

Impact of Stagnant or Declining Population Growth, Changing Customer Preferences and Increased Banking Regulations on Agricultural Banks Located in Rural Counties

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Introduction

Imagine a local community, or even county, without a full-service bank or even a bank branch. Although such a situation might be difficult for many rural residents to imagine, it is a distinct possibility. In fact, that possibility has already become a reality in some counties in rural America. Approximately forty percent of low-population, completely rural counties in the United States do not have a bank branch located in the county (Ellinger, 2012).

To illustrate the situation that currently exists in many rural counties in the U.S., nearly two-thirds have lost population since 2010. The total number of people leaving those counties totaled nearly 400,000. Several factors have contributed to the population decline, including falling birth rates, an aging population and a declining manufacturing base (Cromartie, 2014). Although there are pockets in the Great Plains that have experienced an increase in population as a result of energy exploration and extraction (i.e., western North Dakota), those areas are not wide spread enough to reverse the overall trend (Anderlik and Cofer, 2014).

In addition to the population decline, social changes are occurring in the country that have resulted in an increasing number of bank products and services being preferred, and even demanded, to be available via mobile devices or online. The implication of these social changes are an increasing number of transactions have occurred, and will likely occur in the future, outside a brick and mortar bank facility. The result is the economic reality that keeping a bank,

or bank branch, open in a rural county with a stagnant or declining population becomes increasingly difficult to justify (Barnard and Yeager, 2013).

Furthermore, in addition to the demographic and social changes that are occurring in the country, the increased regulatory burden placed on commercial banks resulting from recently enacted legislation will increase operating costs (Dodd-Frank Progress Report). These additional costs will be particularly burdensome for smaller banks that do not have increasing deposit volume over which to spread those additional fixed costs.

A 2014 study found banks headquartered in depopulating counties tend to focus more on agricultural lending than community banks headquartered elsewhere (Anderlik and Cofer, 2014). So, the possibility of fewer agricultural banks in rural counties with a declining population should be examined, since it could impact not only credit availability in general, but also have a direct effect on credit availability for agricultural producers and agribusinesses.

The result could be a change in the competitive environment for not only agricultural producers, but also for the lending institutions that remain. The absence of a competitor in a local market negates the need to maintain a facility in that community, which can enable the remaining providers of loan funds to more fully utilize alternative delivery methods to be more cost-effective and timely.

This study is used to determine the number of agricultural banks in rural counties with a declining or stagnant population that are located in the top 20 agricultural producing states. The number of agricultural banks are sorted into five size categories as measured by total assets. The agricultural banks with less than \$250 million in total assets are then analyzed, since they will be most vulnerable to the adverse effects resulting from depopulation and changing consumer

preferences due to their limited size and growth opportunities. Finally, the likely impact of increased regulatory requirements on the costs and profitability of agricultural banks less than \$250 million in total assets will be projected.

Background

Historically, many of the depository and lending needs in rural communities have been satisfied by locally-owned, full-service community banks or savings institutions, a branch of a larger bank headquartered in an urban area, or both. However, a brick and mortar facility that is full-service brings with it fixed costs (i.e., depreciation on buildings and equipment, salaries, etc.) that need to be spread over a large volume of business to be cost-effective and profitable.

Three overarching factors will likely determine the presence of a bank or bank branch facility being located in many rural counties in the U.S.; depopulation, changing customer preferences and increased regulatory costs. Each of these factors is discussed in the following sections.

Depopulation

The issue of rural depopulation and the implications on delivering financial services was addressed in detail in a 2004 article published in the *FDIC Banking Review* (Walser and Anderlik, 2004). Although the implications discussed in that article are aimed primarily at the Great Plains states, due to a higher rate of depopulation in that region than in other regions of the country, the situation currently experienced in other rural counties throughout the United States is similar. A 2014 study came to the same conclusion as the 2004 article, "...despite the adverse effects of depopulation, rural community banks have tended to perform well, but achieving growth remains a challenge." (Anderlik and Cofer, 2014).

