

SUMMARY: BUSINESS ACCESS TO CAPITAL AND CREDIT

A Federal Reserve System
Research Conference

Proceedings of a Conference
Held in Arlington, VA
March 8-9, 1999

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Acknowledgements

The views expressed in this paper are those of the author and do not necessarily represent those of the Federal Reserve Bank of Philadelphia or of the Federal Reserve System. Thanks to Loretta Mester, Glenn Canner, and Harvey Rosenblum for their comments, and to Sally Burke for excellent editorial assistance.

The keynote address given by Alan Greenspan, Chairman, Board of Governors of the Federal Reserve System is also reprinted in this publication. The full text of the proceedings is available electronically at the various Federal Reserve System web sites. A complete listing of these web sites is provided at the end of this publication.

PREFACE

The availability of business capital and credit is an essential component of healthy communities. Research on the relationship between small business and credit providers can provide information that is critical for dynamic markets.

*Alan Greenspan
Chairman, Board of Governors
of the Federal Reserve System*

The Community Affairs Officers of the Federal Reserve System are pleased to present the proceedings of the *Business Access to Capital and Credit* conference, held March 8 and 9, 1999, in Arlington, VA. The proceedings include papers or summaries of the papers presented by distinguished economists and scholars from across the country. Each paper is reviewed by one or more of the conference discussants, who have also done extensive research on the topic. We are grateful to the authors and discussants for sharing their findings on an important aspect of our free enterprise system.

This research represents the latest work in the field from academia, policy institutions, and the Federal Reserve System. The papers and the reviews offer fresh insight into the small business lending relationship, access to credit for minority-owned businesses, microenterprise lending, and credit scoring.

These proceedings are designed to further understanding of small business lending and credit issues among scholars, practitioners, and policymakers. We hope that future conferences and publications like this one will further encourage ongoing research and discussion of these and other topics related to community and economic development.

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*Glenn B. Canner, Board of Governors
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Note: The paper by David C. Blanchflower, Dartmouth College; Phillip B. Levine, Wellesley College; and David Zimmerman, Williams College, "Discrimination in the Small Business Credit Market" is a National Bureau of Economic Research Working Paper, No.W6840, issued December 1998. It is downloadable from the National Bureau of Economic Research website at www.nber.org.

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THE CONFERENCE ON BUSINESS ACCESS TO CAPITAL AND CREDIT: AN OVERVIEW

Richard W. Lang
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Interest in businesses' access to capital and credit has been widespread for many years. But recently, the intensity of this interest has risen as the nation has experienced increasing consolidation in the financial industry and as technology has affected the process of extending credit. In particular, more attention has been paid in recent years to *small businesses'* access to capital and credit, including the availability of capital and credit to minority- and women-owned firms. Many community economic development efforts are focused not only on the provision of affordable housing but also on the health of a community's small businesses.

Recognizing the importance of businesses' access to capital and credit in community development, the Community Affairs Officers of the Federal Reserve System set about to find ways to broaden understanding of the issues involved and to encourage further research about them. One component of this effort was a conference held on March 8-9, 1999 in Arlington, VA. Papers covering a wide range of topics related to credit availability were presented and are summarized here. Some of the papers were more preliminary in nature than others, and several of the authors stressed that the results of their work should be considered tentative and as starting points for further discussion and debate. Discussants in each session were asked to provide broad comments on the research in the field as well as specific comments about the papers in each session. The intent was to provide the audience with a broad perspective on the subjects on which the research papers focused. The reader can therefore obtain a good overview of other literature in the field by reading the discussants' comments.¹

Both Federal Reserve Board Chairman Alan Greenspan and Federal Reserve Governor Edward Gramlich helped to frame the

This summary includes authors' quotations, with page references to the full proceedings volume. The views expressed in this paper are those of the author and do not necessarily represent those of the Federal Reserve Bank of Philadelphia or of the Federal Reserve System. Thanks to Loretta Mester, Glenn Canner, and Harvey Rosenblum for helpful comments, and to Sally Burke for excellent editorial assistance.

themes of the conference. Small businesses nationwide have grown, as has bank lending to small businesses. The long economic expansion and strong productivity growth have provided a positive environment for businesses, both those with traditional lines of business and those engaged in new technologies. In fact, small businesses have been crucial players in recent advances in technology that have helped improve productivity. In this environment, small businesses generally have been upbeat about credit conditions, which Governor Gramlich attributed to competition in the market for small-business credit and to the recent changes in the Community Reinvestment Act (CRA) regulations. But bank mergers and acquisitions have also grown in recent years, raising some concerns that consolidation in the banking industry might curtail the supply of credit to small businesses over time. On the other hand, bank deregulation may be helping to encourage out-of-market banks to increase credit availability in communities experiencing mergers, and nonbank lenders are expanding their presence in the small-business lending market. New technologies, including credit scoring and securitization of loans, are also beginning to be used more extensively. These developments may be offsetting any reduction in credit that may occur as banks consolidate, but raise questions about the future role of commercial banks in providing credit to small businesses.

The conference was organized into six sessions. The three papers in the first session highlighted the CRA data on small-business lending, a new set of data that has become available in the past two years. The three papers in the second session focused on access to credit for minority-owned businesses while at the same time serving to highlight another source of data on small business lending: the National Survey of Small Business Finances (NSSBF).

The six papers in the next two sessions focused on various aspects of the lending relationship, including: the availability of loans to small businesses from large versus small banks; the effect of bank consolidation on small businesses' access to credit; the role that state bankruptcy provisions play in the availability of credit to small businesses; and the sources of small-business financing in two ethnic neighborhoods in Chicago.

The fifth session of the conference included two papers on microenterprise lending. One examined the feasibility of using microenterprise lending as a means to assist women to move from welfare to work. The other focused on the determinants of successful microenterprise lending in communities in the U.S.

The final session included two papers that discussed the roles of credit scoring and securitization in the availability of business lending.

CRA Data on Small-Business Lending

The paper by Federal Reserve Board economist **Glenn Canner**, *Evaluation of CRA Data on Small Business Lending* discussed the newly available information for 1996 and 1997 on small loans to nonfarm businesses and small loans to all size businesses extended by large commercial banks and savings associations. These lenders were required to collect these data following the 1995 revision to the CRA regulation, which specifically encourages depository financial institutions to make their products and services available in all parts of their local communities, including low- and moderate-income areas. Although the CRA data have a variety of limitations, Canner notes that these new data do provide opportunities to gauge the flow of credit to small businesses in low- and moderate-income communities. Canner argues that the CRA data are quite comprehensive despite the relatively small proportion of all banks and savings associations covered by the regulation's reporting requirements. These data account for about two-thirds of the credit provided to small businesses by all commercial banks and savings associations, and these institutions account for about 45 percent of the loans made to small businesses by all sources.

Nevertheless, Canner cites several limitations of these CRA data, noting in particular that they don't include as much information on small-business lending as Home Mortgage Disclosure Act (HMDA) data on home lending. For instance, the CRA small-business lending data don't include individual applications for such loans, only loans made or purchased that are aggregated into three loan sizes and reported by census tract. The CRA data therefore don't include information about a loan applicant's income, gender, race, or ethnicity. Although the small-business loans are reported by the census tract in which the small firm's address falls, borrowers might use the loan's proceeds in other locations not captured by this address. In fact, some borrowers use post office boxes instead of street addresses, and the census tract of the post office box may not tell much about the area that is actually benefiting from the loan. Canner stresses that no information about the local demand for business credit nor about the supply of credit is available in the CRA data. Also, a small number of credit card banks account for nearly 30 percent of the *number* of the reported small-business loans in these data, even though they account for about 3 percent of the *dollar* amount of such lending. So he cautions that a researcher must be careful in using these CRA data and must decide how to choose the sample of the data that is relevant for the research question being examined.

Canner examines the CRA data in a number of different ways. He finds that small-business lending is heavily concentrated in central city and suburban areas, which is also where the bulk of the nation's

population and small businesses are located, and that the national lending figures for both 1996 and 1997 suggest that small-business lending varies by neighborhood income category and by racial and ethnic category in much the same way as the population and the number of businesses. While small-business lending is distributed much more evenly across neighborhood income categories than home lending, the distribution of loans by racial and ethnic composition is more skewed than the distribution of loans by neighborhood income category, with minority areas tending to receive fewer numbers of loans and lower dollar amounts of loans.

In a multivariate analysis that took into account the number of businesses by industry and by size of revenues, population, median income of households, and percent minority of the population, Canner finds that, "The proportion of the census tract population that is minority is inversely related to the number, but not the dollar amount, of small-business loans." (Page 68) When Canner disaggregates the broad minority population into its components, he finds that "only the proportion of residents that are Asians in an area is consistently related to small-business lending measured by both numbers of loans and loan dollars" in that *both* numbers and dollar amounts of loans decline. (Page 68) For all other racial or ethnic groups, he still finds that the number of loans falls but the dollar amount of loans rises. Canner believes this result underscores the complexity of the relationship between small-business lending and neighborhood racial and ethnic composition, and he cautions against drawing strong conclusions, since his analysis doesn't include information about the creditworthiness or credit needs of businesses in each area, or the credit standards being applied by lenders to different types of industries or the different types of loans being offered. "Without such detailed information, it is not possible to fully explain any relationship found between neighborhood racial and ethnic composition and small-business lending." (Page 67)

The two papers that followed Canner's pointed out that what is true of the nation may not be true within a smaller geographic area. In particular, **Greg Squires** and **Sally O'Connor**, in *Access to Capital: Milwaukee's Small Business Lending Gaps*, argue that in Milwaukee, Wisconsin, the CRA small-business lending data show a much higher concentration of lending in upper-income areas than is true nationwide and that lending to small businesses in the four-county Milwaukee MSA is below national levels, particularly in low-income areas of Milwaukee. Their data suggest that Black and Hispanic communities receive relatively small shares of small business loans and loan dollars when compared to predominantly White communities. Squires and O'Connor also examine the 1996 and 1997 CRA lending data from individual banks and savings associations and find substantial differences among area lenders in the distribution of their loans

by neighborhood income level and by size of businesses, even after accounting for population and number of businesses in an area.

Squires and O'Connor note that the sources of the differences in Milwaukee's small-business lending patterns across communities with different income and racial composition "may reflect differences in demand, creditworthiness of borrowers, unfamiliarity on the part of potential borrowers and lenders about prevailing opportunities, unlawful discrimination, Milwaukee's low rate of minority business ownership and representation in corporate management compared to other metropolitan areas (Norman, 1998), and a range of other factors. But these are clearly not random fluctuations." (Page 94) In his presentation of the paper at the conference, Squires commented on how the collection and public disclosure of HMDA data had, over time, changed the pattern of mortgage lending, and he went on to note that "the utility of these [CRA small-business lending] data in changing lending patterns will depend on the policy debate."

Squires and O'Connor conclude their paper by suggesting three changes to small-business lending disclosure requirements that they believe would enhance the value of the data and help sort out the sources of the differences in lending patterns they observe in Milwaukee: (1) lenders should report the number of applications for small-business loans along with the disposition of the applications; (2) data should be collected by race and sex of the applicant (which would require amending the Equal Credit Opportunity Act, which currently forbids collecting such information); and (3) the CRA small-business lending data should be reported for each lender by census tract (rather than by income category of census tracts), with information on the racial composition of the census tracts, similar to the way HMDA data are now reported.

