

Literature Review

Introduction

An extensive literature on small business lending has examined the impacts of restructuring in the financial industry on banks' capacities to satisfy credit needs of small businesses. This inquiry is important since small businesses represent one of the most vulnerable yet critical parts of the national economy. Accordingly, this chapter will explore the lending techniques and specializations of small and large banks. As the industry consolidates and banks become larger, on average, is the industry as a whole still able to meet the variety of credit needs of small businesses? Alternatively, do small businesses now experience less access to some types of lending in which smaller banks excelled? The impacts of consolidation will also be assessed by a review studies that have explored whether small or large banks are more likely to practice discrimination in small business lending. In addition, the review discusses lending patterns in rural areas, given the prevalence of rural areas in the Appalachian region. Finally, the literature review contributes to the report's regression analysis in the next chapter by providing insights into the variables to use in the regression analysis.

Banking consolidation has been at the center of attention for several years due to the large number of mergers and acquisitions. In June 2002, the portion of total industry assets held by the largest 50 bank holding companies constituted 70 percent whereas in June 1997 this figure was 52 percent (Ou, 2005). At the same time number of small banks with the assets under \$500 million decreased from 8,647 in 1997 to 7,208 in 2002. Hence, researchers have given prominent attention to the impacts of bank consolidation in small business lending.

Bank consolidation remains a complex and controversial issue. Some researchers argue that it is not efficient for large banks to provide small business loans as these loans are associated with relationship financing involving detailed and individualized attention to small business borrowers. On the other hand, other research indicates that large banks have

dramatically increased their small business lending as they have adopted credit scoring and have achieved economies of scale in small business lending. While large banks have undoubtedly increased their small business lending, it is not clear that they have the ability to satisfy all credit needs, particularly the needs for larger loans and lines of credit associated with the relationship lending of small banks. In fact in recent years, large bank credit card lending, which is a type of transactional lending, has increased dramatically. Credit card lending has surged to such an extent that average loan amounts (\$32,400 in 2004) made to small businesses with revenues greater than \$1 million were actually smaller than average loan amounts (\$42,600) made to the smallest businesses with revenues under \$1 million¹². The larger small businesses are receiving a greater portion of credit card loans than the smallest small businesses.

The increase in credit card lending and the rise of credit scoring lending by large banks begs the question of whether the range of credit needs of the smallest businesses are being adequately met. In this era of consolidation, are the smallest businesses receiving an adequate supply of larger loans and sufficient access to lines of credit, which are more often associated with smaller banks?¹³ On the other end of the scale, are the smallest businesses receiving an adequate supply of credit card lending and small loans; although large banks are increasing credit card lending is the credit card lending reaching the smallest of the small businesses?

Relationship and Transactional Lending

In general, researchers agree on the typologies of lending techniques used by large and small banks. They distinguish between financial statement lending, asset-based lending, credit scoring, and relationship lending. (Mitchell, 2004). The first three represent “transactional” lending as they are based on the “hard” or objective information about a

¹² FFIEC. Reports – Findings from Analysis of Nationwide Summary Statistics for 2004 Community Reinvestment Act Data Fact Sheet (August 2005). http://www.ffiec.gov/hmcrpr/cra_fs04.htm

¹³ Smaller banks have legal limits on the size of their small business loans (Berger, Rosen, Udell, 2001) The reference to larger loans made by smaller banks refers to non-credit card loans (credit card loans are usually in amounts of \$10,000 or less) and/or loans in amounts greater than \$100,000. Credit scoring used by large banks are usually applied to loans in amounts of \$100,000.

borrower. For underwriting purposes, asset-based lending uses information about the accounts receivable, inventory, and other forms of collateral. Credit scoring is based on the owner's history of using credit. Financial statement lending is rarely used for small business lending as it looks at the audited financial statement of companies that have an access to public credit market. In contrast, relationship lending, is based on "soft" information about the potential borrower. In other words, banks rely on the subjective information about a borrower that they received out of the lasting relationships rather than on financial condition of the borrowers. Another indication of relationship lending as reported by Cavalluzzo, Cavalluzzo, and Wolken (2001) is that 84 percent of the loans received by small businesses came from lending institutions located in the same city. The median distance between the firm and the lender was just three miles.