In the 2004 article, one of the implications of depopulation was the need for increased use of the Internet in rural America to deliver bank products and services (Walser and Anderlik, 2004). For that implication to become a reality, the adoption of computers and the use of the Internet in rural areas needed to increase over time, which has been the case.

Increased computer adoption and Internet use has not only increased across the U.S. in general; but also in rural areas of the Corn Belt, particularly by commercial farmers. A 2003 survey of Ohio farmers with gross sales greater than \$40,000 found computer adoption and Internet use had increased among all farmers surveyed, with over 44 percent of those farmers reporting they used a computer for some aspect of their businesses, which was an increase from 32 percent in 1991. For farmers with gross sales \$250,000 to \$499,999 and over \$500,000, computer usage percentages were 56 and 72 percent, respectively. Of those farmers who used the computer in their businesses, 29 percent used online banking or bill paying. Hence, as early as 2003, nearly 3 out of 10 farmers were already using online banking (Batte, 2004).

Changing Customer Preferences

Not only is it more cost-effective to satisfy the financial needs of residents of rural counties by using technology, most younger customers prefer the use of technology. The financial needs of technology-oriented customers are usually satisfied by mobile or online banking and the need for a brick and mortar facility is almost nonexistent. Although some of the more mature and affluent rural residents may desire a community bank or the branch of a larger bank be located in the county, the number is decreasing and the trend is definitely toward fewer brick and mortar facilities.

The trend toward greater computer adoption and Internet use over time continues as can be seen from the results of a survey conducted by the U. S. Department of Commerce. The survey, conducted in October 2010, found 77 percent of U.S. households had a computer and more than 68 percent of households used broadband Internet access service, up from 64 percent the previous year. Approximately 80 percent of households had at least one Internet user, either at home or elsewhere (Exploring. 2011).

The impact of technology on delivering financial products and services was found in a 2012 survey conducted by the Board of Governors of the Federal Reserve. In that survey, it was found that many younger, technology-oriented residents can satisfy their need for financial services through online or mobile banking technology. Ninety-five percent of individuals age 18 to 24 have a mobile phone and forty-nine percent have a smartphone. Nearly 21 percent of mobile phone owners used mobile banking during the past 12 months, an additional 11 percent report they will definitely or probably use it in the next 12 months and an additional 17 percent reported they will use it at some point in the future. So, up to 42 percent of mobile users will use mobile banking at some point in the near future (Gross, et.al, 2012).

Although the 2012 survey found mobile banking to be more popular among younger customers, online banking was used more by older customers. Individuals between ages 18 and 29 accounted for approximately 44 percent of mobile banking users, while individuals 60 and over account for only 6 percent of all mobile banking users. However, 30 percent of customers who use online banking were between ages 30 and 44, while 20 percent were 60 and older (Gross, et.al, 2012).

Increased Regulatory Costs

The impact of increased operating costs associated with increased regulatory requirements was discussed in a recent article in the Wall Street Journal, in which the impact of increased costs associated with additional internal personnel and outside audit and consulting work would result in increased operating costs. The adverse impact was particularly burdensome for small banks that are already dealing with a low interest-rate environment that tends to squeeze the net interest margins for many of those banks (For Sale: “Too Small to Succeed” Banks, 2014).

A paper published in May of 2013 by officials at the Federal Reserve Bank of Minneapolis projected that 124, or 6.5 percent, of the 1,921 community banks with total assets less than \$100 million would become unprofitable if an additional full-time equivalent was added to their staff at an assumed compensation rate of \$70,000. Thirty-seven, or 1.9 percent, of the 1,970 community banks between \$100 and \$250 million in total assets would become unprofitable when two FTEs were added at the same compensation rate. The number of community banks becoming unprofitable due to the addition of FTEs to respond to increased regulatory requirements for the \$250-500 million and the \$500 million - \$1 billion size categories were 7 and 1, respectively (Feldman, et.al., 2013).