In *Intraurban Patterns of Small Business Lending: Findings from the New Community Reinvestment Act Data*, Dan Immergluck of the Woodstock Institute examines CRA small-business lending data for the six-county Chicago MSA that differ by income and racial composition.² Immergluck, like Squires and O'Connor, uses loans-per-business in his analysis by combining the CRA data with Dun and Bradstreet data on small businesses in each census tract in the Chicago MSA. He begins by noting that loans-per-business are higher in high-income tracts than in low-income tracts. He then conducts a multivariate analysis by running a regression of the number of loans made in census tracts on the number of firms, firm size, neighborhood income, the proportions of Blacks and Hispanics residing in each tract, and the proportions of firms that are manufacturing, wholesale, or retail in each tract. After controlling for these factors, Immergluck finds that lower-income, minority tracts have fewer loans than higher-income, White tracts. He finds the difference is particularly large for tracts with high proportions of Hispanics. Immergluck also attempts to account for the possibility that

the characteristics of nearby census tracts might affect his empirical findings by estimating another model, called a spatial lag model, that includes lending levels of other neighborhoods within seven miles of each census tract. He weights these neighboring observations in the model, placing less weight on lending in neighborhoods farther away. Although the magnitudes of the differences between low-income, minority census tracts and high-income, White tracts are reduced in this second model, Immergluck finds that they remain substantial, particularly for tracts with high proportions of Hispanics.

Immergluck's study concludes that "While these data are not adequate to confirm the existence of lending discrimination, lower-income and minority areas suffer from lower lending rates than higher-income and White neighborhoods, after controlling for industrial mix, firm size, and firm population." (Page 131) Immergluck argues that his findings at least suggest there is geographic or race-based discrimination in the marketing or approval of loans and that therefore regulatory agencies should collect and disclose more detailed small-business lending data in the future, similar to those collected and disclosed for HMDA.

In discussing the papers in this first session, **Professor Anthony Yezer** of George Washington University argued that "all of the problems inherent in the use of HMDA data to test for mortgage lending discrimination also apply to business lending." (Page 139) He sees a host of additional problems, since business lending is more complex than mortgage lending. He argues that "the data on business lending under the new CRA data requirements cannot demonstrate the presence or absence of discrimination," and was critical of proposals to collect more HMDA-like information, as they "will produce a data set whose only use is to produce false positive indications of lending discrimination." (Page 139)

As a partial alternative to making the CRA data more like HMDA data, Yezer proposed that efforts be made to ask credit reporting bureaus to construct "depersonalized credit histories and to average these reports by census tract. If the data were released with mean FICO scores [that is, credit scores], bankruptcy, and delinquency rates by census tract, this additional information would help to make up for obvious deficiencies in the current data." (Page 144)

Yezer also expressed concern that if banks aggressively attempt to increase small-business lending in low-income or minority neighborhoods, they may generate CRA lending data that show higher rejection rates of minorities despite their good intentions. This could cause a dilemma for the bank because existing statistical tests for discrimination may then (falsely) show that the bank is discriminating. Yezer cautioned that not enough attention was being paid to how these CRA data might be misused. He also commented that he was somewhat surprised that the findings of Canner and Immergluck did not show even

larger differences across communities, given what he sees as the biases in the data collected. In the discussion at the conference, Glenn Canner noted that the main motivation for collecting these CRA data was to allow examiners to assess bank lending under the new CRA examinations, not to assess lending discrimination.

Access to Credit for Minority-Owned Businesses

Papers in the second session addressed more directly the issue of lending discrimination by investigating differences in lending to minority-owned small businesses using a different data set—the National Survey of Small Business Finances (NSSBF). All of the papers in this session used data from the 1993 NSSBF, a survey conducted for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration. The 1993 NSSBF includes responses from more than 4,600 small businesses with fewer than 500 employees during 1992, with one sample of firms drawn to represent all U.S. small businesses and a second that over-sampled minority-owned small businesses (sampling weights are provided to generate nationally representative estimates). The 1993 survey includes detailed demographic and financial data on individual businesses, including a firm's location, primary industry, organizational form, and its recent financial relationships with a variety of financial institutions. The survey also incorporates some information about the firm's primary owner, including personal demographics, management experience, and credit history, not all of which is made publicly available. All of the papers augment the 1993 NSSBF data with additional information for their analyses; two use Dun and Bradstreet credit scores in addition to other information about the firms' and owners' credit history.

Despite some differences in the data, analytical framework, or econometric model used, all three papers found that African-American-owned small businesses were less likely than White-owned businesses to receive loans, despite holding constant many factors likely to help account for differences in creditworthiness. All three studies point out that the NSSBF data indicate that, on average, African-American-owned firms have less favorable credit histories than White-owned firms. But even after controlling for differences in credit histories, along with other factors the authors thought could be important in the credit approval process, the discrepancy between African-American- and White-owned small businesses remained statistically significant. The studies differ substantially, however, in the importance placed on variables omitted from the analysis and the subsequent interpretation of their estimated results. In particular, the authors differ in the extent to which they are prepared to draw conclusions about discrimination based on their results.

The paper by **David Blanchflower, Phillip Levine, and David Zimmerman**, *Discrimination in the Small Business Credit Market*, first reports on qualitative evidence from the 1993 NSSBF, along with supporting information from the Census Bureau's 1992 Characteristics of Business Owners Survey, which indicates that Black-owned firms are more likely to report that they believe access to credit is a serious problem for them and that they are less likely to apply for credit because they fear the loan would be denied. The authors point out that, with these exceptions, the responses of Black-owned and White-owned firms in the NSSBF about recent business problems and prospective business issues are generally quite similar. The authors then use the 1993 NSSBF data to conduct an econometric analysis of loan denial probabilities by race (using probit regressions). In doing so, they attempt to control for differences in creditworthiness and other factors between Black- and White-owned small businesses, including the firm's size and age, organization type, location and industry, and education of the owners. Such factors help to narrow the difference in loan denial probabilities between White- and Black-owned firms but do not eliminate the difference.

The authors find that Blacks are still about twice as likely as White-owned firms to be denied credit, and they conclude from their analysis that the racial disparity they find is likely caused by discrimination. In fact, a probit regression model shows that Black- and Hispanic-owned firms are less likely than White-owned firms to apply for loans for fear of rejection. Hence, the authors argue that their findings may even understate the difference between White- and Black-owned firms' denial rates. The authors also conduct an analysis of interest rates charged to businesses when loans are approved, and find that Black-owned firms pay higher loan interest rates as well. But they find little evidence that other minority groups or women are discriminated against in the small-business loan market using the 1993 NSSBF data.³

Blanchflower et al. investigate several alternative specifications to determine whether their findings could be open to interpretations other than discrimination, but they decide that their original conclusion stands.

The paper by **Ken Cavalluzzo, Linda Cavalluzzo, and John Wolken**, *Competition, Small Business Financing, and Discrimination: Evidence from a New Survey*, combines the 1993 NSSBF data with business firms' credit scores from Dun and Bradstreet and information on the degree of concentration in the local banking market. The latter variable is included because Gary Becker's early theory of discrimination suggested that lenders in less competitive markets were more likely to be able to exercise their tastes for discrimination, so differential treatment of minority businesses is more likely to show up in more concentrated banking markets. The authors investigate credit applications, loan denials, and the interest rates paid by small businesses according to gender, race, and ethnicity of the owners. In addition to examining

credit extended in general, the authors focus on a single type of loan—lines of credit—to avoid having their results depend in any way on the heterogeneity of loans included in the NSSBF data. Lines of credit were the largest category of credit used by small businesses.

The authors use a logit model that estimates the probability that a firm applied for a loan, or loan renewal, in recent years. They find no evidence that application rates varied across demographic groups, except for Asians who were less likely to apply for credit than White males. The authors don't find evidence that market structure has a significant influence on application rates.

Like Blanchflower et al., Cavalluzzo et al. find that African-American small-business owners more often cite prejudice as a reason they anticipated a loan application would be rejected. In their regression analysis, Cavalluzzo et al. find that, relative to White-male business owners, African-American owners are much more likely, and Hispanic owners are somewhat more likely, to avoid applying for a loan for fear of denial. In general, the authors conclude that, other than Asian owners, who express relatively low needs for credit, African-American and Hispanic owners are more likely to have unmet credit needs. As lending markets become more concentrated, the authors find that Hispanic- and female-owned firms are more likely to avoid applying for a loan because of fear of denial.

The authors also investigate loan denials and find that adding measures representing the riskiness of the firm and the credit history of the firm and business owner is very important in explaining the ability of a firm to obtain financing. Adding such measures narrows substantially the differences between estimated loan denial probabilities between White-owned and minority-owned firms. Nevertheless, the differences between African-American firms and White-owned firms remain statistically significant despite the addition of these credit indicators and other variables. Also, denial rates for female-owned firms and African-American-owned firms tend to rise as bank concentration increases.

In contrast to Blanchflower et al., Cavalluzzo et al. do not find that interest rates on loans vary significantly by demographic group (see page 199). This may be due to Cavalluzzo et al.'s inclusion of additional variables (such as the characteristics of the loan and Dun and Bradstreet's credit scores for businesses) that were not available to Blanchflower et al. The authors also did not find that interest rates paid increase as market concentration increased; in fact, they find evidence that interest rates paid by African-American and female-owned firms decline—a surprising result. These results for women and African-Americans disappear, however, when the authors analyze a single type of loan—lines of credit. Instead, the authors find that interest rates paid by Hispanic-owned firms on lines of credit increase with market concentration (Pages 202-203). These interest rate results disappear if

rural markets, which are the most concentrated of the lender markets, are eliminated from the sample (Page 227, footnote 32); when only urban and suburban areas are included in the analysis, interest rates paid on loans are not statistically related to market concentration.

In their summary, Cavalluzzo et al. are cautious about attributing their overall findings to discrimination. But even though the many factors they include in their analyses help explain the observed differences in credit market experiences across racial and ethnic groups, substantial differences remain that they cannot explain.

Raphael Bostic and **Patrick Lampani's** paper, *Racial Differences in Patterns of Small Business Finance: The Importance of Local Geography*, takes a slightly different approach than the session's other two papers and examines whether incorporating information about the area in which a small business is located, including measures of the health of the local economy, is important in analyzing differences in the credit market experiences of White-owned and minority-owned firms.⁴ Bostic and Lampani augment the 1993 NSSBF data with a series of economic variables from the small businesses' local area, including the competitive structure of the local banking market as well as variables characterizing the area's racial composition. This latter set of variables allows for an examination of redlining issues—that is, denial of credit based on demographic characteristics of the area in which the firm is located rather than on the characteristics of the individual firm or its owner.

Bostic and Lampani estimate weighted logistic regressions of the probability of loan approval using many of the same variables included in other studies in this session, and they then add local geographic variables to determine their influence on the differences in lending patterns across racial groups. After controlling for firm, owner, and broad geographic characteristics, as well as banking market concentration, Bostic and Lampani find that applications by minority-owned small businesses generally are approved less frequently than White-owned small businesses, with the differences statistically significant only for Black-owned small businesses.

Adding variables measuring the racial composition of the local neighborhood and variables representing the economic characteristics of the local geography reduces the disparity in approval likelihood for Black- versus White-owned firms, but does not eliminate it, and the result is still statistically significant. Differences between Asian-owned and White-owned firms, and between Hispanic-owned and White-owned firms, however, remain statistically insignificant. Although Bostic and Lampani conclude that the omission of local geography in previous research has led to an overstatement of the differences in approval rates of applications by minority-owned and White-owned small businesses, they emphasize that local geography does not explain all of the observed differences in outcomes.

Bostic and Lampani, like Cavalluzzo et al., are reluctant to conclude their study finds discrimination, since they believe it is unlikely they included all of the relevant variables that lenders use in making lending decisions. Some information, such as the personal assets of a firm's owners that might be used to guarantee a small-businesses loan from a bank, is not included in the NSSBF. Blanchflower et al. also point this out in their study, although they don't feel the loss of such information is critical to their conclusions.

One of this session's discussants, **Robert Avery** of the Federal Reserve Board staff, disagreed with the Blanchflower et al. position on this point and directed most of his comments to the issue of omitted variables in such studies of loan approvals and denials and the difficulty of concluding that their empirical results prove discrimination. He used the owner's personal wealth as an example of a variable that lenders use but on which researchers do not have data. Avery also pointed to some of the differences in empirical results between the Blanchflower et al. and the Cavalluzzo et al. papers as an example of how important an omitted variable can be to one's conclusions. The Cavalluzzo et al. paper included variables not available to Blanchflower et al., and found there were no statistically significant differences in loan interest rates charged to Black-owned versus White-owned firms, whereas Blanchflower et al. did find significant differences.

