the availability of smaller commercial loans.

Evidence about Relationships between Borrowers and Lenders

Three studies have used the NSSBF to explore the idea that borrower-lender relationships reduce the costs of lending and allow small business borrowers to obtain better credit terms.⁴² All three examine some aspects of the credit conditions respondents faced during their most recent applications for loans; one also examines collateral requirements on the outstanding credit lines reported by respondents. As noted above, although researchers conjecture that information gathering on small borrowers is a significant cost in originating loans, no data set includes direct measures of these costs. Thus, researchers examine the relationship between credit terms and several variables reported on the NSSBF that they use as a proxy for the information available to a lender about a firm. These variables include the firm's age, the length of time the firm has dealt with this lender, and the types of financial services the firm reports having obtained from this lender. The studies use multivariate regression models to examine how some measure of credit availability is related to a firm's characteristics (such as size, financial condition, or broad industrial class) and variables that measure the firm's relationship with its prospective lender.

Petersen and Rajan (1994) use the 1987 NSSBF to analyze the interest rate that firms reported obtaining on their most recent loans from institutional lenders. The authors' tests focus on the correlation between this loan interest rate and the relationship variables, as well as on the total number of lenders that a firm borrows from. The authors conclude that larger firms, incorporated firms, and older firms obtained lower interest rates than smaller, unincorporated, or younger firms, but they cannot conclude that firms having longer relationships with their lenders obtained lower interest rates (all other things being equal). They also find no evidence that firms that

purchase other services from their lenders obtained better credit terms, but they do report that firms dealing with numerous lenders paid systematically higher rates.

The inability to find a systematic correlation between the length or breadth of the firm-creditor relationship and loan rates may reflect a number of factors. First, the statistical tests are applied to a sample that includes loan types ranging from lines of credit to vehicle loans. As discussed above, certain types of loans, such as vehicle loans, may not be very relationship oriented. Second, although the NSSBF reports data on when each firm obtained its most recent loan, the authors do not seem to have looked only at loans obtained during the survey year. This is particularly important, as the NSSBF reports firms' financial data as of the survey year, that is, 1987.⁴³ Thus, for loans obtained a number of years earlier, a firm's financial data may not be representative of what the firm looked like when the loan rate was contractually agreed upon. Finally, the tests presented by Petersen and Rajan do not examine credit extensions from a given type of lender, such as commercial banks, although relationships may matter more for banks than for nonbank lenders. Oddly enough, this study is frequently cited as evidence that firm-creditor relationships *do* matter.⁴⁴

In a related paper, Berger and Udell (1995) control for the type of loan and the type of lender in testing whether borrower-lender relationships improve credit terms received by small businesses. They, too, use the 1987 NSSBF but focus their analysis on a specific type of loan—lines of credit—obtained from commercial banks. They, too, analyze the relationship between proxies for the lender-borrower relationship and two different measures of credit terms on these lines of credit: loan rates and collateral requirements. Berger and Udell distinguish between public information about the reputation of a firm (which they say

⁴² Petersen and Rajan (1994), Berger and Udell (1995), and Cole (1998).

⁴³ For the exact questions asked of each firm, see Research Triangle Institute (1989).

⁴⁴ The reason may be that the authors also report findings that a firm's late-payment rate on its trade debt is negatively related to its age, its longest lender relationship, and the share of its debt from a financial supplier. The authors interpret these results as indicating that lender relationships increase the availability of credit.

is associated with the firm's age) and the private information that a bank gathers through its relationships with small business borrowers.

Like Petersen and Rajan, Bergen and Udell find that older businesses and incorporated firms tended to pay lower interest rates. However, Berger and Udell also find that, given a business's age, firms having had longer banking relationships also paid modestly lower premiums over prime on their most recently obtained credit lines. In assessing collateral pledges on outstanding credit lines, the authors report that a firm's age and the age of its banking relationship also affects the likelihood that collateral is required. This result is consistent with the notion that problems of getting information are more acute when banks lend to newer firms or to firms that are newer customers.⁴⁵ At the same time, the quantitative evidence about the benefits of borrower-lender relationships is quite modest. Roughly speaking, Berger and Udell find that each year of the relationship reduces the premium paid over prime by two to three basis points.⁴⁶

A third study, this one by Cole (1998), uses the 1993 NSSBF to examine the relationship between the length and breadth of the borrower-lender relationship and the probability that a firm's most recent loan application is accepted. As with the Petersen and Rajan study, however, most of the results reported by Cole are based on relationships evident for a sample that includes all types of loans.⁴⁷ The multivariate tests also include only subsets of the array of borrower characteristics that are conjectured to affect a lender's acceptance/denial decision. Thus, the measured effects of the borrower-lender relationship may be due to their link to borrower characteristics that are not included in the analysis. The very last results presented by Cole report findings about how a broad set of characteristics of the firm and of the firm-lender relationship is related to credit extensions identified as "working capital" loans. These findings suggest that the major factor explaining higher denial rates between 1991 and 1994 was that firms were applying to lenders with whom they had had no previous financial dealings. For firms having some relationship with the lender, the author finds no systematic link between the age of the relationship (as of 1993) and the probability that a working capital loan was granted. However, there is some evidence that types of other services obtained from a prospective lender do affect loan acceptance/denial rates. Specifically, having an outstanding loan from a prospective lender appears to be associated with

modestly higher denial rates, whereas having a savings account or purchasing other nonchecking financial services tends to be associated with lower loan-denial rates.⁴⁸ Not surprisingly, the timing of the loan application was a major factor explaining acceptance/denial rates. Businesses applying for their most recent working capital loans from commercial banks during 1991 or 1992 were substantially more likely to be denied credit. Finally, older and larger firms tended to have lower denial rates.

Findings about Bank Consolidation

During the 1990s, restrictions on the geographic scope of banking organizations have been significantly liberalized. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which authorizes interstate bank branching, increases the prospect of further industry consolidation, as some banks may choose to branch across state lines. As noted above, concerns about how bank consolidation will affect the availability of small business credit reflect the belief that smaller and larger institutions behave very differently as small business lenders. Larger banks may tend to focus more on credit scoring models or standardized loan products than on relationship-based evaluations tailored to a wide range of small business clients. Changes in the structural composition of the banking industry as well as in the broader financial-services industry may affect which small businesses get credit and the terms that they receive.

Unfortunately, the publicly available NSSBF does not allow one to explore whether the importance of relationships depends on the scale and scope of a lender's financial operations. Thus, to look for evidence about how bank consolidation has affected small business credit availability, researchers have

⁴⁵ Of course, the age of a firm may also reflect the firm's inherent risk, that is, its underlying creditworthiness. Firms that have survived tend to be more-proven risks and therefore more creditworthy customers. Indeed, several other researchers have used a firm's age as a proxy for the firm's default risk.

