# INTRODUCTION

Since the 1980s, the financial services industry has undergone substantial changes due to legislation and regulation, massive consolidation, and the introduction of new products, services, and technological advances. These changes have increased competition in the industry, fueling concerns of whether smaller commercial banks (banks with less than $500 million in total assets) can find readily available, competitively priced funding to adequately finance loan demand for local small businesses, individuals, and development. In addition, evolving agricultural and rural economies have changed the demand for loans and services offered by small community financial institutions.

The recently enacted financial modernization legislation (the Gramm-Leach-Bliley Act of 1999--GLB) expanded the role of the Federal Home Loan Bank (FHLB) System to include funding local economic development by small commercial banks, in an attempt to keep them competitive. GLB changes the basis for FHLB membership, augments the purposes of advances, and expands the types of collateral that small banks can pledge against advances. These changes have the potential to increase membership substantially, eliciting interest in research on the FHLB System and its member financial institutions.

This research evaluates the impact of the FHLBs on local borrowers, community banks, and local markets, beginning in 1991, when commercial banks became eligible for membership in the FHLB System, and ending in the 1999. Specifically, three issues will be addressed:

1. the characteristics of commercial banks joining the FHLB System and the types of member banks using FHLB advances,
2. the influence of FHLB membership and the use of System funds on the financial performance and behavior of member banks, and
3. the impact of participation in the FHLB program on the competitiveness of local banking markets.

Results may help determine the effectiveness and appropriateness of policies directed toward local financial institutions and areas. The following sections describe the local banking environment, the agricultural industry, and the rural economy during the research period. The conditions of these areas influence the demand for and supply of loans and other financial services, and affect bank performance and market structure in local banking markets. The plan of the dissertation and description of the subsequent chapters follow.

**The Economic Environment of the 1990s**

The 1990s saw generally favorable economic conditions. Initially, the economy faced the 1990-91 recession and the subsequent credit crunch, where demand for loans fell and lenders were more cautious in supplying loans in an attempt to improve credit quality (Spong and Sullivan, 1999). For the remainder of the decade, the economy expanded with moderate overall real economic growth, relatively low inflation and low unemployment, even during the international economic and financial crisis of 1997 to 1999, which tripled the trade deficit. Profits remained strong, interest rates were low and stable, productivity and investment increased, real wages rose, stock market returns increased, and domestic consumer spending grew.

Due to the favorable interest rate environment and strong consumer confidence and employment, the housing and lending markets had record-setting years during the late 1990s. Speculators suggest that government-sponsored enterprises (GSEs), such as Fannie Mae, Freddie Mac, and the FHLB System, contributed to extensive credit extended during this period, leading to increases in leveraged credit, lending excess, and over-investment (Noland, 2000). The Federal Reserve began raising short-term interest rates beginning in June 1999 and continuing into 2000, to slow a quickly growing economy and avert inflation (AO).

<u>The Local Banking Environment</u>

Following the literature, local banking markets are delineated as rural counties or metropolitan statistical areas (MSAs). Rural counties primarily contain smaller (financial) markets, house smaller-sized banks, are more concentrated, and are less competitive since fewer banks serve them. These areas are economically homogeneous so local banks cannot easily diversify away the risks generated by their loan portfolios. On average, small banks hold more equity capital and liquid assets than do larger banks (Collender and Shaffer, 2000). Banks located in MSAs serve geographically larger markets so their portfolios are more diversified. Existing equity levels can support higher loan-to-asset and asset-to-capital ratios, so metro bank capital becomes more efficient.

Historically, small borrowers have relied on local banks for credit and small banks have lent larger portions of total assets to small businesses. Commercial banks continue to be the largest single class of lenders serving agriculture and small business, indicating that local economies depend on community financial institutions to fund investment opportunities. Until recently, geographic limits have protected small banks in local markets from direct competition. In the midst of massive consolidation and increased competition, it remains a concern whether small banks , such as those located in rural areas, will be able to remain competitive and continue to serve their communities.