While Avery cautioned against overstating these papers' empirical findings, he acknowledged the research has documented a substantial difference in outcomes between Black-owned and other firms that remains after accounting for many firm and owner characteristics. Avery noted that "just because the NSSBF survey data cannot be used to prove discrimination, it can't be used to dismiss it either." (Page 281) He argued that more specific examination of lending decisions would be needed to focus more specifically on the issue of discrimination. This might require either specially-designed surveys of lenders or case studies of individual lenders, as noted by Bostic and Lampani.

This approach was also suggested by the other discussant, **Professor Timothy Bates** of Wayne State University. Bates's view was that these papers, along with others in the literature, clearly document that Black-owned firms are often denied equal access to credit and he suggested the next step is pinning down the nature of the processes that are producing the result.⁵ He noted that all of the studies used the 1993 NSSBF data to document that Black loan applicants as a group are riskier than White loan applicants, but that this alone does not succeed in explaining away the differences in loan approvals or denials. Although Bates agreed that it is difficult to conclude that discrimination exists based on one study individually, he observed that the papers in this session tended to confirm findings of other studies that used different data,

different time periods, and different methodologies. With all these studies producing evidence of differential lending to Blacks versus Whites, he said “it becomes difficult not to infer discrimination.” (Page 271)

Bates also believed Bostic and Lampani’s inclusion of local geographic variables was largely redundant, since many of the measures of the firm’s or owner’s credit history already reflected the economic environment in which the firm operates. So he isn’t surprised that Bostic and Lampani did not find that adding local geographic variables substantially altered the likelihood that Black-owned firms would receive loan approvals. Bates questioned whether the NSSBF was necessarily the best data set in which to look for problems in minority-owned firms’ access to credit, since most of the firms in the NSSBF are older, more established small businesses, with a median age of about 14 years, whereas most minority-owned firms are typically much younger, with a median age of five to six years according to Census Bureau data (Page 273). Consequently, the minority-owned firms that Bates argued are most vulnerable to lack of access to credit were less likely to appear in the NSSBF.⁶

Bates concluded his comments by arguing that an improved database was needed to assess the issue of discrimination, one that is more oriented to the application process. He also suggested that auditing for discrimination by using testers should be tried in the small-business loan field, as has been done in the mortgage lending process. He pointed out that in the mortgage lending process, discrimination at the pre-application stage is an issue, which the studies in this session cannot address. Based on the overall findings of the studies in this session and other research, Bates concluded that “these findings tell us very little about how the loan application and approval processes differ for White and Black business borrowers, and they are too broad to guide enforcement efforts seeking to reduce Black/White differentials rooted in discriminatory treatment. Audit studies are needed to fine-tune our understanding of bank small-business lending practices.” (Page 274) Squires and O’Connor supported a similar approach in their paper.

The issue of minority access to credit was also discussed by Chairman Greenspan in his remarks on the second day of the conference. He commented that although our financial system has been very successful promoting higher standards of living, some potential impediments remain to the free flow of capital in the small-business sector and that “One particular barrier—apparent disparities in the access to credit for minority-owned businesses—is the focus of several papers being presented at this conference.” (Page 43) Although he noted that “considerably more work needs to be done to take account of possible explanatory factors not included in the studies to date,” he went on to point out that “To the extent market participants discriminate...credit does not flow to its most profitable uses and

the distribution of output is distorted.” (Page 43) Chairman Greenspan encouraged the establishment of “business relationships between the financial services sector and the rapidly growing number of minority- and women-owned businesses,” and he noted that “This conference highlights several developments that hold the promise of improving such links.” (Page 43)

The Small-Business Lending Relationship: Session A

A large part of the conference was devoted to papers about the relationship between lenders and small-business borrowers. Economists have spent a great deal of time in recent years discussing “relationship lending.” Some argue that relationship lending is likely to be most important when the borrower is a small business and the lender is a small bank. Concern about this issue has increased in recent years because consolidation in the banking industry has increased bank size and because some research has shown that large banks lend proportionately less to small businesses than do small banks. The papers in the first session on the small-business lending relationship focused on the importance of the size of the bank to the lending relationship and on the effect of consolidation on the availability of bank lending.

George Haynes, Charles Ou, and Robert Berney, in *Small Business Borrowing from Large and Small Banks*, use the 1993 NSSBF data and Call Report information on the banks that lent to the surveyed businesses. The authors want to assess whether smaller small businesses have less access to bank credit from large banks than larger small businesses, while controlling for the quality (riskiness) of the businesses. In particular, they would like to determine whether large banks “cherry pick” the small-business lending market by offering loans primarily to higher quality firms. They also want to examine whether bank size has different impacts depending on the type of loan offered to small businesses, such as lines-of-credit, leases, mortgages, or vehicle or equipment loans.

The authors account for the size of small-business borrowers using the number of a firm’s employees. The quality of a firm is accounted for by constructing a financial quality statistic (called an Altman Z-statistic) from the small-businesses’ financial statement information provided in the 1993 NSSBF. The age of the firm, total debt of the borrower, and other control variables, such as industry mix and census region location, are also included in the authors’ analyses. Banks are divided into large and small categories using an asset size of \$500 million as the dividing line.

Their univariate analysis indicates that smaller, younger firms were less likely than larger, older firms to use a large bank, especially in urban areas; this was especially true for lines of credit to businesses. Similarly, larger, older small-business borrowers have higher shares of

their total debt held by large banks than do smaller, younger small-business borrowers, with the differences more pronounced in urban areas. But these univariate results do not control for other characteristics of the firms and loans, so the authors conduct multivariate analyses that control for the firms' quality (riskiness), legal organization, industry, census region location, gender and race of the owner, size of loan, and sources of financing, in addition to the firms' size, age, and urban/nonurban location. Here they find that larger and older small-businesses, especially those in urban locations, are significantly more likely to borrow from large banks. When they conducted separate multivariate analyses for each type of loan, they found this result to be most evident for lines of credit and less evident for vehicle loans.⁷ But the quality (riskiness) of the firm was not a significant factor in obtaining loans from either large or small banks, suggesting that large banks do not "cherry pick" just the highest-quality small-business borrowers.

Haynes et al.'s further analyses show that large banks' shares of total small-business loans are not significantly affected by firm size, age, or quality (riskiness), and that, of these same three factors, only firm size has a significant effect on small banks' shares of total small-business loans. So large banks don't seem to hold a higher proportion of total loans for larger small businesses than for smaller small businesses, and they don't hold a higher proportion of total loans for more financially secure small businesses than for other small businesses. Larger and smaller small businesses have similar shares of total debt held by large banks.

Haynes et al. conclude that smaller small businesses are less likely to borrow from large banks than larger small businesses, even in urban markets, which may limit the smallest businesses' access to financing. They found this to be particularly true for lines of credit, for which lenders require more information from borrowers and greater confidence in the borrowers' ability to repay. Therefore, lines of credit seem most closely associated with the term relationship lending.

In *Cookie-Cutter versus Character: The Micro Structure of Small Business Lending by Large and Small Banks*, Rebel Cole, Lawrence Goldberg, and Lawrence White, explore the nature of the small-business lending relationship in more detail by analyzing the differences in how large and small banks use information about borrowers in the loan approval process.

The authors hypothesize that relationships are more important for small banks than for large banks. They argue that large banks are more likely to use standard criteria obtained from borrowers' financial statements in the loan decision process—a "cookie-cutter approach"—while small banks are more likely to deviate from these standard criteria and rely more on qualitative criteria in the loan approval process based on loan officers' personal interactions with prospective borrowers—a "character approach." They explicitly test the hypothesis that formal financial data provided by borrowers better explain the lending decisions of large banks than of small banks.

The authors combine the 1993 NSSBF data with Call Report data to create a sample of large banks, those with consolidated assets of \$1 billion or more, and a sample of small banks, those with consolidated assets of less than \$1 billion. [Note that the size of assets used to divide banks into large and small categories is different from the \$500 million size used by Haynes et al.] For Cole et al., the dependent variable is loan approval, and the explanatory variables are grouped into four categories, including measures of the borrowing firm's characteristics, the characteristics of the requested loan, the characteristics of the relationship between the borrower and the bank, and the bank's characteristics. The authors' empirical work employs a simultaneous equation model (a bivariate probit model) that involves two equations: one to explain the borrower's choice of a large bank or a small bank, and the other to explain the bank's decision to approve or reject the loan application. They compare results obtained from estimating the model for large banks only versus those for small banks only.

Cole et al. do find that measures of borrowing firms' debt-to-assets and their cash-to-assets are statistically significant in explaining large banks' loan decisions but are insignificant for explaining small banks' loan decisions. They conclude that small and large banks use different criteria in their small-business loan decisions, with small banks finding it more advantageous to use a more discretionary, or "character," approach to making loans, while large banks tend to place more emphasis on standard criteria and make loan decisions that look more like a "cookie-cutter approach." The authors also find that small banks, but not large banks, are more likely to extend loans to firms with which they have a deposit relationship, which has been cited in other literature as one of the hallmarks of relationship lending between small banks and small businesses. Cole et al. note that ongoing consolidation in the banking industry, and the resulting shrinkage in the number of small banks, may lead to a loss of information about small-business customers, with a consequent risk that the trend toward greater consolidation of banking will adversely affect small businesses' ability to obtain bank credit.

This latter issue—whether consolidation in the banking industry is leading to a reduction in credit availability for small businesses—is explored from a somewhat different perspective and using a different data set by **Jonathan Scott** and **William Dunkelberg** in *Bank Consolidation and Small Business Lending: A Small Firm Perspective*. In contrast to the earlier authors, Scott and Dunkelberg use data from a survey of the National Federation of Independent Businesses (NFIB), the 1995 Credit, Banks and Small Business survey. This survey has been conducted five times since 1980. The 1995 survey data are based on a sample of more than 3,600 small businesses that responded to a variety of questions about their access to credit, their banking relationships, their search for loans, the terms of their most recent loans, and other aspects

of their financial relationships with their banks. The 1995 survey also asked small businesses whether their bank had merged within the past three years, then followed up with other questions if their bank had been involved in a merger. About 25 percent of these small firms reported a merger or acquisition involving their primary bank.

The firms in the NFIB survey are indeed small firms, with median full-time employees of seven and median sales of \$400,000. The median loan size is only \$40,000. In addition, more than half of the firms that borrowed from banks borrowed from smaller banks—those with assets of less than \$1 billion.

Scott and Dunkelberg examine how bank consolidation has affected the quantity of credit available to small firms, their search for loans, the price of credit, and the pricing of other bank services, while controlling for certain factors, such as firm-level risk (proxied by years in business, total assets, sales growth), bank/borrower relationships, bank location, and bank and market size, among others. In particular, the authors relate small firms' experience with having their primary bank merge within the past three years to: "(1) their assessment of whether all of their borrowing needs were met; (2) their success in obtaining their most recent loan; (3) their decision to shop for another bank for their business; (4) the number of tries (searches) to obtain their most recent loan; (5) various loan contract terms such as the rate (spread over prime), collateral delivery, loan-to-value ratio, the requirement to do other financial business with the lender; and (6) the scope and scale of fees on banking products." (Page 333)

The authors first examine simple bivariate relationships among the data in their sample and conclude that bank consolidation does not appear to have decreased overall credit availability to small businesses, although it may have increased firms' costs of searching for a loan. They then conduct multivariate analyses of the data, which generally confirm their earlier results. Mergers lower the likelihood that small firms' borrowing needs will be met by their primary bank, but firms are as likely to successfully obtain credit if their primary bank merges as when it does not merge. Mergers increase the probability that small firms will search elsewhere for credit services, and small firms often search for loans at nonbank lenders as well as other banks following a merger of their primary bank. So even though bank consolidation may be increasing small businesses' costs to search for loans, mergers don't appear to significantly restrict their ability to obtain credit.