The Challenge for Agricultural Banks Located in Rural Counties

Although the younger segment of the population desires mobile or online banking services, a segment of the market in rural counties prefers a bank or bank branch be located in the county to provide financial products and services. They would desire that financial institution not only accept deposits, but also perform important roles as providers of relationship-

based and information-intensive banking services. There are two primary consumers of such products and services; small businesses, including some family farms, and depositors of low to moderate wealth (Keeton, et al. 2003).

The owners of many small businesses, including some agricultural businesses, want loan officers to take into account a wide variety of factors when considering loan requests, including the character of the borrower and local market conditions. This is in contrast to large, money center banks that tend to rely more on credit scoring models when considering loan requests to smaller businesses. Furthermore, loans to small businesses often require close, long-term relationships with the borrower, which requires cost increasing time and effort (Hoeing, 2003).

Depositors of low and medium wealth may also desire a relationship with a financial institution. These depositors may desire individual customer service for specialized financial products. However, specialized legal, investment, tax, trust or other financial services needed by those customers usually requires expertise in areas such as estate planning, tax management, investment advisory services, etc. Since staffing costs typically represent 75-80 percent of a trust department's operating budget (Larrabee, 2006), the cost of providing such services may be beyond what can profitably be offered by some locally-owned, community banks. In fact, some of those potential trust customers may already be using the services at specialized financial services firms or from larger commercial banks headquartered in urban areas, depending on the size of the locally-owned community bank.

Consequently, the delivery means for financial products and services to rural residents are in a state of transition. The major challenge for not only agricultural banks located in rural counties but for all providers of financial products and services is how to profitably deliver

financial products and services in a manner that satisfies the financial needs of both segments of the market.

Data

This study uses Federal Deposit Insurance Call Report data for agricultural banks located in the top twenty agricultural producing states in the United States. The top twenty agricultural producing states are determined by ranking the states in accordance with the value added to the U.S. economy by the agricultural sector via the production of goods and services. Data are reported by the Economic Research Service of the United States Department of Agriculture.

With the recent release of the 2010 U.S. Census county data, the counties located in each state with a stagnant or declining population can be determined. The number and size of the agricultural banks located in those counties can then be determined using the FDIC Call Report Data. In addition, the size of those agricultural banks is reported in terms of total assets. In order to provide structure and consistency in the discussion, the definitions used for agricultural production, rural counties and agricultural banks are provided.

Value of Agricultural Sector Production

The value added to the U.S. economy by the agricultural sector via the production of goods and services is used to determine the top twenty agricultural producing states. The number includes cash receipts, home consumption and inventory adjustments for both crops and livestock. In addition, the measure includes the gross imputed rental value of farm dwellings, machine hire and custom work and other farm income. The measure is available in nominal dollars for each state. Data used in this study is for 2012 (Value Added to the U.S. Economy, 2014).

Rural County Definition

Any classification system used to define rural, rural/mixed and urban counties has limitations, since many counties have a mix of both urban and rural areas (Cromartie and Bucholtz, 2008; Isserman, 2005; Waldorf, 2007). However, the system that appears to be most applicable for evaluating rural counties that depend primarily on agricultural production was used in a 2013 study conducted by Ayres, Waldorf and McKendree. The criteria are provided in Table 1.

Table 1. Criteria for Classifying Counties as Rural, Rural/Mixed and Urban.

<u>Measure</u>	<u>Rural</u>	<u>Rural/Mixed</u>	<u>Urban</u>
Population	Less than 40,000	40,000 - 100,000	Over 100,000
Density (people per sq. mi.)	Less than 100	100 - 200	Over 200
Population of largest city	Less than 10,000	10,000-30,000	Over 30,000

Source: Ayres, J., B. Waldorf, and M. McKendree. 2013. Defining Rural Indiana – First Step, Center for Rural Development. Purdue University. EC-766-W.

The analysis that follows will use the criteria presented above to determine rural counties used in the analysis.

