Community Banks and Core Deposits

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Abstract: How community banks respond to strategic challenges in attracting and retaining core deposits is of great interest to regulators, policy makers, and bankers themselves. Using the Conference of State Bank Supervisors' 2019 National Survey of Community Banks, we assess how over 500 community banks think about core deposits. We find that market competition is the most important impediment to attracting and retaining core deposits by a wide margin. Depopulation is a more important impediment in rural markets versus urban markets. Banks that are growing faster than average and those reporting capital constraints as an impediment to core deposit growth more frequently report the importance of core deposit growth over loan growth. Banks that report core deposit growth as the most important challenge are more likely to report pursuing a core deposit growth strategy. Banks that do not prioritize core deposit growth over loan growth are *less* likely to report competition as the most important impediment to attracting core deposits, while banks that do prioritize core deposit growth over loan growth are *more* likely to report capital as the most important impediment to attracting core deposits. These same banks are also more likely to report higher expected future profitability. Brokered deposits and Federal Home Loan Bank (FHLB) advances are the most frequently reported sources of wholesale funds, with larger banks more frequently reporting the use of wholesale funding. The use of wholesale funding shows no association with any of the reported impediments to attracting core deposits. Banks that rely on brokered funds and FHLB advances are more likely to support a core deposit growth strategy over loan growth in part because of concerns about liquidity risk.

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1. Introduction

Core deposits are the bedrock of community bank funding and a key source of their franchise value (see Diamond and Dybvig (1983), Fama (1985), Garber and Weisbrod (1990), Bernanke and Lown (1997), Cole (1998), Myers and Rajan (1998), Berlin and Mester (1999), Diamond and Rajan (2001), Kashyap, Rajan and Stein (2002), Berger and Bouwman (2006), Gatev, Schuermann and Strahan (2006), Gatev, Schuermann and Strahan (2007), Khwaja and Mian (2008), Strahan (2008) and Brunnermeier and Pederson (2009)). Yet despite uninterrupted real growth in the economy since the Great Recession and, at least up until 2016, a monetary policy that supported core deposit growth, many community banks are facing significant headwinds in attracting and maintaining these deposits.

Baer and Covas (2019) recently point out that uneven regional growth since the Great Recession continues to create challenges for community banks in many rural markets where depopulation chips away at core deposits. Moreover, although many community banks are able to respond to customer demand for mobile banking services, the banks that rely on third party services cannot respond as quickly to new opportunities as the largest banks with multimillion-dollar tech budgets.

And finally, recent changes in the Fed's monetary policy is another wild card. Quantitative easing created an environment where competition for core deposits was benign. But once quantitative tightening took off between 2016-2018 and drained excess reserves from the banking system, the largest banks began to compete for core deposits to replace lost excess reserves for their key liquidity ratio, the Liquidity Coverage Ratio. While this threat has diminished somewhat with the Fed's pivot in early 2019, uncertainty about future Fed policy may make banks more cautious if a weakening economy leads to lower rates that further squeeze net interest margins.

How community banks are responding to these strategic challenges in attracting and retaining core deposits is of great interest to regulators, policy makers, and bankers themselves. The Conference of Bank Supervisors 2019 National Survey of Community Banks ("Survey") provides a unique opportunity to delve into how over 500 community banks are thinking about core deposits. Community bankers responded to questions about impediments they face in attracting and retaining core deposits, how they tactically view the importance of deposit growth versus loan growth, the importance of various sources of wholesale funding, and how they view the importance of various risks to their business including liquidity risk. For those banks that provided FDIC certificate numbers, relevant call report data provide a further opportunity to integrate financial performance data into the analysis.

The important findings from the Survey are summarized here. First, regardless of the size of the bank or the market they operate in, market competition is the most important impediment to attracting and retaining core deposits by a wide margin. Depopulation, while ranking third, is more important impediment in rural markets versus urban markets. Second, banks that are growing faster than average and those reporting capital constraints as an impediment to core deposit growth more frequently report the importance of core deposit growth over loan growth. Third, bank responses about their strategy for core deposit growth is somewhat symmetrically distributed around the 45 percent that use a core deposit growth strategy around half the time. These responses are consistent with their assessment of the greatest challenge facing their business, e.g., banks that report core deposit growth as the most important challenge are more likely to report pursuing a core deposit growth strategy. Fourth, banks that do not prioritize core deposit growth over loan growth are *less* likely to report competition as the most important impediment to attracting core deposits, while banks that do prioritize core deposit growth over loan growth are *more* likely to report capital as the most important impediment to attracting core deposits. These same banks are also more likely to report higher expected future profitability. Fifth, brokered deposits and Federal Home Loan Bank (FHLB) advances are the most frequently reported sources of wholesale funds. Larger banks more frequently report the use of wholesale funding. And finally, the use of wholesale funding shows no association with any of the reported impediments to attracting core deposits. Banks that rely on brokered funds and FHLB advances are more likely to support a core deposit growth strategy over loan growth in part because of concerns about liquidity risk.