Scott and Dunkelberg argue, as did Cole et al., that even independent of bank merger activity, small businesses' banking relationships are important in explaining small businesses' search for loans and the availability of credit. The longer a business-bank relationship and the lower the turnover of a firm's account manager at a bank, the better the firm's chance that all its borrowing needs are being met

with less need to search elsewhere for loans. These effects were more important in magnitude than the merger of the firm's primary bank.

In examining the impact of bank mergers on the loan terms and fees charged to small businesses, Scott and Dunkelberg find that, following bank mergers, small businesses more frequently have to deliver collateral on their loans and expand their banking relationships with the bank to other products, and they also tend to pay higher fees or pay fees on more bank services. Small businesses' relationships with their banks again play a role: stronger bank-borrower relationships tend to result in more favorable loan terms and fewer fees.

Overall, Scott and Dunkelberg argue that their findings underscore the importance of the lending relationship between banks and small businesses, because they find that stronger relationships favorably affect small firms' access to and cost of credit. They also argue that, after controlling for a variety of factors, their results using the NFIB data show that mergers had no significant adverse impact on the availability of credit, or the cost of credit, to small businesses.

Allen Berger of the Federal Reserve Board staff, the first discussant of the papers in this session, provided a review of the literature on "relationship-based finance," which he characterized "as occurring when the following three conditions are met: (1) Information is gathered by the provider of funds beyond the relatively transparent data available in the financial statements, observation of any collateral, and other public information; (2) Information is gathered through continuous contact between the provider and the firm, its owner, the firm's customers, and the local community, etc., often through the provision of multiple financial services; [and] (3) Information remains confidential to the provider of funds, who uses the information to help make additional decisions over time about future injections of capital, the evolution of contract terms, or monitoring strategies." (Page 390)

Berger discussed the importance of relationship-based finance in providing funding to small businesses, which typically don't have as much publicly available, transparent information for lenders to review—which in turn makes them "informationally opaque" to lenders that don't build relationships with them. Berger also noted that, for many small businesses, gathering information about the firm's owner is just as important as gathering information about the firm itself. He contrasted relationship-based finance with transaction-based finance, in which funds tend to be provided to firms based on information that is readily available in financial statements or from other publicly available information. Although banks may engage in both types of financing—relationship-based and transactions-based—depending on the borrower and the type of loan being requested, Berger stressed that lines of credit to small businesses typically seem to reflect relationship-based lending.

The fact that banks are the single largest supplier of financing to small businesses in the U.S. is one of the reasons Berger believes it is so important to conduct research on relationship lending. He noted that, in general, small businesses maintain relationships with a bank for an average of eight years; so lending relationships seem to be quite long-term. The recent consolidation in the U.S. banking industry potentially might disrupt these long-term lending relationships in a way that will reduce the availability of credit to small businesses, which Berger views as the “big issue.” He noted that much of the relationship lending literature uses detailed data on the borrowing firms and less detailed data on banks, while much of the literature on bank consolidation uses detailed data on banks and less detailed data on borrowers. He argued that combining the strengths of these two approaches and using more detailed data of both types would help improve research about the impact of bank consolidation on relationship lending. He noted that so far only a few research papers have moved in this direction.

In commenting specifically on the papers in the session, Berger noted that each of them takes off on this approach, matching bank data and small-business data. Haynes et al. investigate whether relationship-type small-business borrowers are treated similarly by large and small banks, while Cole et al. examine in detail the interaction of the size of the bank and its use of relationship-based loans versus transactions-based loans. Berger suggested both sets of authors could improve their papers by using more bank size classes and including some measures of the organizational complexity of the banks. But, in general, he found both papers’ results intuitive and consistent with the findings of other literature.

Berger noted one shortcoming of the NFIB data used by Scott and Dunkelberg: they don’t provide as much detailed financial information about the small businesses as do the NSSBF data used by the other two papers. Berger argued that Scott and Dunkelberg’s results are somewhat mixed in terms of finding consistent effects of bank consolidation on the availability and costs of credit to small businesses and suggested further research is needed.

Mitchell Petersen of Northwestern University, the second discussant in this session, also provided a broad overview of small-business lending relationships in his comments by focusing on two major trends in the banking industry: technological changes in lending (such as credit scoring) and bank consolidation. He pointed out that the two trends are not independent, that bank consolidation is partly the result of the growing use of information technology that is changing the cost structure of banks.⁸ Since credit scoring models don’t seem to fit the typical description of lending to small firms, which tends to be portrayed as relationship lending, the question arises as to whether small firm lending will suffer as consolidation and credit scoring become more common. But Petersen noted that, at one time,

lending to individuals for unsecured personal credit or for mortgages was also more relationship-based than it is today; credit cards and mortgage markets have changed lending dramatically from the days when people would borrow through a personal loan or a mortgage primarily from their local bank. Nevertheless, Petersen agreed that, to better understand how small firms raise funds, we have to understand the importance of small banks to small firms, and how small banks are different from large banks in their lending to small firms—topics that the three papers in this session sought to address.

Petersen noted that Haynes et al. documented the positive correlation between the size of a firm and the size of the bank from which the firm borrows. He interpreted some of the variables that Haynes et al. included in their analysis as proxying for the size of loan demand of the firm, which, in turn, he saw as correlated with the size of the firm itself. In his comments, Petersen said that an implicit assumption in much of the literature and in Haynes et al. is that large banks are different from small banks in their lending to small firms. He saw Cole et al. tackling this issue of whether the loan approval process is different for large and small banks in a clever way by estimating a loan approval equation separately for firms that applied to large banks and to small banks. But Petersen expressed concern that he had expected the estimated coefficients on the independent variables (such as on the age and size of the firm) to be smaller in magnitude in the small bank equation than in the large bank equation, but the coefficients in Cole et al.'s two equations are essentially the same when estimating the interest rate a small firm pays on its loan. He also found puzzling the estimated coefficients on the borrower's and the firm's default histories, where the coefficient on the firm's past delinquencies were more important in the small bank equation than in the large bank equation. Petersen thought this was inconsistent with the notion that small banks put less weight on a factor such as past delinquencies of the borrower.

Some previous research cited by Petersen suggests that banks involved in mergers lend less to small firms. Petersen pointed out that Scott and Dunkelberg took an innovative approach, in that by using data that asked firms directly about such an event, they addressed how small firms respond to the merger of their bank. Although small firms respond by increasing their search for new loans among other lenders, Petersen observed that Scott and Dunkelberg found that small firms find credit available from other sources, even if their merged bank does not satisfy all of their credit needs. Petersen concluded that Scott and Dunkelberg's overall findings were consistent with other literature that used other data sources, including some of his own work, and which also found that other lenders tended to offset any decline in credit supplied by merged banks. He noted that Scott and Dunkelberg's other findings suggested that younger firms that were

borrowing in more concentrated banking markets had better access to funds than did similar firms in competitive banking markets—a result also consistent with some of Petersen’s research. He also argued that their findings were consistent with the view that “mergers are more likely to occur in areas or at banks where there is less loan demand.” (Page 406) This underscores, in Petersen’s view, that markets where mergers occur are different from markets in which no mergers occur.

Petersen concluded his remarks by suggesting that future research will have to address not only what is different between large banks and small banks but also what is fundamentally different between large firms and small firms. He suggested that differences among small firms may become more important as well, because some small firms may be more informationally transparent than others and that could be important if credit scoring becomes more common. That issue was taken up again in comments in a later session of the conference.

The Small-Business Lending Relationship: Session B

Discussion of the small-business lending relationship continued on the second day of the conference with a diverse set of papers. **Brian Uzzi** and **James Gillespie**, in *What Small Firms Get Capital and at What Cost: Notes on the Role of Social Capital and Banking Networks*, investigate how social ties between bankers and smaller businesses affect a firm’s access to and the cost of capital. This paper attempts to delve deeper into the nature of the micro-structure of small-business lending discussed in the Cole et al. paper. Uzzi and Gillespie argue that the lending relationship, particularly for small businesses, involves more than just an arm’s-length exchange of information between lender and borrower—it also includes a social relationship that interjects expectations of trust and reciprocity between the lender and the borrower that can increase a firm’s access to, and reduce its cost of, credit, which they refer to as “embedded ties.” Such social relationships are referred to as a form of “social capital,” which the authors argue can be invested in and which has productive value just as other forms of capital do. Uzzi and Gillespie investigate both social relationships and networks in their paper to assess whether these embedded ties have an impact on small businesses’ access to and cost of credit in addition to conventional economic, market, and firm-level characteristics (which they call “arm’s-length ties”).

The authors use the NSSBF data to conduct statistical tests of their hypotheses, but they also conducted interviews with 11 banks in the Chicago area to collect original field data on bank-borrower relationships to help them frame the issues they want to address. Interviews with 26 bank “relationship managers” (lenders) documented many stories of social interaction between lenders and smaller business borrowers. In contrast to larger businesses, a smaller firm’s financial position is often

closely linked to the financial position of the small-business owner, so the authors expect that social relationships will be more important in small businesses' lending relationships. The authors hypothesize that the greater the social ties of a lender and small-business borrower, the more likely the firm is to obtain a loan at that bank and with a lower interest rate. But the authors also argue that if a small business develops a broader network of arm's-length and social ties with various lenders, it will have greater access to credit and lower costs of credit.

These hypotheses were examined using the NSSBF data, with the duration of a borrower's tie with a bank and the number of services it uses with that bank as measures of the social relationship between the firm and the bank. The firm's social network was proxied using measures of the number of banks with which a firm transacts business and the firm's concentration of accounts with these banks (measured using a Herfindahl index). In statistical regressions, Uzzi and Gillespie find that their proxies for social ties help to reduce a small firm's cost of credit but have no significant effect on its access to credit. In contrast, they find that their proxies for the firm's network of banking ties increases a firm's access to credit and reduces its cost of credit.

Jeremy Berkowitz and Michelle White, in *The Effect of Personal Bankruptcy Law on Small Firms' Access to Credit*, explore a different aspect of small businesses' access to credit—whether and how state exemptions to the federal personal bankruptcy law affect small businesses' access to or cost of credit. Under federal law, states can establish their own bankruptcy exemptions levels, which exclude certain assets from bankruptcy proceedings, and these levels vary widely. A high exemption level is attractive to borrowers, who are then more willing to borrow, since the cost of defaulting on a loan by declaring bankruptcy is lower. But a high exemption level is unattractive to lenders, who are less willing to lend. Berkowitz and White expect to find that small-business borrowers in states with high bankruptcy exemption levels are less likely to receive loans and more likely to pay higher interest rates on the loans they do receive. They expect to find this particularly for noncorporate firms—more so than for small incorporated firms—since these firms are ones for which the financial condition of the owner and the firm are most closely linked.

The authors use a version of the 1993 NSSBF data set that identifies the state in which the borrower is located; they also use data on state bankruptcy exemptions. The NSSBF data are divided into noncorporate and corporate firms, and the authors control for firm and market characteristics in conducting their statistical tests using (logit) regressions of the probability of being discouraged or denied a loan. The authors find that noncorporate borrowers have a significantly higher probability of being denied a loan in states with higher bankruptcy exemption levels, while for corporate borrowers (who aren't

usually able to use personal bankruptcy), the exemption level variables are not statistically significant. When noncorporate firms do receive loans, they are offered smaller loans in states with high bankruptcy exemption levels than in states with low exemption levels; there are no significant differences in the sizes of loans offered to corporate firms.

With regard to the interest rates paid on loans, Berkowitz and White find that corporate firms pay significantly higher loan rates in states with high bankruptcy exemption levels, whereas surprisingly they find no significant difference in loan rates for noncorporate firms between states with high and low exemption levels. Berkowitz and White also show that if small firms or their owners have filed for bankruptcy in the past, this significantly increases the firm's probability of being denied a loan.