Smaller financial markets, such as rural counties, experience differences in terms associated with, rates charged on, and the availability of credit, compared to urban areas. A lack of or reduction in credit availability can adversely affect regional development and growth (Porteous, 1995; MacDonald, 1996; Jayaratne and Strahan, 1996). McKinnon (1973) and Shaw (1973) illustrated how poorly functioning financial markets may lead to damaging economic development due to the misallocation of capital resources. They propose “deepening finance” by increasing borrower and commercial bank access to credit markets and reducing differences in financial institutions that divide the markets into segmented pieces. Collender (1998) also suggests that rural credit market imperfections should be corrected by increasing liquidity to all lenders and reducing market segmentation, which increases diversification, without the use of subsidies, to avoid additional market distortions.

## The Agricultural Industry

During the 1990s, the farm sector was relatively strong. Farm balance sheets were healthy, with good equity positions and declining farm debt-to-equity and debt-to-asset ratios, where farmland made up ¾ of the asset base of the farm sector (AO). Despite periods of low commodity prices, farm income was maintained at and above average levels for the entire decade due to increased farm aid from the government[1] and increased sources of off-farm income. Average farm operator household income was 17 percent higher than the U.S. household average during the 1990s (Hoppe, 2001). The government contributed record government cash infusions in 1998

[1] The Federal government has played a significant role in maintaining farm incomes during problematic periods.

and 1999 to stabilize and support farm income. By 1999, government payments made up 12 percent of cash receipts and 39 percent of net cash income (AO). In addition, 90 percent of total farm household income in 1999, on average, came from off-farm employment, signifying that farmers do not rely entirely on farms for their living (Spong and Sullivan, 1999).

Continued interest rate stability and favorable farm income conditions encouraged farm investment by reducing the risk that capital costs would exceed future expected returns, so farm credit use rose, with the majority of the increase occurring in 1997 and 1998. For most of the 1990s, demand for agricultural non-real estate loans was stronger than the demand for real estate loans, indicating increased borrowing for farm inputs, equipment, and machinery to expand operations, update capital, and purchase more farm land (AO). Consequently, agricultural productivity increased and outpaced the demand for food, thereby releasing labor and capital to other sectors of the rural economy.

*Consolidation and Industrialization of Agriculture*

Since the mid-1980s, extensive consolidation and industrialization within the domestic food and agricultural industries have resulted in massive structural changes, including a “leaner,” geographically concentrated industry, and agriculture’s lessening impact on many rural communities. A new wave of consolidation during the late 1990s occurred when low farm prices and lower expected future government support payments contributed to voluntary exits from agricultural production. Mergers resulted in fewer, larger firm sizes with specialized production methods to increase output and lower production costs. The move toward the use of contractual production methods reduced reliance on open spot markets by binding the production, processing, and distribution stages to ensure the timely delivery of lower cost, quality products while lowering transaction costs (Drabenstott, 1999).

## The Rural Economy

Structural changes occurring within the agricultural sector reduced farming’s relative importance as a source of jobs and income within rural areas. Fewer farms and the vertical coordination of farming operations concentrated production in fewer places and diminished the link between agriculture and local suppliers. Realized profits were not retained in the local area, and farming-dependent counties, defined to be those counties deriving at least 20 percent of income from farming, were dramatically reduced in number and became highly concentrated in the Heartland (Drabenstott, 1999).

*Rural Population Growth and Rural Deposits*

During the economic expansion of the 1990s, the non-agricultural economy in rural America grew steadily and outpaced the growth in agriculture, since the demand for food increases less than the demand for other goods when income rises. On average, rural populations grew 10 percent during the 1990s, but this growth was highly uneven across rural counties (Henry and Drabenstott, 1996). While some counties lost population, others grew by more than one-third (McGranahan, 1999).