The remainder of our paper is structured as follows: Section 2 examines impediments to core deposit retention. Section 3 investigates whether banks prioritize core deposit growth or loan growth strategy. Section 4 explores factors influencing the core deposit growth strategy. Section 5 addresses the question whether wholesale funds are a source of growth or regulatory scrutiny. Section 6 is a multivariate analysis of core deposit growth versus loan growth, and Section 7 concludes.

Section 2. Core Deposit Retention Impediments

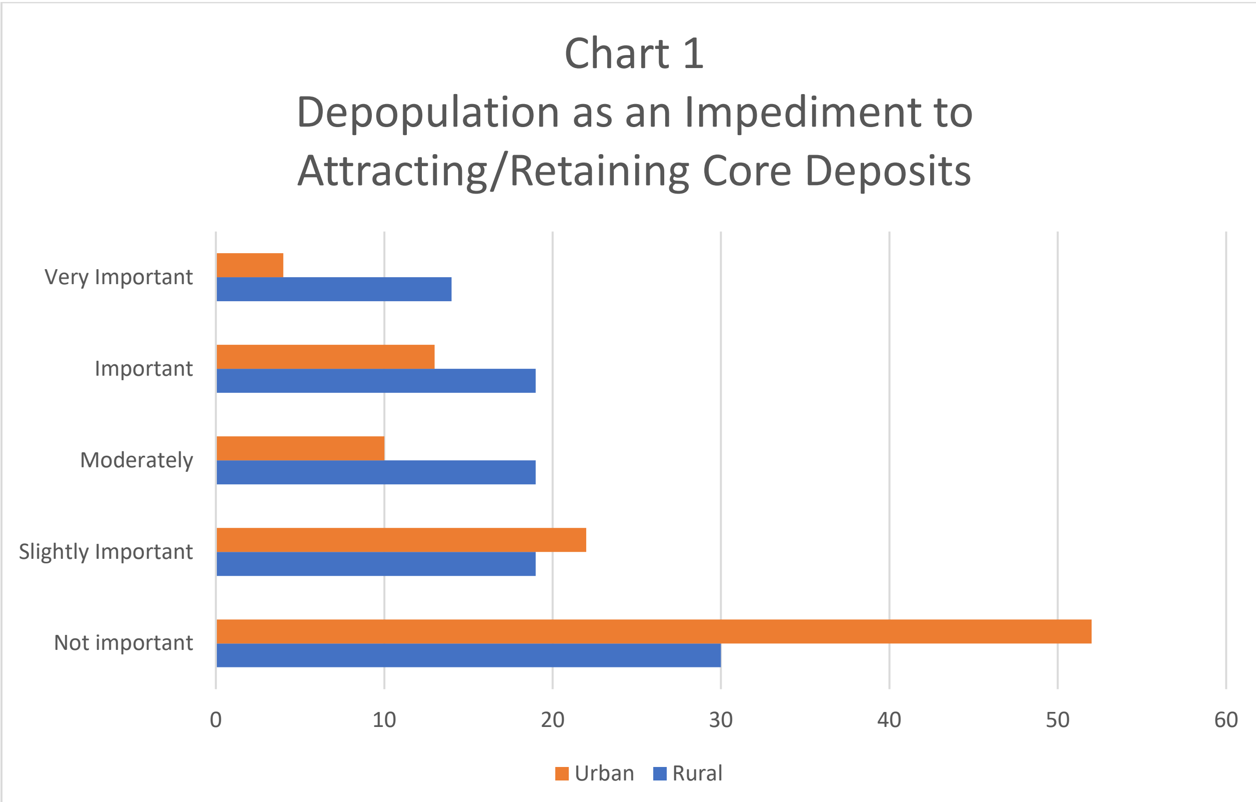
Of five possible impediments to attracting and retaining core deposits, Table 1 shows that *market competition* was rated “important” or “very important” by over 90 percent of the respondents, followed by *other market demographics* at 39 percent and *depopulation* at 30 percent.