Allen Berger (1999) defines three conditions that should be met for relationship-based finance to occur. First, information other than data from financial statements, collateral and other public resources is collected. Second, the information is collected via continuous communication between the lender and the small business, the customers of the small business, and local community. Third, the information is confidential and can be used only for making further lending decisions.

Relationship lending is mainly associated with small banks whereas transactional lending is typically employed by large banks. Berger and Udell (2001) say that banks employing relationship lending should delegate more authority to loan officers than those that use objective information. Small banks are better equipped to delegate authority than larger ones; smaller banks have considerably fewer loan officers, making it easier for smaller banks to control, trust, and rely upon the quality of loan officers' decisions. Relationship lending is therefore typically done in lower volumes than transactional lending at large banks. Using automated technology such as credit scoring, transactional lending benefits from economies of scale. Large transactional lenders serve relatively high number of customers, enabling them to lower costs per borrower by spreading fixed costs over a large customer base.

Cole, Goldberg, and White provide detailed analysis of differences between relationship, “character”, and transactional, “by-the-number,” lending. They found that large banks mostly use “by-the-number” approach and small banks use “character” information which is based on pre-existing relationships between the bank and a borrower. Using the National Survey of Small Business Finances, Cole, et al. classify small banks as those with assets under \$1 billion and large banks as those with assets above \$1 billion. Cole’s regression analyses appear to confirm the different lending approaches of small and large banks. For example, higher debt-to-asset ratios increase the likelihood that large banks will not approve small business loans whereas small banks are not influenced by debt-to-asset ratios. Cole et al. hypothesize that small banks possess superior non-financial information about their customers and are thus able to make decisions not based purely on the numbers. In the same vein, small banks are more likely to approve loans to small business customers that have deposits at their banks while large banks are indifferent to deposit relationships. It appears that small banks are able to better utilize the experience and information gained through the deposit relationship than large banks.

Impacts of Consolidation

A definitive answer regarding the impacts of consolidation on small business lending will probably never be reached. It is quite likely that the economic, institutional, and regulatory context in which mergers occur determine their influence on the level of lending in communities. Reviewing the literature, Hancock, Peek, and Wilcox (2005) hint at the possibilities of different outcomes. In a study in the late 1990’s, for example, Berger found that merged banks reduce their small business lending, but that other lenders in the community increased their lending in response, often replacing the lost lending of the merged banks. Similarly in the late 1990’s, Peek and Rosengren (1998) concluded that the small business lending behavior of the merged bank resembled the behavior of the acquiring bank instead of the acquired bank. So if the acquiring bank had conducted less small business lending, the newly merged bank was likely to reduce its level of small business lending. Other studies showed that mergers of smaller banks actually increased small business lending while mergers of larger banks had little effect.

While the impacts of bank mergers are likely to be influenced differently by economic and market characteristics, Hancock, Peek and Wilcox (2005) identify important institutional characteristics that are likely to have more uniform impacts at least for larger banks. Hancock, Peek, and Wilcox distinguish between acquisition of banks and merger of bank charters. When a bank holding company (BHC) acquires another BHC, the acquiring BHC can either absorb the acquired BHC's banks completely or let the acquired bank(s) continue lending as a separate entities. In other words, the acquiring BHC can let the acquired bank(s) remain as a separately chartered institutions or it can merge the banks and eliminate the charter of the acquired bank(s). To assess the impacts of acquisitions versus mergers (of bank charters), the study looked at small business lending patterns of the 50 largest bank holding companies excluding credit card lenders. The authors used annual data for the period of 1997-2002.

A major finding is that small business lending remains the same after acquisitions not involving mergers of charters. However, acquisitions involving mergers of separately chartered banks result in declines of small business lending. Researchers used natural log of total assets, log of acquired assets, and the Herfindahl-Hirschman Index (HHI) as explanatory, independent, variables. The HHI measured concentration of assets within the holding company; the higher the HHI, fewer banks within the holding company control more of the holding company's assets.