Although most of the papers in the conference focused on the lending relationship surrounding bank lending to small businesses—what is often called the formal lending channel—some of the papers focused on other sources of credit and capital to small businesses. One of those papers was included in this session and focused on the sources of small-business finance to two minority neighborhoods in Chicago—one predominantly Hispanic (Little Village) and one predominantly Black (Chatham). Considering the earlier discussion in many papers about the lack of access to bank lending on the part of Black-owned small businesses, this study, *A Comparison of Small Business Finance in Two Chicago Minority Neighborhoods*, by **Paul Huck, Sherrie Rhine, Robert Townsend, and Philip Bond**, was particularly interesting because it focused on a broad range of financing sources in minority areas, including formal sources, informal sources (such as loans or gifts from family, friends, or business associates), personal savings, and other sources (such as trade credit). The authors find that for the two neighborhoods combined, only about 10 percent of the funds needed to start a firm are from formal sources while almost two-thirds come from personal savings and almost 20 percent come from informal sources. This makes clear that much more research needs to be done on these other sources of financing small businesses in minority neighborhoods; the focus of research ought not be on bank lending alone if we are to understand the formation and growth of minority-owned small enterprises.

The survey of the Little Village and Chatham neighborhoods involved enumerating all identifiable existing businesses except medical and legal professionals, whose educational requirements were deemed to be significantly different from those of other small businesses in the areas. Home-based businesses were also not included. About one-quarter of the total businesses in Chatham were interviewed, and about one-third of the total businesses in Little Village were interviewed. The average age of the firms was nine years, and the average age of Black-owned firms was older at 13 years.

The authors collected information about the characteristics of the business owners and compared them to similar Census Bureau survey data. Huck et al. also examine differences in start-up financing and find that Hispanic- and Black-owned firms have lower levels of total start-up financing compared to other ethnic or racial groups. The authors investigate these differences while trying to control for differences in demographics, human capital, and the type of industry. They find that Black-owned firms with characteristics similar to Hispanic-owned firms start their businesses with only 54 percent of the funds used by a comparable Hispanic-owned firm. The differences between Black and Hispanic owners are statistically significant. However, the authors find no statistically significant differences in start-up funding among Hispanic, White, Asian, or other owners of small businesses, despite some of the differences appearing to be large in absolute amount. This finding is similar to results noted in earlier papers in the conference in which the differences between Blacks and other groups tended to be the most significant (see the session on *Access to Credit for Minority-Owned Businesses*).

The differences in start-up funding do not appear to stem from differences in personal savings. The authors find that more than 50 percent of both Black and Hispanic owners finance their entire start-up using just personal savings and no other financing and that the difference in personal funds provided by Black and Hispanic owners is small and not statistically significant. Where the authors find particular differences in financing is from informal sources (gifts or loans from family and friends) and in the use of trade credit.

Although informal financing is the second most important source of funds after personal savings, both Black and Hispanic owners received less informal financing than other groups. The authors find that Black owners use formal financing more than Hispanic owners, while Hispanic owners use trade credit more than Black-owned firms. Although fully explaining these differences across racial and ethnic groups was beyond the scope of the paper, the authors explore some ways to begin doing so.

Huck et al. find that both Black and Hispanic firms are less likely to be offered trade credit by suppliers, but they also find that Black-owned businesses often don't choose to use trade credit even when it is offered. An examination of whether the ethnicity of the supplier and the firm's owner matters in the use of trade credit showed that it does not matter—that is, minority owners are not more likely to use trade credit from suppliers of the same race/ethnicity compared to suppliers of different race/ethnicity. The authors also find that on-going loans from individuals are a source of informal financing to Hispanic-owned firms in Little Village, but these loans are basically nonexistent as a form of financing in the predominantly Black Chatham community.

The Huck et al. paper confirms the importance of informal sources of financing, including personal savings and loans from family

or friends, to small businesses in minority neighborhoods. They find differences not just between White-owned small businesses and minority-owned firms but also across various minorities in the two neighborhoods they study. The authors conclude that their survey results underscore the importance of further investigating informal sources of capital and credit and how the formal and informal markets work in minority neighborhoods.

The discussants of this session also took a broad view of the field in making their comments. **Professor Gregory Udell** of Indiana University reviewed the overall academic literature on relationship lending, which he said had begun as a distinct area of study only about five or six years ago. He then placed the three papers in this session in the context of that literature. He pointed out the differences in the academic literature between relationship lending and transactions-based lending, and noted that relationship lending is often defined using such key words as continuous contact, multiple services, and private information. Udell argued that obtaining a better understanding of relationship lending was important for many reasons, including that most lending of this type involves small businesses, which make up a large share of all businesses, and that such lending is connected with the transmission of monetary policy to the economy and the way bank regulations affect the economy. He also noted that relationship lending has implications for a variety of issues, including the securitization of loans, discrimination in credit markets, and the consolidation of the banking industry.

Udell identified several key research issues, including a basic set of questions that included: "How does a relationship develop and what does it look like? Is it with the bank? Or is it with the loan officer? Is it with the firm or the entrepreneur?" (Page 507) Udell noted that Uzzi and Gillespie explored the sociological dimension of the bank-borrower lending relationship, and Huck et al. illustrated that relationship lending may not have to involve formal bank financing: a lending relationship may involve informal means of financing from family or friends (a subject that has not been investigated much in the literature). Udell thought the Berkowitz and White paper highlighted how the small-business lending relationship tended to be with the entrepreneur/owner rather than with the firm itself, because otherwise the personal bankruptcy exemptions, which their study found to be significant, would not have mattered so much.

Udell also suggested several lines of research for the session's authors to explore. He thought Huck et al. could explore whether there are "market makers" for informal financing of small businesses; for instance, whether accountants or lawyers act as intermediaries who find financing for start-up businesses in the neighborhoods studied. Udell also suggested that if the relationship that really matters is the one between the loan officer and the entrepreneur/owner via the

social attachment explored by Uzzi and Gillespie, more work should be done on the *supply* of relationship lending and its implications for how the bank delegates lending authority to the loan officer. Udell also was concerned that some of the proxies Uzzi and Gillespie used for measuring networks may be substituting for the size of the borrowing firm.

Philip Strahan of the Federal Reserve Bank of New York emphasized in his comments that relationships involve the production of information, and he highlighted three asymmetries in the information available to different parties in relationship lending. One is that loan officers in relationship lending have information that their employer (i.e., the bank) doesn't. A second is that borrowers have information about the prospects for their firms that the lender doesn't. The third is that the lender to a small business will generally have information that others in the marketplace will not. Strahan reviewed these three information asymmetries and noted that economic theory posits that credit markets may not clear when such information asymmetries exist between borrowers and lenders. This is often referred to as credit rationing. Strahan commented that the Berkowitz and White paper provided some evidence that credit rationing may be important in markets dominated by relationship lending. Their finding that, in states with more generous bankruptcy exemption levels, lenders tend to deny credit more frequently but do not charge higher interest rates, was consistent with what economic theory predicts is likely to occur when information problems cause credit markets not to clear.

Strahan went on to discuss how the information asymmetry involving the knowledge of the true prospects of the firm (called moral hazard) may be mitigated by using some alternative means of gathering information. He noted that the papers by Uzzi and Gillespie and by Huck et al. suggested that "trust between the borrower and the lender may be critical."⁹ (Page 518) Strahan noted that, through their survey of lenders in Chicago, Uzzi and Gillespie found that loan officers foster personal and social contacts with their borrowers as a way to enhance the flow of information about the firm's prospects and also to build a personal relationship that makes reneging on a loan less likely. The start-up financing in two minority Chicago neighborhoods examined by Huck et al. often involved loans from family and friends, which Strahan suggests are based more on trust than on hard information about the small business. Strahan found Huck et al.'s results somewhat puzzling, however, in that the study found that some minority groups received more financing from informal sources than others, even though it was not clear that these differences were due to differences in the wealthiness of individuals involved in the informal networks.

Strahan concluded his comments by noting that technological innovations in lending, such as credit scoring and securitization, are at odds with the personal nature of relationship lending described in

some of the papers in this session. Since human contact is important to relationship lending, these technological changes may effectively raise the relative cost of relationship lending vis a vis lending at arm's length. Although these technological innovations help reduce the costs of lending, Strahan suggested that borrowers who depend on relationship lending may find credit less available over time.¹⁰

Microenterprise Lending

The theme of relationships in lending was evident again in the session on microenterprise lending. **Denise Anthony's** paper, *The Importance of Trust in Micro-Credit Borrowing Groups*, discussed how micro-credit borrowing groups could build relationships of trust among members of a borrowing group that helps screen, select, and monitor individual borrowers within the group, and thereby increase the probability of repayment from high-risk borrowers. The term micro-credit refers to small, short-term loans made by mostly nonprofit agencies to the owners of micro-businesses, which are usually run by one or two people or by a family and employ less than five employees. Such micro-businesses usually do not have access to commercial loans from banks and typically borrow very small amounts: less than \$15,000 and as little as \$500. The most famous example of a micro-creditor is the Grameen Bank of Bangladesh. Anthony notes that Grameen Bank and similar institutions that have formed in the U.S., such as Working Capital, require individual borrowers to join a borrowing group that is collectively responsible for borrowers' screening and selection, loan approval, and repayment oversight.

Anthony explains that instead of screening based on a person's financial information, the groups' members assess the personal reliability of fellow members. This sounds similar to Cole et al.'s description of how small banks seem to go beyond basic financial information of a borrower and assess the borrower's "character." Indeed, the notion of "character loans" has been commonly used to describe the lending of small banks to individuals. The difference with the micro-credit arrangements investigated by Anthony is that loan size is *very* small, little or no financial information on borrowers is used to make loan decisions, borrowers are higher risk, and yet the interest rate charged is not commensurate with the higher risk of the borrower. In a borrowing group, the individual borrower's access to credit depends on the repayment history of the entire group. Not everyone receives a loan right away, so there is staggered borrowing. Early borrowers must repay before later members obtain loans. So there are collective consequences to individual behavior.

Anthony notes that U.S. experience with micro-credit borrowing groups differs from the Grameen Bank's experience because, in the

U.S., members of a borrowing group are not from the same village, as they are in Bangladesh. So, in the U.S., peer pressure comes not from the village as a whole, but just from the relationships built up among the members of the borrowing group. Anthony cites data that, since 1980, micro-credit programs in the U.S. have targeted low-income, female, and minority individuals who generally borrow very small amounts for short periods to begin or expand a very small business. Most U.S. programs have graduated loan packages, whereby borrowers can obtain larger loans after repaying smaller loans. "Since the late 1980's, micro-credit programs in the U.S. have loaned over \$44 million to micro-businesses, assisted in the creation of over 20,000 new businesses and served over 200,000 clients (Self Employment Learning Project, 1994)." (Page 551) Anthony notes that micro-credit programs provide the lowest financial cost of borrowing to high-risk borrowers who otherwise would have to turn to high-cost finance companies, loan sharks, or pawn brokers.

Anthony studies four borrowing groups associated with Working Capital, a nonprofit organization operating since 1990. Working Capital (WC) operates as an umbrella organization that franchises its peer-borrowing methodology and training materials to over 70 local nonprofit agencies and affiliates in several states. In this program, trust and personal relationships among the members of the borrowing groups are built up during a lengthy training period, before any loans are made. Anthony's examination of trust includes two forms of trust. "Low-risk cooperation" involves the interaction of members on a variety of tasks, such as helping one another on a personal matter, cooperating on a joint business venture, or referring customers. Such low-risk cooperation particularly may occur during the training period before loan decisions are made. Anthony calls the second measure of trust "high-risk cooperation," which involves whether the members formed a "group fund"—formed by each member contributing a set dollar amount to a pool before any member would receive a loan. The group fund serves as a type of collateral, in that it could be tapped to make a loan payment for a member who misses a loan payment.