Table 1: Impediments to attracting/retaining core deposits					
	Market Competition	Other market demographics	De-population	Capital Constraints	National Rate Cap
Not important	0%	13	33	48	48
Slightly	2	19	20	22	23
Moderately	6	29	17	18	16
Important	39	28	18	9	8
Very	53	11	12	4	5
Total	100%	100%	100%	100%	100%

The importance of *market competition* as a primary factor for retaining core deposits showed no variation by bank size, urban versus rural, or CSBS district (see Chart 1). This outcome may reflect the impact of online deposit competition from banks such as Ally Financial, Capital One, Discover, or Synchrony that can reach anyone with an Internet connection or money market funds.

Other market demographics likely includes the impact of dealing with a younger customer base ("the millennials") that is less tied to conventional banking and more to mobile banking. Unfortunately, there are no variables in the Survey to capture the profile of current bank customers other than geographic and rural/urban location—neither of which showed any association with this factor.

Although depopulation is not ranked highly overall as an impediment to retaining core deposits, the well-documented shifts of population from rural to urban locations should have an impact, and the Survey confirms this trend. Chart 1 shows that *depopulation* is cited more frequently as an “important” *or “*very Important” factor in attracting and retaining core deposits by banks in rural areas.



The Survey provides an opportunity to examine how balance sheet changes are related to the assessment of impediments to core deposit retention. We look at two: asset size as of Q1 2019 and growth based on end of year 2018 and 2017 footings. Growing markets attract both deposits and competitors for banks of all sizes in those markets, so it was not surprising to find that *market competition* as an impediment to core deposit retention showed no association with asset growth (percentage change in assets YoY 2018) or size.

However, banks reporting *depopulation* and *capital constraints* as “important” or “very important” to attracting and retaining core deposits more frequently report negative growth.

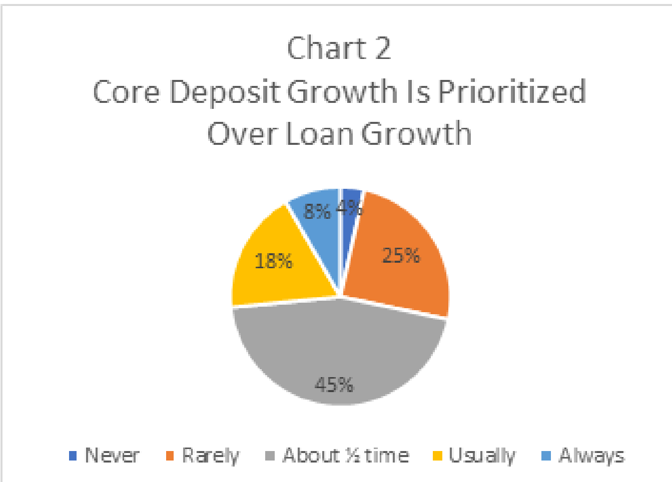
For example, banks with asset growth less than -3 percent more frequently report that *depopulation* is “important” (25 percent vs. 18 percent overall) and “very important” (21 percent versus 12 percent overall). Likewise, these banks more frequently report that capital constraints are “important” (16 percent versus 10 percent overall) and “very important” (13 percent versus 4 percent overall).

Neither of these results is a surprise. Banks that are experiencing a deposit loss in their market are typically shrinking and would identify depopulation as a critical factor in maintaining core deposits. If a bank is capital constrained, shrinking the asset base may be a way to improve capital ratios but challenges a bank’s ability to maintain core deposits and franchise value.

The importance of *capital* as a constraint to attract/retain core deposits is also associated with profitability as measured by ROA (YoY Q1 2019). More profitable banks should be less capital constrained, all else equal. Indeed, the Survey shows that the least profitable banks (ROA last 12 months <0.50 percent) more frequently report *capital* as “important” (14 percent versus 9 percent overall) or “very important” (11 percent versus 4 percent overall) as a constraint in attracting and retaining core deposits. Likewise, the most profitable banks over this period (ROA >1.75 percent) more frequently report capital as “not important” (60 percent versus 48 percent overall).

Section 3. A Tale of Two Strategies: Growth in Core Deposits or Growth in Loans?

Bank regulators are paying close attention to liquidity and higher loan-to-deposit ratios for community banks and this has been highlighted in the financial press (Peters, *American Banker*, 4/10/2018). If loan growth exceeds core deposit growth, then banks can access wholesale funding up to the point where the regulators start expressing concerns. The 2019 Survey addresses this question by asking banks whether core deposit growth is currently prioritized over loan growth. Chart 2 shows that about the same percent report “usually” or “always” (27%) as those reporting “never” and “rarely” (28%), with the remainder (45%) reporting about half the time.