⁴⁶ To some extent, the Berger-Udell tests are subject to some of the same data problems as the Petersen and Rajan study. For example, in conducting their analysis of the negotiated interest rate, they, too, do not appear to control for how long before 1987 the most recent loan was made. In addition, when assessing how the current age of the borrower-lender relationship is related to collateral requirements on each of a firm's outstanding credit lines, they cannot control for how long before 1987 a credit line was obtained. Survey respondents are not asked to report the date on which they obtained each of their outstanding loans.

⁴⁷ Most of Cole's results are based on the data for the 2,007 firms in the 1993 NSSBF that applied for any credit between 1991 and 1994.

⁴⁸ The number of sources from which a firm buys financial services and the number of a firm's business delinquencies are positively, but modestly, related to a higher rate of loan denial.

turned to the available data on bank commercial loans. The bulk of this research has been aimed at documenting the evident patterns between bank size and small-commercial-loan ratios. Early studies tend to interpret their findings as suggesting that bank consolidation reduces at least the asset share, if not the level, of smaller commercial loans, and more recent papers have argued that consolidation patterns may even increase “small business lending.”⁴⁹

The Call Report data indicate that at smaller banks, smaller loans constitute a much higher share of the commercial lending. An important issue, however, is the extent to which this reflects profitable loan opportunities rather than constraints imposed by the bank’s smaller size. There are very few studies that focus on how business credit terms vary with the size and scale of banking organizations, no doubt because there are few publicly available banking data other than bank Call Reports. Berger and Udell (1996) match Call Report data with information from the STBL (from 1986 through 1994) to examine how the rates and collateralization requirements on C&I loans are related to bank characteristics as reported on Call Reports and to loan characteristics as reported on the STBL. In particular, they study whether credit terms from larger and smaller banks systematically differ.⁵⁰ Their results indicate that for loans in all size classes, larger banks on average charged lower interest rates and were less likely to secure their C&I lending. Thus, although larger banks make proportionately fewer small loans, the loans they do make are priced more cheaply than those from small banks. The authors interpret their findings as being consistent with the conjecture that larger, more-complex institutions engage in less information-intensive relationship lending than their smaller counterparts.⁵¹ Unfortunately, without additional data on the types of C&I loans extended or the characteristics of the borrowing firms, one cannot verify whether this is indeed the case or whether larger banks simply make relationship loans more efficiently.⁵²

A second important issue is the extent to which merger and acquisition alter the lending patterns of the banking entities involved. Most of the bank-consolidation studies using Call Report data can be characterized as event studies, which test for systematic differences in small-loan ratios between firms experiencing the event—here, a merger or an acquisition—and firms not experiencing the event. In other words, this type of research basically compares the behavior of banks involved in merger and acquisition (M&A) activity with the behavior of a “control

group” of banks that have not undergone these structural changes. Researchers classify banks in terms of their M&A activity by using the structural merger and acquisition data collected by bank regulatory agencies. In some papers, banks involved in M&A activity are also classified by other characteristics of the changes in banking structure—for example, large banks that have absorbed small institutions, or banks within a given state that have been acquired by out-of-state organizations. Breaking up M&A activity into a range of events allows a researcher to examine whether small business lending patterns can be related to specific types of M&A activity.

There is a growing number of bank-consolidation studies that use the small-commercial-loan balances reported on the June Call Reports. Two of the most recent of these studies are by Peek and Rosengren (1998) and Strahan and Weston (1998). Peek and Rosengren test whether annual changes in ratios of small C&I loans to assets between 1993 and 1996 differ between banks that were not involved in mergers and banks that were. They classify each merger by how it affects the acquiring institution’s ratio of small loans to assets. For example, if bank A acquired bank B in early 1995, then bank A’s pre-merger loan ratio (from June of 1994) is compared with the ratio obtained by combining the June 1994 balance sheets of bank A and bank B. The authors then measure the relationship between post-merger commercial lending patterns and the pro forma changes in acquirers’ balance sheets. Moreover, they examine whether this relationship varies depending on whether the acquirers are relatively active or inactive as small commercial lenders.⁵³

⁴⁹ There are far more studies of bank consolidation than of relationship lending. This paper discusses only a few of the most recent ones, including Peek and Rosengren (1998), Strahan and Weston (1998), and Berger et al. (1997).

⁵⁰ They test separate models for a number of loan-size classes to see if the determinant of credit terms differs with loan size. Berger and Udell also report interesting evidence about the relationship of loan characteristics to credit terms. Their findings, consistent with those in other small business research, are that larger loans generally have lower interest rates, whereas collateralized loans tend to have higher rates. Thus, collateral appears to be associated with riskier credits across all loan-size classes.

⁵¹ Keeton (1996) and Whalen (1995) also present evidence about the relationship between organizationally complex institutions (such as banks owned by out-of-state holding companies) and small commercial loans.

⁵² The authors do argue that to the extent that small credits are standardized loans, the attendant borrowers may be adequately served by larger institutions. However, they cannot estimate the mix of information-intensive versus standardized C&I loans in the STBL data.

⁵³ Banks whose ratios of small loans to assets are under 10 percent are defined as inactive small business lenders, while banks whose portfolio shares of small business commercial loans exceed 10 percent are defined as active.

The authors report that acquiring banks tend to readjust toward their pre-acquisition ratios of small loans to assets during the year the acquisition took place. Moreover, the magnitude of the readjustment is related to the acquirer's pre-merger presence as a small commercial lender. Acquirers with a heavier concentration of small commercial loans tend to offset decreases in their portfolio share of small loans, and banks with a low pre-merger share of small commercial loans tend to respond by offsetting merger-related increases in this share. The authors also report that small institutions (less than \$100 million in assets) significantly offset merger-related decreases in small-commercial-loan ratios; however, all banks appear to eliminate merger-related increases. On the basis of the merger patterns during the period under scrutiny (mid-1993 through mid-1996), Peek and Rosengren conclude that bank consolidation may actually increase the availability of small loans. In particular, a surprising number of acquiring banks were relatively small institutions with significant small-loan portfolios.

In a similar type of study, Strahan and Weston (1998) use Call Report data for 1993–96 to explore the hypothesis that bank consolidation may reduce small commercial lending by banking firms. They examine how small-C&I-lending ratios are related to the size and organizational complexity of banking organizations. Unlike Peek and Rosengren, however, they analyze banking data for consolidated holding companies because, as they argue, intra-holding company transactions among affiliates could bias the statistical results. The authors present two sets of multivariate tests.

The first examines how the level of a banking organization's C&I loans-to-assets ratio is correlated with various measures of its size and complexity. The "complexity" of a banking organization is defined by the number of its bank subsidiaries, the average size of these subsidiaries, and the number of states in which these banks operate. The results indicate that for organizations with less than \$300 million in assets, there is a positive link between the average size of the bank subsidiary and the ratio of small commercial loans to assets. In other words, for companies below this size threshold, larger subsidiaries have higher ratios of small C&I loans to assets. In contrast, for companies with assets of more than \$300 million, there is a negative link between subsidiary size and ratios of small C&I loans to assets. Generally the tests do not reveal significant links be-

tween the other complexity variables and the loan ratios.