Estimated coefficients for the log of change of asset size of banks are negative and statistically significant for each model at the 5% level. In addition, estimated coefficients of the HHI on gross amount of originations and purchases are statistically significant and have negative values. Thus, internal growth of assets and increasing concentration of assets through merger of bank charters has a significantly negative impact on small business lending. In contrast, external growth through acquisitions does not affect small business lending. The estimated coefficients for the log of acquired assets were not statistically significant at 5% level. Among the top 50 BHCs in the country, Hancock et al. conclude that larger BHCs (in terms of asset size) tend to reduce their small business

lending. In addition, the reduction is more pronounced when acquiring BHCs merge banks than when the banks are allowed to operate as separately chartered institutions.

Frame, Srinivasan, and Woosley (2001) reinforce the conclusion of Hancock et al. by finding that the share of small business loans in a bank holding company's portfolio increases with the number of subsidiary banks. Frame et al. hypothesize that a subsidiary bank structure is associated with decentralized decision-making in which relationship lending is employed.

Maintaining that large banks increase lines of credit to small businesses, Berger, Rosen, and Udell (2001) come to different conclusions than a substantial portion of the literature. They find that large banks in markets in which large banks are dominant are more likely to increase their line of credit lending to small businesses than smaller banks in markets dominated by smaller banks. The one exception to this is line of credit lending in amounts less than \$100,000; smaller banks are more likely to make these line of credits available to small businesses than larger banks. They attribute their findings to different methodology from the standard literature.

The few studies that examine the impacts of mergers on small business lending in low- and moderate-income tracts generally find that mergers and acquisitions decrease small business lending in these tracts. Reviewing the literature, Immergluck and Smith (2001) state that Samolyk and Richardson (2001) find that banks involved in mergers have smaller growth rates of lending in low- and moderate-income tracts than banks not involved in mergers. From 1996 to 1998, the merging banks' share of small business loans in low- and moderate-income tracts was 13.6 percentage points lower than banks not involved in mergers.

Interestingly and importantly, the Immergluck and Smith (2001) review reports that merging banks tend not to decrease their lending in low- and moderate-income census tracts in geographical areas covered by their CRA exams; the decrease in lending in low- and moderate-income tracts occurs in areas outside the scope of the CRA exams.

Buttressing the finding of CRA's impact is a conclusion in the Frame, Srinivasan, and Woosley study. This study finds that the share of small business lending in a bank's portfolio increases as the percent of recently acquired assets increase. Frame et al. suggest that the positive impact of recently acquired assets is the result of CRA motivating large banking institutions to negotiate CRA pledges with community groups to boost their home and small business lending. In other work related to home lending, Bostic and Robinson have found that banks, in fact, increase their home mortgage lending to low-income and minority borrowers in geographical areas covered by banks' CRA agreements and CRA exams. Regulatory enforcement via CRA exams and the merger application process can mitigate decreases in lending as a result of mergers and in some cases may actually increase lending after mergers.

Credit Scoring

As was mentioned above, credit scoring is one of the techniques employed by transactional lending. Credit scoring has the potential to mitigate adverse impacts mergers by enabling large banks to boost their number of loans. Credit scoring is a process of assigning a score to a borrower based on the previous financial behavior of the borrower. A study conducted by Frame, Srinivasan and Woosley (2001) explores how credit scoring influences large banks' tendency to engage in small business lending. They use data on 99 large banks received through a phone survey. Results showed that 100% of scoring banks used the credit scoring system to issue loans under \$100,000, and 74% used it for loans under \$250,000. Only 21% of banks scored larger loans. Regression results demonstrate that credit scoring leads to an increase in the portfolio share of small business loans under \$100,000 by 8.4% or about \$4 billion per institution. Frame, Padhi, and Woosley (2001) also found that large banks using credit scoring increased their loans in low- and moderate-income tracts to a much greater extent than in higher-income tracts.