The Survey also asked forward-looking questions about the greatest challenge banks were facing over the next 12 months that included loan demand, cost of funds and core deposit growth. A bank’s core funding strategy should be forward-looking: banks that “always” favor a core deposit growth strategy should be most concerned about core deposit growth and banks that favor a loan growth strategy should be most concerned about loan demand. The results in Table 2 below confirm these hypotheses.

	Table 2: Core Deposit Strategy and Greatest Challenges to Business		
Core Deposit Growth Priority	Core Deposit Growth	Cost of Funding	Loan Demand
Never	0%	0%	24%
Rarely	9	5	23
About ½ time	22	8	11
Usually	38	12	4
Always	44	19	3
Total	23%	9%	13%

Forty-four percent of the banks that categorize core deposit growth as the greatest challenge they face over the next twelve months report “always” pursuing a core deposit growth strategy and 38 percent “usually” compared to 23 percent overall. The future cost of funding is also strongly associated with a core deposit growth strategy as would be expected if core deposits are both a stable and low cost source of funding. Nineteen percent of the banks reporting cost of funding as the greatest challenge report “always” pursuing a core deposit growth strategy compered to 9 percent overall. Finally, for those banks reporting that loan demand is the greatest challenge facing its business, 24 percent report that a core depost strategy is “never” pursued and 23 percent report “rarely”, compared to 13 percent overall.

Section 4. Factors Influencing Core Deposit Growth Strategy

The highest asset growth (≥8 percent) banks more frequently report that core deposit growth is “usually” or “always” prioritized over loan growth (24 percent versus 18 percent overall, and 15 percent versus 8 percent overall, respectively). Likewise, core deposit growth was “rarely” or “never” prioritized for firms experiencing negative growth (33 percent versus 25 percent overall, and 6 percent versus 3 percent overall, respectively). This outcome suggests that rapidly growing banks are concerned with liquidity and rely primarily on wholesale funding, thus the prioritization of core deposit growth to support asset growth. Shrinking banks, however, would be more concerned about finding asset growth opportunities over sourcing core deposits.

Two of the impediments to attracting/retaining core deposits, *market competition* and *capital constraints*, showed a strong association with the core deposit versus loan growth prioritization question. First, banks that reported market competition as “slightly” or “moderately important” as an impediment to attracting and retaining core deposits more frequently reported that core deposit growth was “never” or “rarely” prioritized over loan growth (10 percent versus 3 percent overall and 32 percent versus 24 percent overall, respectively). However, the converse was not true: banks reporting market competition was “important” or “very important” did not more frequently report that core deposit growth was “usually” or “always” prioritized over loan growth. This outcome may reflect that less competitive markets may be ones with fewer growth opportunities and that these markets are losing deposits.

Second, banks that reported *capital* was “important” or “very important” as an impediment to attracting and retaining core deposits more frequently reported that core deposit growth was “usually” or “always” prioritized over loan growth (23 percent versus 18 percent overall and 17 percent versus 8 percent overall, respectively). This outcome may be reflecting the actions of banks that have some constraints on borrowing, e.g., regulatory scrutiny, and the need for capital to grow.

The decision to pursue a core deposit growth strategy versus a loan growth strategy may also be driven by forward looking factors such as expected business conditions, expected monetary policy, expected profitability and expected franchise value. Only one of these variables, expected profitability, showed a strong association with choosing a core deposit growth strategy. Sixty-seven percent of banks reporting “higher” expected future profitability reported “always” pursuing a core deposit growth strategy compared to 45 percent overall.

Section 5. Wholesale Funds: Source of Growth or Regulatory Scrutiny?

The 2019 Survey did a deep dive into wholesale funding strategies identifying seven possible alternatives to core deposits. Table 3 shows the most frequently used wholesale funding source was public deposits (73 percent), followed by Federal Home Loan Bank (“FHLB”) advances (65 percent) and then a steep drop to 45 percent for fed funds/repos.