The second set of multivariate tests measures how the *changes* in ratios of small C&I loans to assets (June 1996 compared with June 1993) are related to mergers among banking organizations and to the respective sizes of acquirers and their targets. Unlike Peek and Rosengren, these authors examine changes not only in shares of bank assets but also in small C&I loans relative to total C&I lending.⁵⁴ Strahan and Weston analyze banks that were in existence in June 1993 and were still in existence in June 1996, separating these institutions into organizations that were not involved in any acquisitions and organizations that were. They also sort acquirers into classes that reflect their size (small, medium, and large) and the size of their target (small, medium, and large). They then test how changes in the C&I loan ratios are related to the sizes of the organizations involved in bank mergers.

The results indicate that organizations involved in mergers, on average, had greater increases in the shares of assets allocated to both small C&I and total C&I loans than banks not involved in mergers. However, they are unable to reject the hypothesis that there was no difference in the growth of small loans *as a share of total* C&I loans for these groups. The results also suggest that mergers occurring between smaller institutions (small acquirer and small target) were associated with modest increases in the portfolio shares of both small C&I loans and total C&I loans. Again, however, there is no significant change in small C&I lending *as a share of total* C&I loans for this group. In none of the other size pairings, the authors find statistically significant patterns between changes in C&I loan ratios and mergers. Consistent with the Peek and Rosengren results, these multivariate tests also reveal that for all banks in the sample, bank size was negatively related to changes in small C&I lending, both as a share of assets and as a share of total C&I loans.⁵⁵ Despite the negative effects attributable to bank size, Strahan and Weston interpret their findings as suggesting that a further decline in the percents of independently owned

⁵⁴ They examine changes between 1993 and 1996 in the following ratios: small C&I loans to assets, total C&I loans to assets, and small C&I loans to total C&I loans.

⁵⁵ Not surprisingly, growth in personal income (in the state where a banking organization is headquartered) is positively correlated with both small C&I and total C&I loan ratios during this period.

banks need not adversely affect the availability of small business credit. They base this conclusion on the finding that, all other things being equal, small banks that acquired other small banks on average had modestly larger changes in C&I loans-to-assets ratios than other banks in the sample.

Although the studies by Peek and Rosengren and Strahan and Weston contribute much to our understanding of bank commercial lending patterns, the implications of their findings for the availability of small commercial credits should be interpreted cautiously. Both studies base their sanguine view of M&A activity on balance-sheet ratios for merging banks, however the patterns evident in bank loans-to-assets ratios do not tell us much directly about the aggregate supply of small commercial loans. For example, if active small business lenders account for a very small share of bank assets, then banks' merger activity may have little effect on the allocation of credit dollars in the industry. In particular, the authors do not quantify the dollar changes in small commercial credits that are attributable to mergers.⁵⁶

Moreover, both studies verify that bank size is a major factor explaining the share of assets devoted to commercial loans of less than \$1 million. Thus, as banks merge they get larger and are therefore likely (given legal lending limits) to make larger loans.

Another important consideration in assessing how bank consolidation may affect the supply of small commercial loans is the behavior of other lenders in the commercial loan market. Even if a structural change—such as a merger—reduces one bank's lending focus, other lenders may be willing to make profitable small loans.

A recent study by Berger, Scalise, Saunders, and Udell (1997) uses STBL, Call Report, and bank structure data to examine how mergers and acquisitions have been related to a number of longer-term trends affecting the availability of smaller commercial credits, including the response of other banks to M&A activity. The authors use the STBL data on originations of C&I loans to estimate patterns in small commercial lending for the banking industry between 1980 and 1995.⁵⁷ However, to derive these estimates, the authors must make several important assumptions. First, they must assume that data on loan originations can be used to generate an accurate picture of a bank's outstanding C&I loan portfolio. Second, they must assume that the commercial lending patterns they estimate for banks in the STBL

sample can also be used as estimates for banks with similar characteristics that are not in the sample.

To analyze how lending patterns have been related to mergers and acquisitions, the authors decompose changes in bank small commercial loan ratios into a number of "effects." First, for each institution involved in a merger, they estimate a "static effect" that measures the pure cross-sectional difference in lending that would be attributable to the merged institution's larger size alone. They also estimate a number of dynamic "effects" that they interpret as reflecting longer-run factors that affect small commercial lending over time. These include the characteristics of the merger itself, the secular lending trends that are affecting all banks during this period, and the response of other banks in markets where mergers are occurring. Using the patterns measured at the bank level, the authors then derive aggregate estimates of how M&A activity has affected the dollar volume of small commercial credit in the banking industry during the period under scrutiny.⁵⁸

Their results yield a picture of small commercial lending patterns that is consistent with the results from other studies. They find that mergers of smaller banks are associated with increases in small commercial credits, whereas mergers of large banks are correlated with decreases. The aggregate static effect—that is, the pure size-based effect—of mergers on the volume of small commercial loans is negative and considerable. However, the estimated reaction of other banks in local markets offsets much, if not all, of the contraction.⁵⁹ The authors note that this external effect is probably the least-accurate quantitative estimate presented. Still, they argue that the evidence suggests that despite continuing reductions in small commercial lending by merging banks, the total supply of these credits may not decline.

⁵⁶ To compute the net effect of mergers on the share of banking assets that is allocated to smaller commercial credits, one would have to consider the volume of assets as well as the number of banks.

⁵⁷ They use the STBL loan origination data to estimate the outstanding small C&I loans held by all banks between 1980 and 1995.

⁵⁸ An institution is counted more than once if it is involved in multiple mergers during the period.

⁵⁹ The conclusions of Berger et al. (1997) contrast sharply with those of an earlier study (Berger, Kashyap and Scalise (1995)).

CONCLUSION

While researchers have attempted to understand the dynamics of the credit markets facing small business, the weaknesses in the available data limit the conclusions that can be drawn. Most of the issues of small business credit availability are linked to the costs of lending to small business relative to larger firms. The relative costs of funding small firms reflect the basic characteristics of small borrowers, the ability to gather efficiently financial information on these firms, and the government policies that affect credit market participants. Since there is no data set that includes all of the factors affecting supply and demand in small business credit markets, the results derived from the available data should be interpreted as being consistent with certain conjectures rather than constituting quantitative estimates of market conditions.