Another study that looked at the role of credit scoring was conducted by Berger, Frame, and Miller (2002). They compared "marginal" and "nonmarginal" borrowers. A "marginal" borrower is a borrower whose credit approval depends on use of credit scoring;

and a “nonmarginal” borrower is a borrower who will get her credit approved regardless of usage of credit scoring. Credit scoring for small business loans under \$100,000 lead to an increase in credit availability. Interest rates on loans increase as credit scoring is used. Berger et al. suggest that interest rates increase because credit scoring has increased the number of risky borrowers receiving loans and these borrowers are appropriately charged higher prices. However, for larger loans (\$100,000 to \$250,000) the use of credit scoring does not have a significant effect on credit availability. Indeed, only a few banks in the sample used credit scoring for loans over \$100,000.

While the research suggests that potential decreases in small business lending as a result of consolidation may be compensated by using credit scoring, it seems apparent that credit scoring has its limits. At this point, the industry is not employing credit scoring for loans in amounts greater than \$100,000. As long as this remains the case, credit scoring may not be effective for boosting lending of larger dollar amounts when mergers depress lending of banks. Moreover, the Berger et al. study shows that credit scoring increases interest rates for riskier borrowers, per expectations that riskier borrowers are charged higher prices. However, there is likely to be a segment of riskier borrowers for which credit scoring may lead to either extremely high interest rates or loan denials (due to insufficient credit history, for example). These borrowers depend on relationship lending. If mergers in a particular geographical area decrease small bank relationship lending to a great extent, then mergers could very well decrease access to credit for the hardest to serve borrowers.

Branches, Credit Scoring, and Mergers

Bank branches are generally found to boost small business lending. Frame, Srinivasan, and Woosley report that the number of bank branches increases the share of small business loans in a bank’s portfolio. They also report that branch networks are associated with centralized decision-making networks and increased use of credit scoring by large banks. For relationship lending as well, branches are important because they increase customer contact. Immergluck and Smith (2001) report that their research in Chicago reveals that banks with the highest percentage of their branches in low- and moderate-income (LMI)

census tracts make the highest percentage of their loans in these tracts while banks with the lowest percentage of branches in LMI tracts make the lowest percentage of their loans in LMI tracts. Squires and O'Connor (1999) came to similar conclusions in Milwaukee. Immergluck and Smith review research showing that mergers of banks with branches within the same zip code resulted in less per capita growth in branches within lower income areas. Mergers of banks with branch presence in the same metropolitan area also result in fewer branches in low-income zip codes. By decreasing access to branches in low- and moderate-income areas, in-market mergers will lead to less lending in low- and moderate-income areas, given the strong relationship between branches and lending.

Discrimination

Researchers distinguish between statistical and prejudicial discrimination. Statistical discrimination reflects measurement problems whereas prejudicial involves unjust lending practices. The research generally concludes that while prejudicial discrimination may not be widespread, it occurs in certain loan markets and to certain borrowers. Mitchell and Pearce (2004) using data from 1998 SSBF employ a new approach in that they examine possible discrimination in relationship versus transaction lending and by lender type (banks and non-bank finance companies). They state that many researchers regard line of credit lending as “quintessential” relationship loans since line of credit lending represents a sustained commitment on the part of the bank to make periodic loans to borrowers over a specified time period. Only banks with close relationships with businesses are likely to engage in line of credit lending according to observers. Accordingly, line of credit lending is classified in regression equations as “relationship” loans while “one-shot” deals or transaction loans are commercial mortgages, motor vehicle loans, equipment loans, and capital leases. The authors use data from the 1998 Survey of Small Business Finances (SSBF) that is conducted at five year intervals for the Federal Reserve. Mitchell and Pearce construct variables that reflect the degree of market concentration (as measured by the HHI index) and variables that capture characteristics of the small businesses including gender, ethnicity, creditworthiness, history of bankruptcy, and asset levels.