Table 3: Wholesale Funding Sources

	Use and no change	Use and increase	Use but will drop	No use and no plan to use	No use but plan to use
Brokered funds	35%	4%	6%	48%	7%
FHLB Advances	65	6	3	20	6
Public Funds	73	9	3	13	2
Other Borrowing	27	2	2	65	5
Discount window	16	1	1	77	6
Fed funds/repos	42	2	2	48	7
Listing service	25	2	3	62	8

Some usage patterns emerge for brokered funds, FHLB Advances and fed funds/repos. Larger banks more frequently report currently using (and no plans to change) brokered deposits (48 percent versus 35 percent overall) and FHLB advances (77 percent versus 65 percent overall). Faster growing banks more frequently report using brokered deposits only (49 percent versus 35 percent overall). There is no association between profitability and the use of any source of wholesale funds.

The use of *wholesale funding* could be related to impediments to attracting and maintaining core deposits. For example, if competition is an impediment, then wholesale funding could substitute for core deposits if there are profitable loan opportunities. None of the impediments, however, were related to the use of wholesale funding. Wholesale funding could also be related to a strategy where loan growth is favored over core deposit growth, especially if the bank is capital constrained, yet the results show the opposite, perhaps because rapid increases in the loan-to-core deposit ratio attract regulatory scrutiny.

Banks that currently use brokered deposits and FHLB advances are more likely to prioritize core deposit growth over loan growth. For example, 45 percent of banks that currently use brokered funds report that they “usually” or “always” prioritize core deposit growth over loan growth versus 34 percent overall. Similarly, but somewhat weaker for FHLB advances, 71 percent of the bank that currently use FHLB advances “usually” or “always” prioritize core deposit growth over loan growth versus 65 percent overall.

Interestingly, banks that do not currently use brokered funds or FHLB advances are more likely to favor a loan growth strategy over a core deposit strategy, although the association is weaker for FHLB advances. Sixty-eight percent of those banks not currently using brokered funds report that they “never” or “rarely” prioritize core deposit growth over loan growth compared to 49 percent overall; the same percentages for FHLB advances are 32 percent versus 28 percent overall.

This puzzling outcome may reflect a recognition that the use of borrowed funds increases liquidity risk and the chance of a regulatory response. If so, growth of core deposits would reduce this risk and the survey responses support this conjecture. Banks that use brokered funds or advances more frequently report *liquidity risk* as a “very important” risk facing the bank today. Forty-percent of the banks that currently use brokered deposits report that *liquidity risk* is “important” or “very important” versus 34 percent overall; the similar percentages for FHLB advances are 73 percent and 66 percent, respectively.

Another way to look at this association is to see if the choice of a core deposit growth strategy is directly related to a high assessment of *liquidity risk*, where respondents are asked to rank how important *liquidity risk* is to their business from “not important” (5 percent) to “very important” (23 percent). Fourteen-percent of those firms reporting that *liquidity risk* was “very important” reported “always” for a core deposit growth strategy compared to 8 percent overall. This outcome is consistent with a risk-driven core deposit growth strategy.

Section 6. Core Deposit Growth versus Loan Growth: A Multivariate Look

A better way to analyze how perceptions of impediments to core deposit attraction and retention, balance sheet characteristics, wholesale funding, and importance of liquidity risk to the bank affect its choice between a core deposit growth over loan growth strategy is to use ordered probit.[1] The dependent variable, the core deposit growth versus loan growth strategy choice or STRATEGY, lends itself to this technique because it is an ordered choice variable.

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[1] Ordered probit is often used when the dependent variable has more than one value based on an ordered scale such as STRATEGY. Unlike OLS, where we would assign a number to each outcome, e.g., 1=not important, 2=somewhat important, etc., ordered probit makes no assumption about the size of the differences between

The STRATEGY choice should be affected by the impediments to retention. However, the impact was not the same for all impediments and some were more important than others. As such, the impediments that showed the strongest association with STRATEGY are entered into the model: market competition (COMPETITION) and capital (CAPITAL). In the bivariate analysis both COMPETITION and CAPITAL were positively related to STRATEGY. Asset growth (GROWTH) was shown to be positively correlated with the choice of a core deposit growth strategy and is included as an independent variable. Two of the wholesale funding choices, FHLB advances (FHLB) and brokered deposits (BROKDEP) were positively related to STRATEGY and are also entered into the model. The importance of liquidity risk (LIQRISK) to a bank was shown to have a positive impact on STRATEGY, i.e., a greater chance of prioritizing core deposit growth. And finally, banks expecting future profitability to be higher (EPROFIT), were more likely to report a core deposit growth strategy. The variable summary statistics are presented in Table 4 below.