Data from surveys of small businesses are useful for measuring how small firms are financed and for relating a firm's characteristics to credit market experiences. However, these data alone do not allow researchers to assess the supply conditions facing small firms. They include little information about lenders and limited information about a firm's financial condition when it obtained loans. Similarly, there is no publicly available source of information about loans extended to small firms by individual commercial banks (or by any other type of lender). Thus, to assess the relationship between the availability of these loans and conditions in the banking industry, researchers are forced to use balance-sheet data on small commercial loan outstandings as a proxy for loans.

The available data can tell us a great deal about the patterns in who the borrowers and lenders are, but they do not allow researchers to adequately address a number of important policy issues. For example, it would be useful to know more about how characteristics of banks and the structure of the banking industry are related to the allocation of credit to small firms. Nor can concerns about bank consolidation be adequately addressed without information about nonbank lenders, especially finance companies. We also know very little about how the availability of small business credit is related to economic conditions over the business cycle.

To better understand demand and supply relationships in small business credit markets, researchers will always need consistent data from both small businesses and lenders. The breadth of the information needed suggests that periodic surveys are generally a more cost-effective source of data than quarterly reporting requirements. Moreover, since small businesses and nonbank lenders are not subject to reporting requirements, voluntary surveys represent the only means by which policymakers can obtain information about issues involving small business credit.

Small business will continue to be an important social and economic force in our society. Thus, public policy that supports small business as an engine of economic growth and the bulwark of competitive markets must be concerned with the availability of credit to these entrepreneurs. If policy decisions regarding small business credit are to be informed, good data must be available.

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Recent Developments Affecting Depository Institutions

by Jane Coburn*

REGULATORY AGENCY ACTIONS

Federal Deposit Insurance Corporation

Chairman Helfer Announces Resignation

On March 14, 1997, Ricki R. Helfer announced her resignation as Chairman of the FDIC, effective June 1. Chairman Helfer's resignation letter to President Clinton stated she achieved the goals she set when taking office on October 7, 1994. Several of these goals included the formation of the Division of Insurance to identify emerging areas of risk and to provide economic data to field examiners; a systematic analysis into the causes of the banking crisis of the 1980s and early 1990s; and the use of a diagnostic approach to bank examinations that focuses on risk. The direction of the agency changed under Chairman Helfer to an agency that stresses the need to help banks stay healthy and serve their communities. The passage of the Deposit Insurance Funds Act of 1996 on October 1, 1996, which resulted in the full capitalization of the Savings Association Insurance Fund, was a notable achievement. Chairman Helfer was the first woman to head a federal bank regulatory agency. *PR-19-97, FDIC, 3/14/97.*

Vice Chairman Hove Named Acting Chairman

Vice Chairman Andrew C. Hove, Jr. became FDIC's Acting Chairman on June 1, 1997. This is Mr. Hove's third term as Acting Chairman, including a two-year period following the death of Chairman William Taylor. Prior to serving as an FDIC Board member, Mr. Hove was Chairman and CEO of Min-

den Exchange Bank and Trust of Nebraska. *PR-39-97, FDIC, 6/2/97.*

FDIC Adopts ADR Policy

The FDIC on January 10, 1997, adopted a policy statement to further its commitment to the use of alternative dispute resolution (ADR) as an attempt to limit litigation or to provide a means of settling disputes. The policy statement was modified because of the re-enactment of the Administrative Dispute Resolution Act.

Real-Estate Survey—January 1997

The outlook for the nation's residential and commercial real-estate markets continued to be favorable during the fourth quarter of 1996, according to the FDIC's January 1997 issue of *Survey of Real Estate Trends*. This is a survey of senior examiners and other experts at the federal bank and thrift regulatory agencies about developments in their real-estate markets. The national composite index that summarizes responses reached 68 in January, up from 67 in October. The commercial index equaled 71 and the residential index was 65. Residential real-estate markets continue to show strength. Commercial markets are improving, with additional reports of rising sale prices and a larger volume of sales of commercial properties. *Survey of Real Estate Trends, January 1997.*

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Reference sources: *American Banker* (AB); *Wall Street Journal* (WSJ); *BNA's Banking Report* (BBR); and *Federal Register* (FR).

Real-Estate Survey—April 1997

The April 1997 issue of the *Survey of Real Estate Trends* reported improvements in real-estate markets across the country. The survey of senior examiners and asset managers at the federal bank and thrift regulatory agencies indicated that during the previous three months overall results were positive, with widespread gains occurring in residential and commercial markets. Residential real-estate markets improved in the Northeast and Midwest regions.

The composite index used by the FDIC to summarize results for both residential and commercial real-estate markets nationwide reached 71 in April, up from 68 in January. The commercial index reached 74, up from 71 in January; the residential index rose to 69 from 65 in January. Values above 50 reflect improving conditions, values below 50 indicate declining conditions. Reports of excess supply in commercial real-estate markets continued to decline because of reports of higher demand for new office space. The housing markets outlook continued to improve in April, with reports of tight supply in every region. *Survey of Real Estate Trends, April 1997.*

Real-Estate Survey—July 1997

The July 1997 issue of the *Survey of Real Estate Trends* reported that conditions in residential and commercial markets improved during the prior three months. The composite index that summarizes the residential and commercial markets moved to 74 in July, up from 71 in April. The regional composite indexes moved upward in July except for the Midwest region, which was unchanged. The West region's composite index and component index had the strongest showing of the four regions. Three hundred federal banking and thrift agency examiners and asset managers responded to the survey. *Survey of Real Estate Trends, July 1997.*

Electronic Banking Safety-and-Soundness Exam Procedures

On January 29, 1997, the FDIC issued safety-and-soundness examination procedures to its examiners that pertain to electronic banking. The procedures focus on planning, administration, internal controls, and policies. These procedures are just one component of a four-part approach to evaluating the risks inherent in emerging electronic banking activities. *FIL-14-97, FDIC, 2/26/97.*

Part 344 Regulations Revised

The FDIC has approved a rule that updates the regulations on securities record keeping and confirmation requirements for insured branches of foreign banks and nonmember banks. The rule revised Regulation 344 with an effective date of April 1, 1997. *BBR, 3/3/97, pp. 400-401.*

1996 Financial Results

The Bank Insurance Fund (BIF) earned \$1.4 billion in 1996, ending the year with a balance of \$26.9 billion. Assessment revenue equaled \$73 million, with interest earned on investments in U.S. Treasury obligations reaching \$1.3 billion. The BIF reserve ratio reached 1.34 percent at year-end 1996. Five banks failed during the year with \$182 million in total assets and \$43 million in estimated losses to the BIF. The Savings Association Insurance Fund (SAIF) grew to a balance of \$8.9 billion at year-end 1996. The SAIF reserve ratio at year-end 1996 equaled 1.30 percent. Net income equaled \$5.5 billion, which included a \$4.5 billion one-time special assessment that capitalized the fund. One SAIF-insured institution failed in 1996 with total assets of \$35 million and at an estimated cost to the SAIF of \$14 million. *PR-21-97, FDIC, 3/25/97.*