In addition to interview information, including a telephone survey, of members of each WC borrowing group, Anthony obtained information from WC's loan database, which had information on all WC borrowers, many of whom were female. Anthony collected data on the number of loans, repayment status (paid, current, past due), and the number of days past due. She could examine delinquency and defaults on the loans and relate these to her two measures of trust.

Anthony finds that two-thirds of all borrowing groups are delinquent at some time in repaying loans, and more than one-third have a positive default rate (meaning that someone in the group defaults on a loan). Individual delinquency rates were 30 percent, and fewer than

10 percent defaulted. These numbers indicate that these micro-credit programs are aimed at high-risk borrowers.

Anthony examines default, delinquencies, and the volume of loans at both the group level and at the individual level. Holding constant some characteristics of the business (such as monthly sales and business assets and debt) and some characteristics of the individual entrepreneur (such as education and income), Anthony finds that relationships built on *low-risk cooperation* have a significantly positive effect on *groups'* repayment but no significant effect on *individuals'* repayment. She finds that individual borrowers who establish trusting relationships through low-risk cooperation take out significantly more loans. However, in her analysis of borrowing groups' behavior, she finds that "Unexpectedly, groups in which members engage in low-risk cooperation borrow significantly fewer loans." (Page 564) Anthony suggests that this outcome might be explained by the fact that groups whose members build trust through low-risk cooperation have better information to screen out those potential borrowers who are less likely to repay, thereby limiting the number of loans borrowed by the group as a whole.

In contrast to low-risk cooperation, Anthony finds that relationships built on *high-risk cooperation* (by forming a group fund) have no significant effect on groups' repayment. But she finds that borrowing groups that form group funds take out significantly more loans.

Anthony concludes that the borrowing groups' social interactions in creating trust "become a successful mechanism for screening, selecting, and monitoring borrowers," and "micro-credit borrowing groups provide members the opportunity to create a source of social capital." (Page 565)

Anthony notes that self-employment and informal sources of economic activity in the United States are much more limited than in some foreign countries that have used micro-credit programs extensively. "This implies that encouragement of micro-business...will have a more limited impact on economic development in the U.S." (Page 574, footnote 5) Even so, such programs may become important to some segments of society, and the other paper in this session explores just such a possibility in terms of using microenterprise programs to assist women to move from welfare to work.

In *From Public Assistance to Self-Sufficiency: The Role for the Microenterprise Strategy*, Lisa Servon attempts to determine: (1) whether microenterprise programs can move low-income people to economic self-sufficiency; (2) the characteristics of those participants in microenterprise programs who are successful in starting businesses compared to those who are not; and (3) the benefits, if any, of the training that participants in such programs receive, even if they don't ultimately start a business. Servon uses case studies of three microenterprise programs in the U.S. that target low-income entrepreneurs,

mainly women, to assess these three issues. Although her research relies primarily on in-depth interviews of participants in these programs, she supplements that work with some other data and observations as well as some recent research conducted by two of the microenterprise programs themselves. Servon focuses in particular on entrepreneurs or potential entrepreneurs who are currently, or were previously, on welfare. She does so in order to explore how participation in microenterprise programs may be helpful in assisting public assistance recipients to move from welfare to work, either by successfully starting a small business or by using the program's training to at least find steady employment.

Servon notes that there are more than 325 microenterprise programs in 46 states in the U.S. that in 1995 helped to generate more than 36,000 small businesses. She also notes that other research has found, however, that self-employment in a microenterprise usually isn't a household's sole means of support, other sources of income are also important for many families. Consequently, self-employment by itself is unlikely to be an easy answer to how to move families from welfare to work.

Among the many microenterprise programs in the U.S., some focus primarily on making credit available ("credit-led programs") and others give more emphasis to training entrepreneurs ("training-led programs"). Servon's study looks at three training-led programs, only one of which makes loans directly. This latter program is the Women's Initiative for Self-Employment in San Francisco. The other two are the Institute for Social and Economic Development, in Iowa, and the Women's Housing and Economic Development Corporation (WHEDCO), in the Bronx, NY.

On the basis of surveys of participants in these microenterprise programs who pursued self-employment, Servon finds "the interview data suggest that public assistance recipients who are able to use self-employment as an exit strategy [from welfare] appear to be a niche population within the larger universe of people who rely on public assistance." (Page 538) The author found three important characteristics among the entrepreneurs who were able to leave welfare: "their ability to tap into strong support networks; experience or training in their line of business; and fierce determination." (Page 538)

Servon also finds that even those participants in microenterprise programs who do not choose to start a business benefit from the training they received in these programs and are able to move toward self-sufficiency and off welfare, for example, by obtaining mainstream employment. The microenterprise programs help to enhance participants' self-confidence, economic literacy, and their skills in writing and analyzing business issues, all of which help them even if they do not go on to start their own businesses. Servon views these microenterprise programs as opportunities for people with low incomes to move toward self-sufficiency, even though a microenterprise by itself may not

make a family entirely self-sufficient. By helping to build skills that can be used both in entrepreneurial activities or in mainstream employment, Servon argues that microenterprise programs should be viewed as one among several strategies for moving people from public assistance to self-sufficiency. She cautions, however, that "Self-employment is a transition strategy or a partial solution for many precisely because it is often insecure and unstable." (Page 543) But Servon argues that support for a variety of approaches to moving people off welfare makes sense, and observes that one of the barriers to using microenterprise strategies more broadly as an exit strategy from public assistance is that states' treatment of self-employment as a means to move off welfare varies widely. Some states refer welfare recipients to such microenterprise training programs, while other states do not view participation in such a program as an allowable activity for welfare recipients. Servon argues that states should encourage the use of microenterprise programs as an alternative means for moving people from welfare to work.

In his discussion of this session, **Curt Hunter** of the Federal Reserve Bank of Chicago noted that the microenterprise programs and micro-lending programs examined by Servon and Anthony were unlike most traditional lending programs, in that business training to the potential borrowers was an important part of these programs.¹¹ Hunter observed that both authors found that the programs studied offered two types of benefits: business training and a psychological benefit in that the programs helped motivate participants and build their self-confidence.

In commenting on Servon's paper, Hunter noted that Servon concluded that the training provided by microenterprise programs can be used by low-income heads of households to become self-sufficient. But Hunter suggested that Servon's evidence on this point was at best mixed, since some individuals were successful in exiting welfare and others were not. Although Servon was able to identify several differences between individuals who successfully used the microenterprise programs and those who did not, Hunter argued that the author should attempt to more systematically control for differences across the individuals interviewed in the programs. Hunter suggested providing more details on the training programs offered by the three microenterprise programs studied by Servon. In particular, one factor that he thought could be important to a program's success is whether business training is interactive over a period of time, that is, training is followed by work, which is then followed by additional training (a process Hunter called a nonlinear approach). Hunter also thought it would be important to assess the success of microenterprise programs in different economic environments, such as over the course of an entire business cycle, before definitive conclusions could be drawn about their success.

In his comments on Anthony's paper, Hunter noted that the characteristics of relationship lending discussed in other sessions in the

conference, and about which there is a large and growing literature, were parallel to the characteristics considered to be key ones in the micro-lending program studied by Anthony. He suggested that the author more rigorously compare and contrast the micro-lending model studied in her paper with more traditional models of relationship lending. Hunter also raised concerns about possible sample selection bias in Anthony's research, particularly since it seemed to him that only surviving micro-businesses were included in the sample. Hunter remarked that other literature in finance has argued that peer monitoring can be an effective approach to monitoring incentives, and the micro-lending program examined by Anthony employed such peer monitoring. But since individual members of the borrowing group must bear some risk because of the interdependence created by the program among the group's members, Hunter suggested that any costs to individual borrowers of this increased interdependence must be considered against the benefits of improved monitoring. Hunter noted that this issue remains unsettled for foreign micro-credit programs, such as Grameen Bank's, as well as for the U.S. programs of the type studied by Anthony.

Credit Scoring and Securitization of Small-Business Loans

The final session of the conference explored the topics of credit scoring and the securitization of small-business loans. The first paper by **Zoltan Acs**, *The Development and Expansion of Secondary Markets for Small Business Loans*, considers the link between the development and expanded use of credit scoring and the ability of financial institutions to securitize loans. Acs points out that Congress removed regulatory obstacles to the securitization of small-business loans in 1994 when it passed the Riegle Community Development and Regulatory Improvement Act. This act allowed securitized small-business loans to be treated similarly to securitized mortgage loans by eliminating state-level investment restrictions and securities-registration requirements and by reducing certain federal regulatory restraints on the issuance of securities backed by small-business loans. For instance, this legislation relaxed federal restrictions on the ability of federally regulated banks, thrifts, credit unions, and pension funds to invest in such securities.

Despite these changes in law and regulations, Acs notes that the market for securitizing small-business loans has been developing only slowly, other than the securitization of small-business loans guaranteed by the Small Business Administration (SBA). This slow growth in the securitization of small-business loans has been in marked contrast to the rapid growth in the securitization of mortgages and of credit card receivables. Acs argues that, in principle, the expanded use of credit scoring models by lenders to small businesses should help to expand the use of securitization of small-business loans, because credit scoring

should help to reduce the cost to lenders of assembling packages of small-business loans that can be securitized. In particular, Acs argues that the automation of the assessment of the riskiness of small-business loans, and the standardization implicit in the use of credit scoring to make these loans, remove a major obstacle to the development of secondary markets for small-business loans.

Acs's paper describes the process of securitizing a loan and how it converts an illiquid pool of loans into a liquid security that can be sold to a third party. He also outlines the basic requirements of establishing a successful securitization program and describes some of the benefits and limitations of the securitization of loans.

In pulling together information on the use of securitization for small-business loans, Acs relies on a variety of data sources as well as on his own field research in conducting interviews of a variety of players involved in credit scoring and in loan securitization. Acs cites data compiled by the Federal Reserve in 1998 that indicate the annual issuance of relatively modest numbers of securitized small-business loans (excluding those guaranteed by the SBA) despite the Riegle Act of 1994. Some of the reasons cited by the Federal Reserve for these modest figures included the lack of standardized lending terms, the lack of uniform underwriting guidelines, the historical nature of relationship lending to small businesses, and the lack of historical data on credit performance. Acs notes that the more frequent and more sizable securitizations of SBA-guaranteed loans are likely to have benefited from the fact that the SBA requires those loans to have more standardized underwriting guidelines and loan documentation.

Acs maintains that credit scoring of small-business loans should help lenders put together a pool of loans with similar risk profiles that would be easier to securitize. He describes the credit scoring process, which provides a prediction of the odds of repayment so that lenders can rank-order applicants according to probability of repayment, and summarizes the factors typically most important in credit scoring models. He also discusses vendor-provided credit scoring models used by smaller lenders, who don't have sufficient data within their own loan portfolios to construct such a model. He notes that the benefits of credit scoring include reduced costs to lenders and to borrowers in filling out loan applications, greater objectivity in lending decisions, and the technique's ability to evaluate the riskiness of the borrower and the probability of loan repayment. On the other hand, Acs notes that credit scoring has limitations, since not all borrowers may be well represented in the data used to generate the model; the models may not be robust in assessing the riskiness of different sizes of small-business loans; and the models may not perform as well during a recession as they have during the current economic expansion, simply because they include little data from recessionary periods.