Mitchell and Pearce find that African-American and Hispanic business owners are less likely to have bank transaction loans than whites after controlling for market and business characteristics, but that there is no statistically significant difference in the likelihood of receiving a bank line of credit (relationship lending). Also, minorities are more likely to have transaction loans from non-banks. In line with the observation that discrimination is not uniform, the authors could not detect discrimination against Asians and females. The counter-intuitive finding that minorities are less likely to receive transaction loans suggests that smaller banks employing relationship lending may remain an important source of lending for minorities. Moreover, the trend for large banks to engage in transaction lending may decrease, not increase access to credit for minorities. Cole et al. also found that smaller banks are more likely to make loans to African-Americans than large banks with assets above \$1 billion.

Cavaluzzo, Cavaluzzo and Wolken (2001) assess the interplay of discrimination and market concentration. In the seminal *Economics of Discrimination*, Gary Becker hypothesized that discrimination is more likely in highly concentrated markets lacking significant competition. In less competitive markets, firms can get away with discrimination while in more competitive markets the discriminating firms are likely to lose out in the competitive race against firms more willing to hire or serve minorities. Supplementing data from the 1993 National Survey of Small Business Finances with creditworthiness data obtained from Dun and Bradstreet, Cavaluzzo, Cavaluzzo and Wolken examined the connection between demographic characteristics of small business borrowers, market concentration, and the ability to access credit.

A series of regression analyses revealed that increases in market concentration as measured by HHI indices result in African-Americans and females being more likely to experience denials of loan applications. Additionally, results show that African-Americans and females are more likely to have unmet credit needs (as measured by a fear to apply because of possibilities of discrimination or actual rejection) when market concentration increases. Finally, a one percentage increase in concentration as measured by an HHI index causes an 11.40 basis point increase in the price of a line of credit for Hispanic small businesses.

Cavaluzzo, Cavaluzzo, and Wolken test the rigor of their model. They conclude that regression results stand up since there is no correlation between market concentration and borrowers' credit scores, meaning that financial institutions do not change their credit score policy when market concentration changes. Overall, the report concludes that gender and race discrimination cannot be omitted when assessing differences in credit application and denial rates. Moreover, their study suggests that consolidation and increasing market concentration can exacerbate discriminatory behavior.

Demand for Small Business Credit

The literature spends much time scrutinizing the relationships among consolidation, discrimination, and lending techniques. The literature on the nature of demand for loans by small business is considerably thinner. An indirect means for assessing the demand for credit is documenting the types of loans used by businesses of different sizes.

The SBA report, *Financing Patterns of Small Firms: Findings from the 1998 Survey of Small Business Finance*, provides detail on the types of credit used by type of small businesses. The SBA report categorizes traditional loans as line of credits, mortgage, vehicle, equipment, and leasing loans. Nontraditional loans include loans from owners of the small businesses themselves and credit cards (business and personal). The report indicates that around 80% of all the small businesses participating in the survey used loans at the end of 1998. In addition, the majority (71%) of small businesses used nontraditional credits, and only 55% utilized traditional loans. The single largest source of credit was from banks; 38% of the surveyed businesses used banks. In contrast, owners' loans and finance companies' loans were 14.2% and 13.3% of all loans received by small businesses, respectively. The study also shows that the smallest firms (1-4 employees) do not usually borrow from commercial banks (only 17% to 31 % of these small firms borrowed from banks) whereas 53-77% of larger small firms used credit offered by commercial banks.

In terms of total debt outstanding as of the end of 1998, lines of credit and mortgage loans were the two most important types of loans used by small businesses. Mortgage loans, lines of credit, owner's loans, equipment and vehicle loans accounted for 31%, 30%, 8%, and 5%, respectively of total debt outstanding.

Small businesses are not heavy users of loans. Only 15% had more than two loans outstanding, 25% had only one loan, and about 47% of small firm had no loans outstanding. However, the portion of small businesses using credit jumps with the increase of firm size. In addition, smaller firms increasingly use nontraditional types of credit such as owners' loans, personal credit cards, and sometimes home equity lines for business purposes. Minority-owned firms are also less likely to use credit than non-minority owned firms.