1997 Midyear Financial Results

The Bank Insurance Fund earned \$535 million in the first half of 1997, ending the second quarter with a balance of \$27.4 billion. The Savings Association Insurance Fund reached \$9.1 billion with earnings of \$246 million. *PR-58-97, FDIC, 8/26/97.*

Assessment Rates

The FDIC Board voted on May 6, 1997, to leave deposit insurance premium rates unchanged for the remainder of 1997. The assessment rate schedule for the remainder of 1997 ranges from zero basis points to 27 basis points for BIF-insured and SAIF-insured institutions. The FDIC reported that 95 percent of BIF-member institutions and 90 percent of SAIF-member institutions are rated well-capitalized and will continue to pay nothing for their deposit insurance coverage. The FICO rate on BIF-assessable deposits was set at 1.26 basis points; the rate for SAIF-assessable deposits was set at 6.30 basis points. *FIL-59-97, FDIC, 6/6/97; PR-30-97, FDIC, 5/6/97.*

Semiannual Agenda of Regulations

The FDIC published its most recent semiannual regulatory agenda in the *Federal Register* on April 25, 1997. The agenda provides information about the FDIC's current and projected rule makings, as well as information on existing regulations under review, and completed rule makings. Many of the pending regulations have resulted from the FDIC Board's continued efforts to reduce the regulatory burden on banks, simplify rules, improve efficiency, and to comply with the Riegle Community Development and Regulatory Improvement Act of 1994. Of the 30 final or proposed rule changes, 8 were completed, 6 were published as proposals, 14 were expected to be proposed for public comment, and 2

may be issued for public comment. *PR-33-97, FDIC, 5/14/97.*

Proposed Changes to Simplify Deposit Insurance Rules

On April 29, 1997, the FDIC Board proposed changes to clarify and simplify the deposit insurance rules. The changes will make insurance rules less burdensome, more efficient, and easier to understand. The rules will include commonplace illustrations explaining how particular provisions affect basic types of consumer accounts. Also revisions to the following insurance rules are proposed: added flexibility for third-party deposits made by businesses on behalf of their customers, an extended grace period for beneficiaries, and clarification of insurance coverage of living trust accounts. *PR-27-97, FDIC, 4/29/97.*

Foreign Banking Activities

The FDIC Board proposed a rule that would allow well-managed state nonmember banks with international operations to engage in new activities without filing a formal application. The proposed rule consolidates and updates existing regulations with the goal of allowing state nonmember banks to compete effectively internationally. The FDIC's international rules have not been revised since 1979 and will be consolidated into one regulation and reflect inter-agency standards. *PR-45-97, FDIC, 6-24-97.*

Report on Underwriting Practices

The semiannual *Report on Underwriting Practices* found that bank underwriting standards are sound but that some institutions engage in potentially dangerous lending practices. The purpose of the survey is to provide an early-warning mechanism for identifying potential lending problems and to report on the riskiness of current underwriting practices at FDIC-supervised, state-chartered nonmember banks. The focus of the survey is threefold: material changes in underwriting standards for new loans, degree of risk in current practices, and specific aspects of the underwriting standards for new loans. The April issue of the *Report on Underwriting Practices* indicated that 91 percent of the examined banks showed no material change in underwriting practices since their last examination. *Report on Underwriting Practices, FDIC, April 1997.*

Federal Reserve Board

Regulatory Relief

The Federal Reserve Board on February 19, 1997, eliminated numerous rules and application requirements, with the intent to improve the competitive

environment for banks. Tying restrictions have been eliminated and several activities (securities, data processing, consulting, and investment advisory) have been added to the list of activities permissible for bank holding companies. The changes in the rules should also shorten the application processing time related to the Community Reinvestment Act. *AB, 2/20/97.*

Federal Funds Rate Increase

The Federal Reserve Board raised the federal funds rate 0.25 percent on March 25, 1997, to 5.5 percent. The federal funds rate, the rate that banks charge each other for the use of overnight funds, had remained unchanged since January 1996. *WSJ, 3/26/97.*

Regulation CC

The Federal Reserve Board on March 18, 1997, issued a final rule clarifying Regulation CC which governs the availability of funds and the collection of checks. The effective date for the rule is April 28, 1997. The clarification related to the Federal Reserve's check collection and return process. *BBR, 3/24/97, pp. 548-49.*

Regulation M

The Federal Reserve Board has finalized its consumer leasing rules relating to Regulation M. The rules are effective immediately, with compliance optional until October 1, 1997. Regulation M applies to leases of personal property valued at less than \$25,000 and when the lease term exceeds four months. *BBR, 4/7/97, p. 638.*

Regulation Z

The Federal Reserve Board has revised Regulation Z, the Truth in Lending Regulation. The revised ruling provides guidance on the treatment of fees associated with mortgage loans and error tolerances because of the disclosure of finance charges and other costs. The rule became effective February 28, 1997, with compliance optional until October 1, 1997. *BBR, 3/10/97, pp. 444-45.*

Examination Frequency

On January 24, 1997, the Federal Reserve Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision issued an interim rule and request for comment on a proposal to expand the examination frequency cycle for particular institutions. Examination frequency will be expanded to an 18-month cycle for 2-rated, well-managed banks from the current asset size limit of \$100 million to a new limit of \$250 million. *Federal Reserve Bulletin, March 1997.*

Office of the Comptroller of the Currency

Derivatives Handbook Published

The OCC issued guidelines to national bank examiners relating to derivatives trading. The lengthy handbook includes guidelines on bank employee compensation, validation of national banks' risk measurement models, and early termination agreements. *AB, 1/27/97.*

National Access Committee Formed

The Comptroller has formed a National Access Committee to support research, policy development, and outreach efforts to meet the OCC objective of improving access to financial services for the public and to support national banks' new product and geographic markets. The committee, which plans to meet quarterly, includes 12 OCC employees and is chaired by the Assistant Deputy Comptroller for Compliance Management. *NR-97-28, OCC, 3/14/97.*

Revenue Report

The Comptroller issued a working paper titled, "Profit Persistence in Large U.S. Banking Companies." The working paper concluded that banks earn higher profits by focusing on revenue-enhancing businesses rather than by focusing on cost-cutting measures. The study reviewed 237 large bank holding companies during 1986-92. *AB, 2/28/97.*

Rules Changed for Bank Fiduciaries

On December 27, 1996, the OCC released final changes to the regulations that govern the fiduciary activities of national banks. These rules, which have not been reviewed since the mid-1960s, became effective January 29, 1997. The rules include standards for how national banks hold and invest assets for their beneficiaries. *BBR, 1/6/97, p. 6.*

Director's Handbook

The Comptroller has published a handbook describing the responsibilities of national bank directors. The handbook, "The Director's Book: The Role of a National Bank Director," was last revised in 1987. The handbook explains bank directors' responsibilities in overseeing the operations of a bank. *AB, 4/9/97.*