Despite the fact that credit scoring helps overcome the lack of standardization of lending terms and the lack of uniform underwriting guidelines, which are important barriers to the use of securitization of small-business loans, Acs finds that the rate of securitization of small-business loans has not increased in recent years even though use of credit scoring has become more widespread. He then considers some of the reasons for this. For one, he argues that banks have benefited from the long economic expansion and have balance sheets that are in very good shape. In particular, he argues that banks have ample sources of liquidity and therefore feel less need to securitize small-business loans. For another reason, he argues that the infrastructure for securitizing small-business loans has yet to become as well developed as the infrastructure that now supports the securitization of mortgages, with the exception of the SBA-guaranteed small-business loans. He cites an example of a company that attempted unsuccessfully to create a program to securitize small-business loans of small community banks. Acs argues that these community banks also did not have a great need for a new source of liquidity, given the healthy status of their balance sheets. He also argues that fierce competition for small-business loans has narrowed spreads on these loans to a point at which the costs of securitizing them may offset the benefits of doing so for the smaller banks. Acs also suggests that smaller banks may have been focusing on other issues, such as preparing for the century date change as the year 2000 arrives, or on growth in their lending markets.

In the revised paper prepared for the conference volume, Acs concludes that neither small nor large banks appear to be very interested in the securitization of small-business loans at this time and that even though the use of credit scoring models may be a necessary condition for the securitization of such loans, it clearly has not been a sufficient condition. He surmises that changes in the overall conditions of the economy may have to occur before banks have more incentive to securitize small-business loans. In particular, Acs says that his study does not suggest that the slow growth of securitization is the result of regulatory restraints, but instead seems to be the result of market forces.

The paper by **Michael Padhi, Lynn Woosley, and Aruna Srinivasan, *Credit Scoring and Small Business Lending in Low- and Moderate-Income Communities***, explores the question of whether the use of credit scoring reduces lending to small businesses in low- and moderate-income communities. Their answer to that question is no. In fact, they find that small-business lending in low-income areas is higher for lenders that use credit scoring, compared to those who do not.

The study of Padhi et al. combines CRA small-business lending data, demographic information on census tracts from the Census Bureau for six southern states, and a telephone survey of the 200

largest banking companies conducted by the Federal Reserve Bank of Atlanta. The authors control for small-business activity in each census tract and for various institution-specific and community-specific variables (including the presence of bank branches in the area), then compare the lending activities of banks that use credit scoring in small-business lending to those banks that do not.

Since small-business lending tends to be more relationship-based (as noted in other papers in this conference), some analysts have suggested that credit scoring—which is more identified with transaction-based lending—is likely to reduce small-business lending. In addition, lending to small businesses in low- and moderate-income areas is likely to be more closely linked to relationship lending than is most small-business lending, so large banks that use credit scoring may be less likely to lend in low- and moderate-income areas than in higher income areas. At least, this is the line of reasoning the authors want to address in their study.

On the other hand, the authors note that credit scoring is also a technological advance that could reduce the cost of extending small-business loans and could also reduce costs to the borrower when applying for a small-business loan. These effects would tend to increase the amount of small-business lending by banks that use credit scoring, even to low- and moderate-income areas. Consequently, whether banks that use credit scoring actually reduce or increase lending to low- and moderate-income areas is an empirical issue, one that the authors address in their statistical analysis.

The authors examine lending in low- and moderate-income areas by both banks that use credit scoring and those that do not. They also examine the lending behavior of banks that have at least one branch within the census tract in which a small-business loan is made (called in-market lenders) and those banks that do not (called out-of-market lenders). The study included all urban census tracts in Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee, states in the Atlanta Fed's District.

The authors present comparative statistics and regression analyses in their paper that show that banks that use credit scoring are more likely to have a higher proportion of their assets in small-business loans in low- or moderate-income tracts than in higher income tracts, and that small-business loans in low- or moderate-income tracts are more likely to be made by banks that use credit scoring than by banks that do not. For banks that don't use credit scoring, the amount of small-business lending originated in any tract is significantly and positively related to whether they have branches in the tract. But for credit scoring banks, the relationship between branch presence and lending is less important.

Since credit scoring of small-business loans is becoming more widespread, the authors argue that whether credit scoring is likely to

increase or decrease lending in low- and moderate-income neighborhoods is an important issue. Although Padhi, Woosley, and Srinivasan view their findings as preliminary, they conclude that banks that use credit scoring are more likely to lend in low-income areas than those banks that don't use credit scoring.

Loretta Mester of the Federal Reserve Bank of Philadelphia discussed the papers in this session and noted that both papers presented positive conclusions about the impact of credit scoring on the availability of small-business loans. But in her comments she raised the point that even though the amount of funding available for small businesses might be increased by credit scoring and securitization, the nature of the market may be changed significantly by these technological developments and the transition to this new state of the world is likely to involve some pain.

Mester began by enumerating a variety of benefits of credit scoring for both banks and their small-business customers, then noted a number of its limitations. Two of the important limitations, which were related to the topics of the paper by Padhi et al., were that low- and moderate-income borrowers may not be well represented in credit scoring models and that the credit scoring models had been estimated during a period that did not include a significant economic downturn. She drew on experience with the credit scoring of mortgages to illustrate some of the problems with the accuracy of credit scoring models.

In discussing the specifics of the two papers, Mester argued that Padhi et al.'s results were very interesting, but not totally convincing. She suggested that in their statistical work the authors try to control better for certain characteristics of the bank, such as bank size (which is likely to be correlated with the use of credit scoring), and for other variables that could indicate differences in the demand for loans across census tracts. Mester argued that it would be helpful to have more information about the characteristics of the scoring and non-scoring banks used in the authors' analyses.

Mester also suggested that the authors try to extend their analysis to nonbank lenders, since many nonbank institutions have begun to use credit scoring in making small-business loans. Furthermore, she suggested that the authors attempt to control for the type of credit scoring model used by the various lenders.

Mester observed that credit scoring might help lenders price the riskiness of small-business loans and that this was critical to the discussion of credit scoring and securitization in the paper by Zoltan Acs. If credit scoring allows banks to securitize small-business loans, the total volume of lending to small businesses may rise, which Acs argued would be beneficial. In Mester's comments on the paper by Acs, she noted that it was not entirely clear whether a secondary market in

small-business loans would be needed, and she also argued that neither Acs nor Padhi et al. considered how credit scoring might affect the *type* of small-business lending that would be done and how the nature of the marketplace might change.

Mester recalled how many of the earlier papers in the conference discussed the lending relationship between small-business borrowers and their lenders and how they contrasted relationship lending and transactions-based lending. She noted that credit-scored loans were more like transactions-based loans than the more traditional relationship-based loans that allow more flexibility of loan terms. She argued that credit-scored small-business loans would be more likely to have less flexible loan terms and that small businesses that don't need such flexibility will ultimately tend to shift toward such types of loans, whereas other borrowers will want to continue to obtain more traditional small-business loans. Since large numbers of loans are required to properly estimate credit scoring models, bank consolidation will tend to give larger banks the ability to build better models on which to base their lending decisions, while smaller banks are likely to retain their niche in making more traditional relationship loans. One caveat to this, however, is that small businesses that have obtained credit-scored loans, and banks that are offering such loans, have generally not experienced an economic downturn with these loans. Mester suggested that many small businesses may reassess the value of relationship loans vis a vis credit-scored loans after experiencing a recession.

Greg Elliehausen of Georgetown University's Credit Research Center, the other discussant for the papers in this session, argued that Zoltan Acs's paper could have made a stronger case for credit scoring in small-business lending relative to traditional small-business lending.¹² In particular, Elliehausen felt that some of the limitations of credit scoring enumerated in Acs's paper were also problems for the more judgmental credit evaluation methods used in relationship lending. Furthermore, Elliehausen cited the strengths of credit scoring in its use of information compared to more judgmental evaluations of loan applications—strengths that provided benefits for both the borrower and the lender. Although Elliehausen agreed that small-business credit scoring models have not experienced a significant downturn in the economy, he argued that many credit analysts who employ relationship lending have not experienced such an economic downturn either. So relationship lending to some extent shares this shortcoming with credit scoring.

With regard to the Padhi et al. paper, Elliehausen complimented the authors on the construction of their database but suggested that they document some additional details about the data, such as the distinguishing characteristics of the banks that did not respond to their

survey about the use of credit scoring, as well as information about census tracts for which the authors were not able to obtain Dun and Bradstreet small-business data. These omissions raised questions for Elliehausen about the representativeness of the data. He also felt that the empirical model required additional explanation and development, including greater discussion and justification of the variables used in the regression model. Nevertheless, Elliehausen felt that the preliminary findings of the Padhi et al. paper, as well as Acs's arguments in his paper, made a good case for encouraging the use of credit scoring in small-business lending.

Elliehausen noted that the growth of credit scoring and securitization of credit card receivables coincided with the expansion of credit card ownership among low- and moderate-income households. To Elliehausen, this expansion reflected the fact that credit scoring and securitization of credit cards helped reduce costs and risks of issuing credit cards to such households. He concluded that credit scoring and securitization of small-business lending is likely to have a similar effect on the availability of small-business loans to low- and moderate-income customers, as Padhi et al. appeared to find in their study.

Conclusion

The papers at this conference covered a lot of ground, but more research on these topics will be needed before a consensus emerges on some of them. Indeed, the conference itself was not expected to forge such a consensus, but rather to encourage, as Chairman Greenspan said, "sound analysis and open discussion" which "are essential to furthering our understanding of financial markets." (Page 39) In addition, other important topics not addressed by papers in the conference—for example, equity financing—await future research. It is hoped that the conference will stimulate this research. As noted by Governor Gramlich, "This conference is an important milestone, both in understanding small businesses and their need for credit, and in promoting data collection and analysis." (Page 49) In that spirit, the conference proceedings should be useful to practitioners and academics alike.

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Notes

- ¹ Readers should be aware that the authors had the opportunity to revise their papers before the papers were printed in the conference volume, but the discussants' comments in this volume generally reflect their comments based on the papers as presented at the conference.
- ² Immergluck's paper was presented at the conference by Malcolm Bush, President of the Woodstock Institute.
- ³ This finding with respect to female-owned firms is similar to that found in another paper in this session by Bostic and Lampani, while the session's other paper by Cavalluzzo, Cavalluzzo, and Wolken finds some significant differences for female-owned firms once a measure of banking market concentration is included.
- ⁴ The version of their paper prepared for the conference proceedings is substantially revised from that circulated to their discussants and made available at the time of the conference. Consequently, discussants had an opportunity to revise their own comments.
- ⁵ Other papers in the conference that focused on other issues involving small businesses' access to credit, but included variables indicating minority status of the borrower, also typically found that the minority status variable was negative and statistically significant.
- ⁶ Not even a later paper in the conference by Huck, Rhine, Bond, and Townsend includes a sample of minority-owned firms with an average age as young as Bates cited. Huck et al. say that the average age of Black-owned firms in their survey is 13 years and the average age of all firms is nine years.
- ⁷ The authors attribute the difference to the fact that vehicle loans are asset-backed loans, whereas lines of credit are not. They argue that lines of credit, more so than vehicle loans, are characterized by relationship lending and its associated costs.
- ⁸ This point is also pursued in several papers later in the conference.
- ⁹ A paper by Denise Anthony about micro-credit lending in a later session also focuses on the issue of trust.
- ¹⁰ These issues were also raised in a later session on *Credit Scoring and Securitization of Small Business Loans*.
- ¹¹ Some banks do partner with community organizations that provide credit counseling, especially mortgage credit counseling, and business training to potential borrowers.
- ¹² Elliehausen was unable to present his comments at the conference but submitted written comments on the papers.

KEYNOTE ADDRESS: CHANGES IN SMALL BUSINESS FINANCE

Alan Greenspan

Chairman, Board of Governors of the Federal Reserve System

Introduction

I am pleased that this conference has been able to draw together such a knowledgeable group of Federal Reserve System economists and experts from outside the System to address issues of great significance to our business and banking communities. There are, no doubt, many different views on the potential effects that developments such as credit scoring, loan securitization, and bank consolidation, among others, are having on credit availability for U.S. businesses. But I think we would all agree that sound analysis and open discussion in meetings like this are essential to furthering our understanding of financial markets.

It is also important to place recent developments in business finance in the context of the fundamental forces that have shaped our economy during the 1990s. I will focus my remarks today on what I view as key elements in this process and the implications for small businesses.