In addition, many rural countries have experienced either a stagnant or declining population growth over the past decade. That trend has had, and continues to have, an impact on the economic feasibility of opening, or even to continue to operate, a brick and mortar facility in that county. The U.S. Census county data for 2000 and 2010 will be used to determine the

population growth rate for each rural county (United States Census Data, 2000 and 2010). Those counties with a declining or zero population growth rate are used in the study.

Agricultural Bank Definition

According to the Federal Deposit Insurance Corporation, an agricultural bank is defined as a bank whose agricultural production loans plus real estate loans secured by farmland exceed 25 percent of its total loans and leases (FDIC, Glossary). From 12/31/2002 through 12/31/2012, the number of agricultural banks in the U.S. declined by 15.7 percent; from 1,823 to 1,515 (FDIC Call Report Data, various dates).

Furthermore, the majority of agricultural banks tend to be small in size. Of the top 100 agricultural banks, by concentration of their loan portfolios, only 14 had total loan volumes greater than \$100 million. Agricultural loan concentrations for those top 100 agricultural banks ranged from 75.97 percent to 96.92 (American Bankers Association, 2013). Over the next decade, the number of agricultural banks located in rural counties is likely to continue to decline. That will particularly be the case in rural counties with stagnant or declining population growth.

At the same time, large commercial banks have a substantial share of the agricultural loans made by banks. Of the 100 largest U.S. banks in 2013, only one satisfied the definition of an agricultural bank. However, those 100 largest commercial banks held 26 percent of the banking industry's agricultural loans (FDIC Quarterly, Record Farmland Prices).

Results

The top twenty agricultural states in value added to the U. S. economy are listed in Table 2, along with the number of agricultural banks located in those respective states, as of the March 31, 2014 FDIC call report. Of the 1505 agricultural banks in the U. S. on that date, 1,407 (93.5 percent) are located in those twenty states. The top five states in terms of number of agricultural banks in decreasing order are Iowa, Illinois, Nebraska, Kansas and Minnesota. There are no agricultural banks in North Carolina and fewer than 10 in California, Florida, Michigan and Washington.

The number of agricultural banks located in counties with decreasing population from 2000 to 2010 is 731, which is 52 percent of the agricultural banks in those twenty states. Although there is concern about the long-term financial viability of all banks located in counties with decreasing population, those that are particularly vulnerable are the smaller banks. As reported in Table 3, 648 (88.6 percent) of the 731 agricultural banks located in counties with declining population are smaller than \$250 million in total assets. Of the remaining 83 (11.4 percent) that are larger than \$250 million in total assets, fourteen are larger than \$500 million and 5 of those are larger than \$1 billion in total assets (Table 3).

Of the 648 agricultural banks located in counties with decreasing population and less than \$250 million in total assets, 430 (66.4 percent) are less than \$100 million and 218 (33.6 percent) are between \$100 and \$250 million in total assets. Also, of the 648 banks with less than \$250 million in total assets, 432 (66.7 percent) or two-thirds are located in five states: Iowa, Illinois, Kansas, Minnesota and Nebraska (Table 3).

Table 2. Value Added to the U. S. Economy by the Agricultural Sector via the Production of Goods and Services in 2012 for the Top Twenty Agricultural States and Number of Agricultural Banks, as of March 31, 2014

<u>State</u>	<u>Agricultural Value Added</u>	<u>Number of Agricultural Banks</u>
California	\$ 47,917,703	6
Iowa	33,404,346	237
Texas	27,633,211	92
Nebraska	25,582,008	166
Minnesota	23,770,657	142
Illinois	19,949,935	172
Kansas	18,653,909	162
North Carolina	13,494,517	0
Wisconsin	13,474,088	49
Indiana	13,015,150	22
North Dakota	11,708,716	66
Missouri	11,543,653	88
Georgia	11,528,008	19
South Dakota	11,265,874	58
Ohio	11,210,625	14
Washington	10,363,320	5
Arkansas	10,306,982	23
Michigan	9,327,393	9
Florida	9,084,148	5
Oklahoma	<u>8,506,253</u>	<u>72</u>
Total	\$341,740,496	1,407