International Comparison

The Comptroller released a study titled, "Commercial Banking Structure, Regulation, and Performance: An International Comparison," on March 24, 1997. The research found no adverse effects for banks that are allowed to conduct a range of securities, insurance, and real-estate activities directly or

through subsidiaries. The OCC reviewed the banking environments of 19 countries. *BBR, 3/31/97, p. 594.*

Housing Video

The OCC has produced a videotape and workbook that demonstrates to national banks how to participate in the federal low-income housing tax-credit program. The discussion includes how national banks can participate in providing affordable rental housing using the federal program under the investment authority provided national banks by the OCC's community development and other public welfare investment regulations. *BBR, 6/2/97, p. 1,045.*

Virtual National Bank

The OCC has chartered the first virtual national bank, although the bank will not operate on the Internet. The bank intends to operate using telephone connections or customers' personal computers and offer deposit products and electronic bill payment. The Houston-based Compubank was chartered late this summer and will begin operations on February 1, 1998. *AB, 8/29/97.*

Federal Financial Institutions Examination Council

Call Report Changes

Beginning with the June 30th Call Report, filers will report residential mortgage assets separately from other assets and mortgage derivatives separately from other securities. Additional details on the maturities of residential loans and mortgage derivatives will also be required. *AB, 3/4/97.*

CAMELS Guide

The FFIEC has published a question-and-answer guide explaining the new S-component in the CAMELS supervisory rating system. The guide clarifies the revised CAMELS rating system that the financial institution regulatory agencies adopted in December 1996. The guide addresses questions such as how the S-component, which is a measure of sensitivity to market risk, will be determined and its importance relative to the composite rating. The sixth component of the CAMELS rating system reflects the degree to which changes in interest rates, foreign-exchange rates, commodity prices, or equity prices can influence an institution's earnings or capital. The S-component represents the institution's management ability to identify, measure, monitor, and control market risk. Also considered as part of the grading of the S-component is the institution's total asset size, complexity of activities, and the level of capital and earnings with respect to the level of market risk exposure. *FIL-17-97, FDIC, 3/7/97; FIL-105-96, FDIC, 12/26/96; Regional Directors Memorandum, 97-004, FDIC, 1/8/97.*

Year 2000 Conversion

The FFIEC issued a statement to financial institutions addressing the Year 2000 date change. The statement provides guidance on the activities needed to make computer systems capable of recognizing dates after 1999. The statement encourages financial institutions to reprogram their computer systems to adapt for the date change. The FFIEC included a five-point plan—awareness, assessment, planning, validation, and implementation. The statement indicated that bank regulators will review financial institutions' efforts by mid-1998. *FIL-50-97, FDIC, 5/9/97.*

Office of Thrift Supervision

Lending Rule

The Office of Thrift Supervision (OTS) finalized a new rule that allows federal thrifts to lend twice as much to commercial borrowers. The rule will allow thrifts to lend up to 20 percent of assets, with stipulations for small-business loans. The rule became effective April 3, 1997. *AB, 4/9/97.*

Holding Company Report

According to an OTS report titled "Holding Companies in the Thrift Industry," one-third of all thrift assets are held by savings-and-loan companies with some non-banking-related activities. The OTS reports that ownership of a thrift by a commercial firm includes the following advantages: enhanced access to capital markets, lower borrowing costs, and customer service advantages. *BBR, 4/21/97, pp. 758-59.*

Liquidity Level

The OTS has proposed a rule change to lower its minimum liquidity requirements for SAIF-insured institutions. The OTS would lower the liquid asset requirement to 4 percent. *BBR, 5/19/97, p. 958.*

New Federal Thrifts

The OTS has initiated new rules to simplify the paperwork requirements and reduce administrative costs for forming a new federal savings institution. The new rules are effective July 1, 1997. *BBR, 5/26/97, p. 1,007.*

Thrift Depositor Protection Oversight Board

The House Banking Committee unanimously agreed to abolish the Thrift Depositor Protection Oversight Board. The Board was created in 1989 during the savings-and-loan debacle with the pur-

pose of overseeing the Resolution Trust Corporation (RTC). The RTC was abolished in 1995. *BBR, 9/15/97, p. 400.*

National Credit Union Administration

The Supreme Court on February 24, 1997, agreed to rule on whether credit unions may serve employees at more than one company. The Court will be making a decision whether to overrule the federal appeals court decision requiring all members of a credit union to share a single, common bond. This case originally began in North Carolina in 1990. *AB, 2/25/97.*

Federal Housing Finance Board

New Ruling

The FHFB approved a rule that allows Federal Home Loan Banks to lend to borrowers that are not members of the System. Previously, FHFB approval was required. Nonmember institutions must meet several criteria to be eligible to receive advances. *AB, 2/20/97.*

Mortgage Partnership Finance Program

The FHFB approved a pilot program to find new ways of funding and managing home mortgages. The Mortgage Partnership Finance Program is being tested at the Chicago FHLBank. The potential benefits of the pilot include greater credit availability for housing finance and increased profitability for member banks. *BBR, 1/13/97, p. 79-80.*

Qualified Thrift Lender

The FHFB approved an interim final rule on February 6, 1997, to aid the FHLBank System in determining whether commercial bank and credit union members satisfy the qualified thrift lender (QTL) requirements. The new rule allows FHLBanks to accept supplemental financial information not available in quarterly Call Reports. The rule allows for more assets that savings associations are permitted to use to qualify for the QTL standards. Savings associations may now include the full amount of educational, small-business, and credit-card loans. *BBR, 2/10/97, p. 270.*

Eligibility and Pricing Rule

The FHFB on February 19, 1997, approved a rule that establishes uniform eligibility and pricing requirements for FHLBank System advances to non-member state housing finance agencies. *BBR, 2/24/97, p. 368.*

Community Support Program

The FHFBS adopted new rules governing its Community Support Program. The new rules streamline the program's documentation review process and reduce compliance requirements to a one-page community support statement. The ruling also addresses uniform performance standards for all members of the FHLB System and a com-

mitment to promote housing finance and support local communities. *BBR*, 5/12/97, p. 903-904.

Securities and Exchange Commission

The SEC approved a rule requiring extensive disclosure about the financial risks posed by derivatives. The rule should enable investors to understand better how a company uses derivatives. The rule becomes effective in 1998. *WSJ*, 1/29/97.

STATE LEGISLATION AND REGULATION

Alaska

Alaska enacted a new trust fund law on April 1, 1997. The state has removed all limits on the life of a trust established in the state. And there will not be any limits on how long individuals can remain beneficiaries of their own trust. *AB*, 4/21/97.

Arkansas and Nebraska

Arkansas and Nebraska have enacted interstate branching legislation, effective May 31, 1997. *BBR*, 3/31/97, p. 611.