The U.S. Economy and Technological Change

The United States is currently in its ninth year of economic expansion, an exemplary accomplishment by any standard. Growth of output has remained vigorous, unemployment is lower than it has been in nearly thirty years, and yet, despite the tautness in labor markets, there have been no obvious signs of emerging inflation pressures.

From the perspective of small businesses, the 1990s have provided a challenging and positive environment for developing and marketing new ideas. Even the most reclusive among us cannot help but be aware of the surging growth of young high-tech firms and the flashy presence of new Internet businesses. But times seem to have been good for expanding traditional lines of business as well. Our regional Federal Reserve Banks consult regularly with representatives from their small business communities. The feedback that we have received from these groups and information from surveys of small businesses—such as those taken by the National Federation of Independent Business—have revealed high levels of business optimism in recent years. The most common complaints—other than dissatisfaction with

the tax structure—have centered on the difficulty of filling jobs with qualified workers in the midst of strong competing demands for labor. While troublesome, such concerns are also indicative of an expanding economy that is productively competing for scarce resources. For the vast majority of small businesses, access to credit has not been a top concern in this expansion, but many business owners are quite anxious about the future as the familiar ways of financing business undergo sometimes dramatic changes.

A remarkable element in our recent prosperity has been the rapid acceleration in the application of computer and telecommunications technologies, which have engendered a significant increase in productivity in this expansion. Although difficult to pin down empirically, some calculations suggest that the rate of return on capital facilities put in place during recent years has moved up markedly. Meanwhile, the process of recognizing this greater value has produced capital gains in asset markets that have lowered the cost of investment in new plant and equipment. Dramatically declining inflation expectations have helped to lower risk premiums on debt and have contributed importantly to the favorable investment environment.

In addition to improvements in the efficiency of the capital stock, we likely are witnessing payoffs from improved organizational and managerial efficiencies of U.S. businesses and from the greater education—in school and on the job—that U.S. workers have acquired to keep pace with the new technology. All these factors have been reflected in an acceleration of labor productivity growth. While the pace of technological change has been breathtaking, the process of innovation is not itself a new phenomenon. Capital equipment, production processes, and financial and labor market infrastructures are always in a state of flux. I believe the words that best characterize this phenomenon are those used several decades ago by Joseph Schumpeter who described the process of “creative destruction.” Competition and innovation breed the continuous churning of our capital stock in ways that, on balance, result in more efficient production of goods and services and enhance our standard of living. New businesses are formed and existing businesses fail or contract, new products and processes replace old ones, new jobs are created and old jobs are lost. I never cease to be amazed at the ability of our flexible and innovative economic system to take advantage of emerging technologies in ways that raise our productive capacity and generate higher asset values.

In this country, technological advance is a process that combines the best creative thinking of entrepreneurs and research scientists in business and academia. It is a process that thrives in a competitive market environment in which risk-taking is valued and in which

prices and asset values signal how ideas and resources can be applied most productively.

Clearly, small businesses are crucial players in this process. Nowhere in the world are the synergies of small and large businesses operating side by side in a dynamic market economy more apparent than in this country. The list of innovations by small businesses is enormous, in fields such as computer technologies, software, aerospace, pharmaceuticals, and satellite communications. And while we would be foolish to ignore the significant contributions of corporate giants, it is important to note that many of today's corporate giants were small businesses not all that long ago. America's innovative energy draws from the interaction of both large and small businesses, and will continue to do so.

Changes in Financial Markets

An important key to the success of small and large businesses is having access to capital and credit. First and foremost, I would emphasize that credit alone is not the answer. Businesses must have equity capital before they are considered viable candidates for debt financing. Equity acts as a buffer against the vagaries of the marketplace and is a sign of the creditworthiness of a business enterprise. The more opaque the business operations, or the newer the firm, the greater the importance of the equity base.

The United States has been a leader in the development of public and private markets for equity capital. Venture capital investments in rapidly growing small businesses totaled more than \$14 billion in 1998, with much of the funds provided by private partnerships. Probably an even larger amount was invested privately by high net-worth individuals—so-called 'angel' investors. These sources are an essential part of the financial foundation for the dynamic young enterprises that are so central to our wealth-creating process. Still, more than two-thirds of equity financing for small businesses comes from the owner or family and friends.

Continued efforts to develop the markets for private equity investments will be rewarded by an innovative and productive business community. This is especially true in lower-income communities, where the weight of expansive debt obligations on small firms can severely impede growth prospects, or more readily lead to business failures.

On the credit side, the same forces that have been reshaping the broader economy have also been transforming the financial services industry. The advent of computer and telecommunications technology has lowered the cost and broadened the scope of financial services. These developments have made it increasingly possible for borrowers and lenders to transact directly, and we have seen a

proliferation of specialized lenders and new financial products that are tailored to meet very specific market needs. At the same time, the development of credit scoring models and securitization of pools of loans hold the potential for opening the door to national credit markets for a broad spectrum of businesses operating in local and regional markets. As a result, competitive pressures in the financial services industry are probably greater than ever before. This competition has been heightened by deregulation and the removal of barriers to interstate banking. Evidence that this process is well under way can be found in the new CRA data on small business lending. These data show, for example, that institutions located outside the local community are an important source of credit for many businesses.

Changes in financial markets are perhaps most apparent in the realignment taking place among our commercial banks. Most projections of the future U.S. banking structure call for a substantial reduction in the number of American banks. Recent mergers have already resulted in the creation of nationwide banks and large financial service companies. More are sure to come. However, we should not expect that all institutions will become financial supermarkets. Indeed, I have no doubt that thousands of smaller banks will survive the consolidation trend, reflecting both their individual efficiencies and competitive skills, on the one hand, and the preferences of the marketplace for personalized service on the other.

The demand for traditional services by smaller businesses and by households should continue to flourish. And the information revolution, while it has deprived banks of some of the traditional lending business with their best customers, has also benefited banks by making it less costly for them to assess the credit and other risks of customers they would previously have shunned. Thus, banks of all types will likely continue to engage in a substantial amount of traditional banking.

Indeed, an often-expressed concern with the ongoing consolidation of the U.S. banking systems is a feared reduction in the supply of credit to small businesses. However, studies of the dynamic effects of bank mergers and acquisitions suggest that while mergers are apt to reduce small business lending by the participants, this decline appears to be offset in part, or even in whole, by an increase in lending by other institutions in the same local market. With the benefits of improving technology, well-managed regional institutions will seize the opportunity to increase their customer base in markets where large institutions have acquired local competitors. I think it is safe to say that, whatever their cost advantages, large automated systems can never fully displace the value of personal contact and familiarity with local economic circumstances, which are the keystone of community banking.

Potential Impediments to Efficient Resource Utilization

Overall, our evolving financial system has been highly successful in promoting growth and higher standards of living. However, much work remains to be done to improve the process. Barriers still prevent the free flow of capital and people to their most productive employment. In the small business sector, potential impediments include: lack of market information, difficulties in assessing risk, high transactions costs for small loans, and, in rural areas, special challenges associated with geographic distance from lenders and potential markets. One particular barrier—apparent disparities in the access to credit for minority-owned businesses—is the focus of several papers being presented at this conference.

In some cases, these studies have found discrepancies in the turn-down rates for minority-owned small business applicants responding to our small business survey. Not all of these differences are readily explained by income, balance sheet factors, or credit histories, although considerably more work needs to be done to take account of possible explanatory factors not included in the studies to date. But, if after such examination the gap persists, it raises disturbing questions.

To the extent that market participants discriminate—consciously or, more likely, unconsciously—credit does not flow to its most profitable uses and the distribution of output is distorted. In the end, costs are higher, less real output is produced, and national wealth accumulation is slowed. By removing the non-economic distortions that arise as a result of discrimination, we can generate higher returns to human capital and other productive resources. It is important for lenders to understand that failure to recognize the profitable opportunities represented by minority enterprises not only harms these firms, it harms the lending institutions and, ultimately, robs the broader economy of growth potential. In this regard, we need to make further progress in establishing business relationships between the financial services sector and the rapidly growing number of minority- and women-owned businesses.

This conference highlights several developments that hold the promise of improving such links. As large banks and finance companies try mass-market approaches to small business lending, the potential for inappropriate discrimination is diminished. In addition, new intermediaries—such as community development corporations, micro-business loan funds, or multi-bank and investor loan pools—are beginning to build expertise in specific areas of the small and minority business marketplace. These innovators are working with traditional lenders to develop new approaches to managing costs and evaluating the risks associated with providing financing for very small and young firms.

Conclusion

Let me conclude my remarks by thanking the participants at this conference for helping us to better understand the forces at play in financing small businesses. Several of the papers presented have drawn on data reported by banks as part of their CRA requirements and several others have used data from the Federal Reserve's 1993 National Survey of Small Business Finances. The Fed currently is working on its third survey of 6,000 small businesses—to be known as the 1998 Survey of Small Business Finances. We expect this new information, coupled with annual CRA reports, to add greatly to our knowledge of changes taking place in small business finance. I want to thank in advance any small business that is selected to be part of the Fed's new survey and to encourage them to participate. It takes a lot of time and effort for survey respondents to answer our detailed questions, but as evidenced by the presentations here, the information is very valuable to us. More broadly, it is the type of information that provides the basis for sound analytical research on many important issues.

COMMUNITY AFFAIRS AT THE FEDERAL RESERVE

Each of the 12 Federal Reserve Banks in the Federal Reserve System has a Community Affairs Office that provides financial institutions and others with information on the Community Reinvestment Act, community and economic development, and issues related to credit access. The Community Affairs Offices also provide resource information, technical assistance, and regulatory guidance to community-based organizations, government entities, and a wide variety of other organizations engaged in community and economic development. Community Affairs fosters collaboration and provides information for the improvement of communities and the lives of the people who live in them.

Mission

The mission of the Community Affairs program of the Federal Reserve System is to support the System's economic growth objectives by promoting community development and fair and impartial access to credit.

Products and Services

Each Federal Reserve Bank Community Affairs Office (CAO) develops specific products and services to meet the informational needs of its regional market. These information products and services fall into three major areas:

Publications

The CAOs issue a wide array of publications. These include newsletters that highlight community reinvestment activities, profiles that assess the credit needs of communities and identify programs that help banks meet those needs, and special publications that cover topics such as fair lending and small business technical assistance.

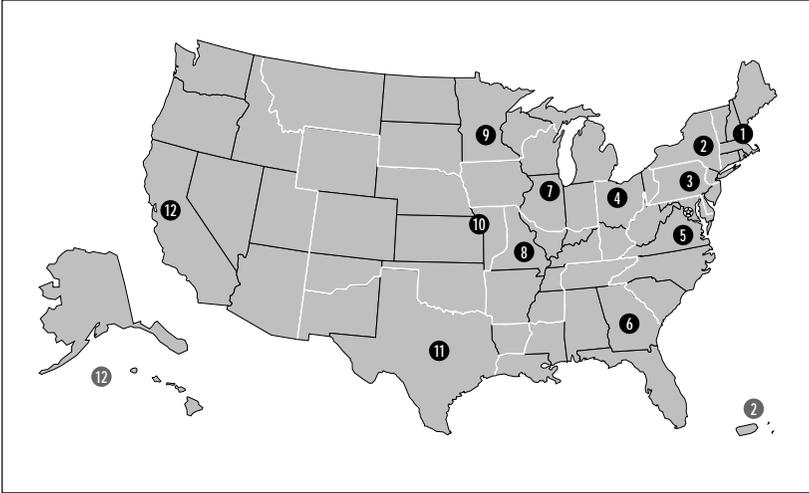
Conferences, Training, and Presentations

The CAOs sponsor and participate in a variety of public forums that provide information and guidance on CRA-related requirements, community investment and development opportunities, and model programs and resources from around the country.

Technical Assistance

The CAOs provide a wide range of technical information on community and economic development, including information on the creation of multibank community development corporations, public/private affordable housing development partnerships, and small business lending.

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