Sources: Economic Research Service of the United States Department of Agriculture, 2014 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

Table 3. Number of Agricultural Banks Headquartered in Counties with Declining Population from 2000 to 2010, by Total Asset Category, as of March 31, 2014

<u>State</u>	<u>Total</u>	<u><100M</u>	<u>100-250M</u>	<u>250-500M</u>	<u>500M-1B</u>	<u>>1B</u>
California	0	na	na	na	na	na
Iowa	122	56	49	15	1	1
Texas	41	27	8	4	0	2
Nebraska	99	63	25	8	2	1
Minnesota	67	49	13	3	2	0
Illinois	76	41	26	9	0	0
Kansas	122	78	32	11	1	0
North Carolina	0	na	na	na	na	na
Wisconsin	7	3	3	0	1	0
Indiana	8	1	3	4	0	0
North Dakota	52	33	14	4	1	0
Missouri	36	18	15	3	0	0
Georgia	9	5	3	1	0	0
South Dakota	36	20	12	2	1	1
Ohio	3	3	0	0	0	0
Washington	0	na	na	na	na	na
Arkansas	13	3	8	2	0	0
Michigan	4	2	1	1	0	0
Florida	0	na	na	na	na	na
Oklahoma	<u>36</u>	<u>28</u>	<u>6</u>	<u>2</u>	<u>0</u>	<u>0</u>
Total	731	430	218	69	9	5

Sources: U.S. Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

The average size in terms of total assets for the 648 banks is \$85.9 million, ranging from \$63.7 million in Oklahoma to \$134.3 million in Arkansas. As can be seen from Table 4, average total assets for banks less than \$100 million is only \$52.6 million, with average size per state ranging from \$40.6 million in Minnesota to \$74.9 million in Wisconsin. In fact, the average size is below \$50 million in five states; Kansas, Minnesota, Nebraska, South Dakota and Texas. The average size for the \$100-250 million size category is \$151.4 million, ranging from \$111 million in Georgia to \$169.1 million in Illinois. Note that the \$215.2 million bank in Michigan is the only bank in that size category for the state of Michigan.

The remainder of this study will focus on agricultural banks smaller than \$250 million in total assets that are located in counties with declining populations. The long-term financial viability of those banks is a concern, since the probability of increasing the size of those banks without a merger or acquisition is less than for agricultural banks located in counties with increasing population. Furthermore, the relatively small size of those banks makes it difficult to benefit from economies of scale, increase lending to commercial farmers and ranchers due to relatively low legal lending limits and diversify their loan portfolios.

Impact of Additional Regulatory Costs

With declining population growth in many rural counties, the likelihood deposit volumes will increase is unlikely. In addition to their small size, declining population and changing customer desires, these banks also have to deal with the additional fixed costs associated with increased bank regulations. A recent study conducted by the Federal Reserve Bank of Minneapolis staff analyzed the impact on community banks of increased regulatory costs. They assumed the

Table 4. Average Total Assets of Agricultural Banks less than \$250 Million in Total Assets Headquartered in Counties with Declining Population from 2000 to 2010, by Total Asset Categories, as of March 31, 2014

<u>State</u>	<u>Total</u>	<u><100M</u>	<u>100-250M</u>
		<u>\$1,000</u>	
California	na	na	na
Iowa	\$103,985	\$60,405	\$153,791
Texas	72,509	49,680	149,557
Nebraska	77,944	48,945	151,022
Minnesota	67,496	40,644	168,705
Illinois	102,806	60,760	169,110
Kansas	77,821	48,186	150,058
North Carolina	na	na	na
Wisconsin	117,366	74,931	159,802
Indiana	111,163	59,646*	128,334
North Dakota	84,174	60,845	139,166
Missouri	95,879	59,722	139,268
Georgia	76,056	55,079	111,017
South Dakota	81,581	49,354	135,292
Ohio	74,457	74,457	na
Washington	na	na	na
Arkansas	134,322	61,102	161,780
Michigan	114,517	64,195	215,162*
Florida	na	na	na
Oklahoma	<u>63,681</u>	<u>50,673</u>	<u>124,387</u>
Total	\$85,874	\$52,634	\$151,439