Rural areas with above average population, income, and employment growth bordered expanding urban areas, while more remote counties found their share of population declining (McGranahan, 1999). This spillover of urban economic activity, coupled with the clustering of similar firms in local industries, contributed significantly to solid job growth in growing rural areas (Henry and Drabenstott, 1996). Some rural rates of employment growth exceeded those found in their urban neighbors (Drabenstott and Meeker, 1997). Additionally, demand for non-agricultural, development-related loans, such as residential, commercial, and industrial development loans, and demand for the use of amenity-rich rural land for homes and recreational purposes have been on the rise (Westenbarger and Barnard, 1996), contributing to the growth in agricultural land values (Smith, 1997).

While rural areas have been growing, on average, rural populations have been aging due to the out-migration of young adults, aging-in-place, and the in-migration of retirees from urban areas (Rogers, 1999), potentially depleting the total rural deposit base. Young adults, the more educated, and the more skilled, are more likely to migrate out of rural areas to seek greater opportunities offered in urban areas (Miller, 1994), taking their deposits with them. Deposits can also leave local communities when beneficiaries, many of whom do not live in rural areas, settle the estates of rural residents. The competition offered by mutual funds and other savings alternatives further decreases local deposit bases. Finally, mergers, acquisitions, and the general consolidation of the banking industry result in a loss of deposits to the local community if deposits are used to fund urban investments that are perceived to generate higher expected returns and/or are associated with lower risk (Drabenstott and Meeker, 1997).

**The Effectiveness of the FHLB System as a Government-Sponsored Enterprise**

Concerns regarding the performance of local credit markets has led to extensive federal intervention through direct and guaranteed loans or government-sponsored enterprises (GSEs)[2]. To date, study results have shown government assistance to be costly. Gale (1991) finds federal credit programs rarely to be cost-effective. Jensen (2000) uses supply and demand and options models to show that deadweight losses and market distortions occur due to the GSE status of the Farm Credit System (FCS), since the default risk premium on interest rates is transferred from agricultural borrowers to taxpayers. The FCS lenders are granted exclusive territories, preventing active competition among them. Farmer Mac has not effectively entered agricultural real estate markets and it remains unclear whether additional federal activity will positively affect market performance within highly concentrated banking markets, such as those found in rural areas (Collender and Koenig, 1998).

The FHLBs are GSEs created to improve home mortgage credit availability. The financial modernization legislation, GLB, increased small commercial bank access to FHLB membership and funding by easing membership eligibility requirements, expanding the FHLB mission beyond mortgage credit to include small business, agricultural, and rural and community development lending, and extending the types of acceptable collateral that can be held against advances, for small banks. FHLB membership is now possible, and may become a more attractive funding source, for many financial institutions. Therefore, it is important to examine the effect the FHLB System has had on its members, on local borrowers and depositors, and on local banking markets. This research provides the first known analysis conducted in this area, and addresses some of the major issues and concerns associated with bank participation in the System.

Chapter 1 provides a general description of the operations, composition, and evolution of the FHLB System as a GSE, the changing regulatory regimes since the System's inception, the relevant current financial modernization legislation provisions, and the potential effects of GLB on commercial banking in local financial markets. Chapter 2 describes the commercial bank's

[2] GSEs are chartered by the federal government to provide credit to specific sectors of the economy in exchange for special benefits, such as special tax considerations.

problem and presents a theoretical framework using a mean-variance analysis framework to show how optimization may induce a bank to acquire FHLB membership and use System advances. To determine whether the relatively poorer performing or riskier banks are participating in the FHLB System program, the decisions to join and use System funds are regressed against bank- and market-specific characteristics.

Chapter 3 evaluates the performance of FHLB member banks before and after joining and using System funds, focusing on changes in profitability, loan portfolio composition, lending quality and quantity, and other risk measures. The market-level analysis in Chapter 4 assesses the effect of the System on local market structure by evaluating the competitiveness of local banking markets with significant portions of deposits controlled by member banks and by members that use FHLB advances. A summary concludes the research study, providing implications for the future of banking, and suggesting future avenues of research.