Colorado

Colorado's Governor approved legislation allowing banks and other financial institutions to sell insurance. Banks, thrifts, and credit unions will be allowed to sell insurance and annuities. The new rule supersedes the limitation of selling insurance in communities of less than 5,000 people. Both banking and insurance professional associations favored the legislation. *BBR*, 5/19/97, p. 951.

Connecticut

Connecticut's state legislature has developed a new state charter to encourage the formation of new banks. The purpose of the new community bank charter is to increase the availability of banking services to small businesses and other customers not served by large banks. The new charter is expected to be approved by the Connecticut General Assembly. *AB*, 1/24/97.

Connecticut's state legislature passed legislation that would allow state-chartered banks to sell insurance. The Governor of Connecticut approved this legislation on July 8. *AB*, 6/10/97.

Delaware

Delaware's state legislature passed legislation this summer that protects trust assets from creditors. The new trust legislation also waives public filing of trust agreements and assigns trust rulings to the state chancery court instead of local courts. This law was passed to enable Delaware to remain competitive

with the recently enacted Alaskan trust law. *AB*, 7/24/97.

Illinois

Both houses of the Illinois General Assembly approved legislation that would allow state-chartered banks to sell insurance products. *BBR*, 6/2/97, pp. 1,038-39.

Maine

The Maine state legislature approved a small-business bank charter, with the institutions termed merchant banks. These merchant banks, considered nonbanks, will not accept deposits nor be regulated by federal bank regulatory agencies. *AB*, 4/21/97.

On June 5, Maine's legislature created a new charter for financial institutions in the state. All new charters issued in Maine will be universal banks, with all institutions granted the same powers. Prior restrictions applicable to savings banks and thrifts have been eliminated. State-chartered banks, savings banks, and thrifts became universal banks and will share powers that were previously unique to each charter. *AB*, 6/11/97 and *BBR*, 6/16/97, p. 1,147.

Mississippi

On March 10, 1997, the Governor of Mississippi signed legislation that clarifies that state-chartered banks have insurance powers equal to those of national banks. *BBR*, 3/31/97, p. 611.

Montana

The Montana legislature has voted to opt out of the Riegle-Neal interstate branching law. The newly signed state law will forbid interstate branching until September 30, 2001. The state will allow statewide branching for the first time; previously, banks could only branch within their home county and adjoining counties. Montana and Texas are the only two states to opt out of interstate branching. *AB*, 4/8/97.

New Hampshire

New Hampshire state banks will be able to sell insurance in communities with 5,000 or fewer resi-

dents beginning in 1998. The state insurance commissioner will regulate the sale of insurance by financial institutions. The law requires that banks keep banking and insurance activities separate. *BBR*, 7/7/97, p. 26.

Pennsylvania

Pennsylvania's Governor signed legislation allowing state banks to sell insurance. The new law was passed without any restrictions on where state-chartered banks may sell insurance. The law does prohibit the receiving of a loan based on the borrower purchasing insurance from the same bank. *AB*, 6/30/97.

Utah

Utah's Governor signed legislation ending a ten-year freeze on the issuance of industrial loan compa-

ny charters. Industrial loan companies will be permitted to make loans and are FDIC-insured. The new law allows companies to enter the banking business without the Federal Reserve Board supervision required for bank holding companies. The industrial loan charter will allow similar powers to those of a national bank except for checking services. *AB*, 4/3/97.

Wyoming

The Wyoming legislature has voted to opt in to the Riegle-Neal interstate branching law. The interstate banking bill will allow interstate branch banking and bank mergers in the state. The Governor is expected to sign the legislation later this year. *BBR*, 2/24/97, p. 365.

BANK AND THRIFT PERFORMANCE

1996 Results

Commercial banks' full-year earnings were \$52.4 billion in 1996, setting a new record. This was an increase of \$3.6 billion (7.5 percent) over 1995. Commercial banks' full-year return on average assets (ROA) rose to 1.19 percent, up from 1.17 percent in 1995. This is the second-highest annual ROA reported by the industry, after the 1.2 percent registered in 1993.

Approximately \$13.7 billion in net earnings was reported for the fourth quarter of 1996. This represented the third-highest quarterly net income ever reported. Approximately 60 percent of insured banks reported earnings gains for 1996, and more than two-thirds of all banks reported full-year ROAs of 1 percent or higher. Noninterest income contributed heavily to the record level of earnings in the fourth quarter, which was 13.3 percent higher than in the fourth quarter of 1995. The number of problem banks dropped to 82 in 1996, down from 144 for 1995. The total assets of problem banks declined 71 percent during 1996, falling to \$5 billion.

Profits earned by FDIC-insured savings institutions reached \$2.2 billion in the fourth quarter, for an average annualized ROA of 0.85 percent. Net interest margins held relatively steady in the fourth quarter, rising to 3.24 percent from 3.22 percent in the third quarter. The number of problem savings institutions fell to 35 in 1996, down from 49 in 1995. The assets of problem savings institutions fell 50 percent, to \$7 billion in 1996. *FDIC Quarterly Banking Profile, Fourth Quarter 1996; PR-16-97, FDIC, 3/13/97.*

First-Quarter Results for 1997

Commercial banks' average return on assets—the industry's performance barometer—was 1.26 percent

in the first quarter. It was the 17th consecutive quarter that the industry's ROA exceeded one percent and the fourth-highest ever reported. Insured commercial banks earned a record \$14.5 billion in the first quarter. Earnings were fueled by strong growth in interest-earning assets and continued increases in noninterest income. The number of problem banks dropped to 77, down from 82 in 1996. There were no bank failures in the first quarter of 1997.

Profits earned at FDIC-insured savings institutions were \$2.4 billion in the first quarter, for an average annualized ROA of 0.96 percent. This represents a decline in earnings of \$136 million from the same period last year. The number of problem savings institutions remained unchanged from year-end, at 35. The total assets of problem savings institutions declined to \$5.3 billion from \$7.0 billion. *FDIC Quarterly Banking Profile, First Quarter, 1997; PR-42-97, FDIC, 6/17/97.*

Second-Quarter Results for 1997

Commercial banks' average return on assets (ROA) was 1.25 percent in the second quarter, up from 1.18 percent in the first half of 1996. This is the 18th consecutive quarter that the industry's ROA exceeded 1 percent. Insured commercial banks earned a record \$14.6 billion in the second quarter—a \$154 million improvement over the record the industry set in the first quarter. Earnings were fueled by a surge in commercial and industrial lending. The profitability of credit-card lenders—74 institutions where credit-card loans are more than half of their total loans—has significantly eroded over the past three years. Almost half of these institutions reported declining income in the second quarter, with 14 credit-card banks losing money in

the quarter. This drop in profitability is because of a rise in charge-offs, with credit-card charge-offs accounting for two-thirds of all loan charge-offs reported by commercial banks during the second quarter. The number of problem banks dropped to 74, down from 82 in 1966. There were no bank failures in the first half of 1997.