* Denotes only one bank in the state in that size category

Sources: U.S. Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

additional costs would result in hiring additional staff in order to comply with increased regulations and additional audit and consulting services. Their approach required two additional inputs: the number and compensation rate of additional staff. They assumed the compensation costs for one additional FTE for rural banks would be \$70,000 and that would apply to all banks less than \$100 million in total assets. The added compensation is then subtracted from net income to determine the impact on each bank's profitability. For banks \$100-250 million in total assets, it was assumed two additional employees would be hired at a total compensation of \$140,000 (Feldman and et.al, 2013).

They applied two tests to evaluate the impact of additional costs due to increased regulation. The first test was to subtract the additional costs from the net income and recalculated the return on assets (ROA). They then counted the number of banks that fell below the "minimum required ROA" of the Minneapolis Federal Reserve Bank of 40 basis points. The number of banks below 40 bp before and after applying the additional regulatory costs were counted and compared. The second test was to again apply the additional costs of \$70,000 per FTE and then count the number of banks that shifted from profitable to unprofitable to determine the impact of the additional compensation costs (Feldman, et al. 2013).

The same approach is used in this study for agricultural banks using 2013 income data from the December 31, 2012 and 2013 call reports. In the current study, the number of banks less than \$250 million and below a ROA of 40 bp increased by 43, from 93 to 136 as a result of increased regulatory costs. That is a 46.2 percent increase. Most of the increase, 39 or 90.7 percent, are for banks with less than \$100 million in total assets. Only 4 of the additional banks

Table 5. Number of Agricultural Banks with ROA less than 40 Basis with and without the Additional Regulatory Costs for Banks Smaller than \$250 Million in Total Assets, by Total Asset Category, as of March 31, 2014.

<u>State</u>	<u>Total</u>		<u><100M</u>		<u>100-250M</u>	
	<u>Less than 40 BP</u> <u>w/o Reg.</u>	<u>w/Reg.</u>	<u>Less than 40 BP</u> <u>w/o Reg.</u>	<u>w/Reg.</u>	<u>Less than 40 BP</u> <u>w/o Reg.</u>	<u>w/Reg.</u>
California	na	na	na	na	na	na
Iowa	13	16	12	15	1	1
Texas	9	11	8	10	1	1
Nebraska	10	20	10	18	0	2
Minnesota	7	12	7	12	0	0
Illinois	10	13	9	12	1	1
Kansas	23	36	21	34	2	2
North Carolina	na	na	na	na	na	na
Wisconsin	0	0	0	0	0	0
Indiana	0	1	0	0	0	1
North Dakota	6	6	6	6	0	0
Missouri	1	3	1	3	0	0
Georgia	3	3	3	3	0	0
South Dakota	6	7	6	7	0	0
Ohio	0	0	0	0	na	na
Washington	na	na	na	na	na	na
Arkansas	0	0	0	0	0	0
Michigan	2	2	2	2	0	0
Florida	na	na	na	na	na	na
Oklahoma	<u>3</u>	<u>6</u>	<u>3</u>	<u>5</u>	<u>0</u>	<u>1</u>
Total	93	136	88	127	5	9

Sources: U.S. Census Bureau, County Data, 2000 and 2010 and Federal Deposit Insurance Corporation Call Report, March 31, 2014.

are in the \$100-250 million size category (Table 5). Also, 32, or 82 percent, of the additional banks whose ROA would fall below 40 bp are located in five states.

<u>State</u>	<u>Number of Banks</u>
Kansas	13
Nebraska	8
Minnesota	5
Illinois	3
Iowa	<u>3</u>
Total	32

Each of those states would experience 3 or more additional banks with an ROA below 40 bp.