Bitler, Robb and Wolken (2001) compared the use of credit by small businesses over time by comparing the 1998 and 1993 Surveys of Small Business Finance. Over the 1993 and 1998 surveys, the percent of small businesses using vehicle loans, equipment and "other" loans decreased. The portion of small businesses utilizing capital leases remained the same while the portion of firms using credit lines and mortgages increased. Credit usage and availability depends on the firm's age; the portion of young firms (less than 5 years old) that receive credit lines, loans, or leases is smaller than the percentage of older firms. Along the same lines, Haynes, Ou, and Berney, using the 1993 NSSBF data, found that large banks are more likely to lend money to larger and older small businesses.

Reporting on the supply of credit to different categories of businesses most likely understates the needs of small businesses for credit. A significant number of small businesses that desire credit do not apply because they fear rejection. Cavaluzzo et al. (2001) found that almost half of all small businesses in the 1998 SSBF desired credit but half of these firms did not apply because they feared rejection. Of those that feared denial and did not apply, black females feared the most (86.3%) and only 45.7% of white males feared denial. Because of large-scale fear of rejection, patterns of lending do not necessarily indicate that credit needs of various types of small businesses are satisfied. While the SSBF data reveals

that larger, older, and non-minority firms are most likely to use credit, it is quite plausible that smaller, younger, and minority firms are not receiving the credit they need because of real and perceived obstacles in access to credit.

Credit Demand in Rural Markets

Just like assessing overall credit demand, documentation of credit demand in rural areas is sparse. The USDA study's *Credit in Rural America* examines access for credit in rural areas of the U.S. Firstly, the report indicates that data collection is fraught with difficulties. In particular, it states that researchers usually must rely on limited survey data that usually shows that borrowers in rural areas are satisfied with their credit or obtaining loans is not a priority for them. While the report suggests that financial institutions provide necessary loans for rural communities, the report documents differences between operations of banks in urban and rural areas and emphasizes lack of competition in rural markets. This leads to unmet needs for credit in some communities. The study also reveals that while farm sectors and housing are well served, credit needs for rural development projects and non-farm businesses need additional attention.

The 1998 Mt. Auburn Associates report, *Capital and Credit Needs in the Appalachian Region*, conducted for the Appalachian Research Commission is one of the few attempts to comprehensively measure credit needs in a predominantly rural region. Mt. Auburn Associates measured and assessed demand for small business credit through a series of telephone interviews of 200 small businesses with more than 5 employees located in Appalachia. Overall, for the surveyed businesses, the types of financing most frequently sought were revolving lines of credit (sought by 36 percent of the applicants), equipment loans (32 percent), equipment leases (25 percent), and fixed rate mortgages (25 percent). Medium-term working capital and short-term working capital was sought by 18 and 16 percent of respondents, respectively. The most frequently sought loan size amount was for \$10,000 to \$49,000, generally for equipment loans and leases, working capital loans, and revolving credit lines. Larger amounts of \$100,000 to \$499,000 were generally used for commercial mortgages, working capital and revolving credit lines. Mt. Auburn found that

survey respondents from non-metropolitan counties were less likely to seek financing for their business than respondents from metropolitan counties. While smaller and larger businesses demanded similar types of credit and capital, twice as many smaller firms under 5 employees (18 percent as opposed to 8 percent) anticipated having difficulties obtaining financing over the next two or three years.

Implications

Consolidation presents contradictory influences on small business lending. On the one hand, larger banks, through the use of credit scoring, have increased lending to small businesses. On the other hand, the literature suggests that in certain economic and institutional circumstances, consolidation will decrease small business lending, particularly when acquiring bank holding companies merge separate bank charters. Banks in concentrated markets appear more likely to discriminate, surprisingly in the provision of transactional lending. Branch presence is important for reaching low- and moderate-income communities; when mergers result in branch closures in low- and moderate-income or minority communities, the result is likely to be less small business lending.

We will further investigate the impacts of consolidation and the lending patterns of large and small banks in Appalachia. The statistical analysis in the next chapter will attempt to shed light on how responsive small and large banks are to credit needs of the smallest businesses, the influence of bank consolidation and demographic characteristics on small business lending, and the role of bank branches on small business lending.