Profits earned at FDIC-insured savings institutions reached \$2.4 billion in the second quarter, for an average annualized ROA of 0.95 percent. The number of problem savings institutions fell to 29 at midyear from 35 institutions at the end of the first quarter. Assets of problem savings institutions declined to \$2.8 billion. *FDIC Quarterly Banking Profile, Second Quarter, 1997.*

RECENT ARTICLES AND STUDIES

The U.S. General Accounting Office (GAO) released a study on January 6, 1997, titled, "Japanese Bank Regulatory Structure." *AB, 1/8/97.*

A Federal Reserve Board study finds that non-banks are making gains against traditional consumer lending institutions. The study found that finance and other loan companies are growing faster than traditional sources of consumer lending. The study was published in the January 1997 issue of the *Federal Reserve Bulletin*. *AB, 1/16/97.*

On March 26, 1997, the GAO released a report titled, "Material Loss of Oversight Information From Interstate Banking Is Unlikely." The report concludes that interstate branching is unlikely to result in a material loss of information needed for regulatory oversight and modification of regulatory reporting requirements is not necessary. *GAO/GGD-97-49, March 1997.*

The Federal Reserve Bank of Boston published a study on bank consolidation with regard to borrower concentration limits. The study, "Have Borrower Concentration Limits Encouraged Bank Consolidation?", reviews motivations for bank mergers and their regional patterns. *FRB of Boston, New England Economic Review, January/February 1997.*

The GAO issued a report on March 27, 1997, warning of the risks associated with mergers between banks and nonfinancial firms. The GAO report predicted few benefits from combining banking and commerce. *AB, 3/31/97, p. 459.*

The Federal Reserve Bank of New York released a report detailing information that increased household debt tends to signal increased consumer spending. The more common thought is that spending will drop as debt increases. *BBR, 3/10/97, p. 459.*

The Federal Reserve Bank of St. Louis released a study finding that the new policy of immediately disclosing Federal Open Market Committee decisions has been beneficial. The study found that the concerns about an announcement effect and increased

financial market volatility were unwarranted. *WSJ, 5/2/97.*

The Federal Reserve Bank of St. Louis and the University of Missouri produced a report titled, "Do Markets and Regulators View Bank Risk Similarly?". The conclusion of the research was that market forces are not a substitute for government regulation of banks, because regulators and investors view risk differently and regulators require adequate capital to guard against bank failure. *AB, 5/9/97.*

The Federal Reserve Bank of Cleveland has concluded that the central bank can increase consumer spending in the short term but is unable to increase real economic growth. The report is titled, "Monetary Policy and Real Economic Growth." *AB, 6/31/97.*

The Congressional Budget Office released a study claiming that a separate thrift industry is no longer needed because of the fact that home mortgage loans are readily available to the public. The large secondary market for mortgage debt is a significant reason for the CBO's finding. *BBR, 6/23/97, p. 1,181.*

The Office of the Comptroller of the Currency published a study stating that deposit insurance does not give banks a significant subsidy. The study claims that the net insurance-related subsidy enjoyed by a bank is minimal and may be negative. The study entitled, "The Competitive Implications of Safety Net-Related Subsidies," is available from the OCC. *AB, 7/11/97.*

Support Group for Modern Banking

A new banking group entitled the Support Group for Modern Banking was formed in March. The managing trustee, Carter Golembe, stated the purpose of the group is dedicated to preserving recent gains and expanding the national bank franchise. Eighteen industry leaders are the founding members with the goal of participating in litigation, filing comment letters, and writing policy papers; lobbying is not planned. *AB, 3/31/97.*

INTERNATIONAL DEVELOPMENTS

Basle Committee

The Basle Committee on Banking Supervision has issued a 12-point list of principles to improve bank management of interest-rate risk. The list, which was issued on January 21, 1997, also eliminated the effort to incorporate a capital charge for interest-rate risk into its bank risk-based capital rules. Overall, the principles state that banks need a risk management process that identifies and monitors interest-rate risk. *BBR, 1/27/97, pp. 177-78.*

Canada

The Canadian government announced on February 14, 1997, that foreign banks will be allowed to operate in Canada directly through branches. Presently, foreign banks operate through subsidiaries, meeting costly capital and regulatory requirements. The United States has long favored this change. Canada expects this decision will encourage new banks to enter the Canadian market and to improve the competitive environment for foreign banks. Legislation to enact this change in bank policy will occur later in 1997. *WSJ, 2/18/97.*

China

China is preparing to permit more foreign investment in the country's insurance and banking sector. China has indicated a readiness to allow more foreign investment but has not established a time-line for relaxing the current limitations. *BBR, 3/1/97, pp. 527-28.*

England

The British government announced in May that the Bank of England will exercise its monetary policy responsibilities independent of the Treasury and that the Bank's supervisory powers will be transferred to the Securities and Investments Board. The Securities and Investments Board is an umbrella organization that oversees a variety of other regulators. British authorities based the removal of bank supervision on the fact that the distinctions between banking, securities firms, and insurance companies are no longer clear. *The Financial Times, 5/21/97, p. 1.*

Japan

Japan has agreed to lift its ban on the formation of holding companies, beginning January 1998. However, the formation of holding companies will not be allowed if it leads to an excessive concentration of business power. A holding company exceeding \$125 billion in assets will be subject to close government examination. The Japan Fair Trade Commission is expected to issue effective cease-and-desist measures for violations. *BBR, 3/3/97, p. 426.*

Japanese consumers are placing substantial funds in foreign-currency deposits and other products sold by foreign banks in Japan. Low interest rates and bad-debt troubles are two contributing factors. Two years ago, foreign banks' share of foreign-currency deposits equaled 5 percent; today, it is 15 percent. *BBR, 9/8/97, p. 382.*

Bank of International Settlements Quarterly Report

The 1997 first-quarter report of the Bank of International Settlements (BIS) stated that the international banking market remained healthy but there is cause for concern. The area of concern is the large cross-border investment flows because of interest-rate differentials. The BIS recommended tighter rules for credit risks and the need to strengthen international risk-control systems. Also of concern is the establishment of the European Monetary Union. *BBR, 6/2/97, p. 1,056.*

Romania

Romania has legalized the privatization of state banks. The measure was signed on May 19, 1997. The government of Romania is scheduled to sell five state banks this year. The state-owned banks will be marketed to local or foreign investors through capital increases, share auctions, or both. *BBR, 6/2/97, p. 1,060.*

Russia

The Russian Central Bank has developed new restrictions for foreign banks operating in Russia. The restrictions include the doubling of capital and the adding of more Russian citizens as employees. The rules became effective May 15, 1997. *BBR, 5/19/97, p. 973.*