As can be seen in Table 6, thirty (4.7 percent) of the 633 agricultural banks less than \$100 million in total assets who experienced positive earnings during 2013 without the added cost of increased regulation would experience negative earnings if earnings were reduced by \$70,000. Net income was reduced \$140,000 for banks \$100-250 million in total assets and none of the 217 banks who experienced positive earnings in 2013 became unprofitable due to the increase in compensation costs.

All thirty banks that became unprofitable due to increased regulatory costs are located in eight states, which are listed below.

<u>State</u>	<u>Number of Banks</u>
Kansas	11
Nebraska	7
Illinois	3
Iowa	2
Minnesota	2
Oklahoma	2
South Dakota	2
North Dakota	<u>1</u>
Total	30

All of the states are located in either the Great Plains or the Corn Belt, with only Illinois located east of the Mississippi River.

Table 6. Number of Unprofitable Agricultural Banks with and without the Additional Costs Resulting from Additional Regulatory Requirements for Banks Smaller than \$250 Million in Total Assets, by Total Asset Category, as of March 31, 2014

<u>State</u>	<u>Total Profitable</u>		<u><100M Profitable</u>		<u>100-250M Profitable</u>	
	<u>w/o Reg.</u>	<u>w/Reg.</u>	<u>w/o Reg.</u>	<u>w/Reg.</u>	<u>w/o Reg.</u>	<u>w/Reg.</u>
California	na	na	na	na	na	na
Iowa	103	101	54	52	49	49
Texas	32	32	25	25	7	7
Nebraska	86	79	61	54	25	25
Minnesota	60	58	47	45	13	13
Illinois	66	63	40	37	26	26
Kansas	107	96	75	64	32	32
North Carolina	na	na	na	na	na	na
Wisconsin	6	6	3	3	3	3
Indiana	4	4	1	1	3	3
North Dakota	47	46	33	32	14	14
Missouri	33	33	18	18	15	15
Georgia	7	7	4	4	3	3
South Dakota	32	30	20	18	12	12
Ohio	3	3	3	3	na	na
Washington	na	na	na	na	na	na
Arkansas	11	11	3	3	8	8
Michigan	3	3	2	2	1	1
Florida	na	na	na	na	na	na
Oklahoma	<u>33</u>	<u>31</u>	<u>27</u>	<u>25</u>	<u>6</u>	<u>6</u>
Total	633	603	416	386	217	217

Sources: Federal Deposit Insurance Corporation Call Report, December 31, 2013.
Impact of increased regulation on the agricultural banks in this study.

Implications for the Farm Credit System

An overriding implication for all financial institutions is consumers have computers and broadband Internet access and they desire to receive financial products and services via mobile devices and/or online. That was confirmed by the 2010 U. S. Department of Commerce survey that found 77 percent of U.S. households had a computer, more than 68 percent used broadband Internet access service and approximately 80 percent had at least one Internet user (Exploring. 2011). Furthermore, there is increasing reliance on mobile and online delivery means, particularly by younger customers, for financial products and services (Gross, et.al., 2012).

Consequently, the Farm Credit System must continually monitor the desires of its existing and potential customers as to how they wish to receive information, products and services. For smaller loans, this will likely rely heavily on electronic means, with much of the credit analysis performed through credit scoring and other streamlined analysis programs. Such an approach not only reduces the costs for the financial institution; but also, just as importantly, provides the almost immediate response desired by customers. That market change will likely remain whether or not an agricultural bank is located in a rural county.

A second implication relates to the need to locate a facility in rural counties with declining populations to serve borrowers with larger loans. The maximum loan size of agricultural banks with less than \$100 million in total assets, as determined by bank legal lending limits, excludes many agribusinesses and producers needing larger loans as customers. Hence, many of those borrowers are already customers of the Farm Credit System or larger commercial banks located in larger population centers. Also, the trend toward fewer and larger commercial agricultural businesses will likely result in fewer customers in that market segment over time.

Although customers with larger, more complex loans may wish to receive information, loan products and services through mobile devices and/or online, as well as have immediate access to loan officers, it appears they continue to want to have a relationship with a loan officer (Keeton, et.al. 2003). Moreover, the size and complexity of those loans will likely result in a desire on the part of the lending institution for personal interaction as well.

However, the meeting location can be at the agricultural business or in larger population centers, which will probably be the headquarters for larger commercial banks that hold 26 percent of the agricultural loans held by banks (FDIC Quarterly, Record Farmland Prices). Also, located in those larger population centers will probably be the implement dealers, central distribution facilities for input suppliers, medical facilities, shopping venues, etc. Hence, the Farm Credit System will likely not be at a comparative disadvantage by not having a facility in a rural community with a declining population, since the competition will probably not have a facility there either. However, borrowers will need to have immediate, as well as periodic, access to loan decision-makers. This access could be through a variety of electronic means, including websites and mobile devices, rather than in a facility located in a rural county.

The third implication for the Farm Credit System is there will likely be the potential to increase agricultural loan volume if at least some of the agricultural banks with ROA below 40 bp would cease to remain in business. However, the small size of those banks limits the potential amount of additional agricultural loan volume. Total agricultural loan volume for the 97 banks less than \$250 million in total assets, with ROA below 40 bp located in the five states with the greatest number of banks in that category (Kansas, Nebraska, Minnesota, Illinois and Iowa) would be \$847.9 million, with average loan volume per bank of only \$8.7 million.

Summary

Three overarching factors will likely determine the presence of a bank or bank branch facility in many rural counties in the U.S. Those factors are declining population, changing customer desires and increased regulatory costs. The ability of agricultural banks in rural counties with declining populations to address these concerns will determine which banks survive the challenges ahead. The 10 key findings from this study are listed below.

- Of the 1505 agricultural banks in the U.S. on March 31, 2014, 1407 (93.5 percent) are located in the top 20 agricultural producing states;
- Of the 1407 agricultural banks in the top 20 agricultural producing states, 731 (52 percent) are located in counties in which the population decreased from 2000 to 2010;
- Of those 731 agricultural banks in counties with declining population, 648 (88.6 percent) are smaller than \$250 million in total assets;
- Of the 648 agricultural banks less than \$250 million in total assets, 432 (66.7 percent) are located in five states: Illinois, Iowa, Kansas, Nebraska and Minnesota;
- The average size in terms of total assets for those 648 banks is \$85.9 million, ranging from \$63.7 million in Oklahoma to \$134.3 million in Arkansas;
- Average total assets for banks less than \$100 million is only \$52.6 million, with average size per state ranging from \$40.6 million in Minnesota to \$74.9 million in Wisconsin;
- Average size for banks less than \$100 million in total assets is below \$50 million in five states; Kansas, Minnesota, Nebraska, South Dakota and Texas;

- The number of banks that would have a ROA below 40bp in the less than \$250 million total assets category would increase from 93 to 136 due to increased regulatory costs, with 39 of the 43 additional banks in the less than \$100 million total asset category;
- Thirty-two of those 39 banks are located in five states: Illinois, Iowa, Kansas, Nebraska and Minnesota and
- Thirty (4.7 percent) of the 633 agricultural banks less than \$100 million in total assets, who experienced positive 2013 earnings would experience negative earnings if costs increased by \$70,000 to hire one additional compliance officer.

The likely decrease in the number of agricultural banks and reluctance of larger commercial banks to open a branch in rural counties with stagnant or declining population growth will provide opportunities for other lending institutions located in those, or adjacent, counties. The identification of such opportunities will enable the financial institutions that remain to better focus resources and project future lending opportunities.

However, the financial product and service needs of residents in those rural counties will likely be satisfied increasingly through electronic delivery means. The adoption of computers and the use of the internet and mobile devices such as smart phones will enable providers of financial products and services, to expand their customer base and deliver financial products and services to rural counties where locating a branch would not be feasible.

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