Table 4: Summary Statistics

	Mean	Std. Dev.	Min.	Max
STRATEGY	3.03	0.95	1	5
GROWTH	3.52	1.45	1	6
COMPETITION	4.44	0.68	2	5
DEPOP	2.56	1.41	1	5
BROKDEP	0.34	0.47	0	1
FHLB	0.63	0.48	0	1
LIQRISK	3.58	1.11	1	5
EPROFIT	1.72	0.75	1	3

options. In other words, if “very important” =5 and “not important”=1, OLS would consider “very important” to be 5X the value of “not important,” where ordered probit does not. See Greene (2012).

The ordered probit results are shown in Table 5 and generally support the direction of the relationships discussed above. GROWTH is positively related to the choice of a core deposit growth strategy, supporting the idea that banks with growth opportunities want to avoid the liquidity risk associated with wholesale funding to support growth. Both of the impediment variables to core deposit growth, COMPETITION and DEPOP, are positively related to STRATEGY, but only COMPETITION is statistically significant.

Wholesale funding use (BROKDEP and FHLB) are both positively related to STRATEGY but only BROKDEP is significant. As noted above, while banks might be expected to use wholesale funding to support loan growth opportunities, a conservative approach to liquidity management would balance core deposit and wholesale funding growth to support loan growth.

LIQRISK is positively related to STRATEGY, i.e., the more banks rank liquidity risk as important to their business, the more likely they are to choose a core deposit growth strategy. And finally, EPROFIT is positively related to STRATEGY as expected; a bank that reports expected higher future profits is more likely to pursue a core deposit growth strategy.

Table 5: Ordered Probit Results for STRATEGY			
Number of obs.		467	
LR chi2		65.6	
Prob >chi2		.000	
Pseudo R2		.0531	
Indep. Variable	Coeff.	Std. Err.	
GROWTH	.112	.037	***
COMPETITION	.139	.075	*
CAPITAL	.057	.045	

BROKDEP	.272	.112	**
FHLB	.109	.113	
LIQRISK	.158	.049	***
EPROFIT	.189	.068	***
*** significant at 1% level; ** significant at 5% level; * significant at 10% level			

The statistical significance of many of the model's coefficients does not provide any insight into their importance. For example, if a bank reports using brokered deposits as a wholesale funding source, how much more likely is it to report pursuing a growth strategy based on core deposits than a bank that does not use brokered deposits. To answer the question of importance, the marginal effects of each statistically significant independent variable at its mean is presented in Table 6. For example, a bank reporting the use of brokered deposits (BROKDEP) is 3.8 percent more likely to report "always" pursuing a core deposit growth strategy and 8.0 percent less likely to report "rarely" reporting a core deposit growth strategy compared to banks that do not use brokered deposits.

Table 6: Marginal Effects on STRATEGY at Means of Independent Variables

	Never	Rarely	About ½ time	Usually	Always
GROWTH	-0.7%	-3.0%	0.2%	2.1%	1.4%
COMPETITION	-0.8	-3.7	0.2	2.6	1.7
BROKDEP	-1.8	-8.0	0.4	5.7	3.8
LIQRISK	-1.0	-4.4	0.2	3.1	2.0
EPROFIT	-1.1	-5.0	0.2	3.6	2.3

For the other independent variables, the interpretation of significance has to be made from the mean values and may not be very intuitive. For example, for LIQRISK, the mean is 3.58, a value nearly half-way between "moderately important (3)" and "important (4)." Nonetheless, the marginal effect for LIQRISK shows that at is mean value, a bank is 3.1 percent more likely to report “usually” pursing a core deposit growth strategy.

Section 7. Conclusion

The 2019 National Survey of Community Banks included a number of questions relating to core deposits and wholesale funding that permits an in-depth look at how approximately 500 community bankers are thinking about their funding strategies in an uncertain economic environment.

Market competition is by far the most important impediment to attracting and retaining core deposits irrespective of bank size, urban versus rural, or geographic location. *Depopulation*, while much less important than market competition overall, was much more important to rural respondents. The impact of asset size was strong and growth, specifically negative growth, was associated with reporting of *capital* constraints and *depopulation* as impediments to core deposit growth. ROA had the strongest impact on reporting of *capital* as a constraint to raising deposits with higher ROA banks less likely to report capital as a constraint and vice versa.

The Survey asked respondents about their pursuit of a core deposit growth strategy over a loan growth strategy. Interestingly, the responses were symmetrically distributed around “about ½ the time” and internally consistent with forward looking survey questions about the biggest challenges facing their bank. Market competition and capital were positively associated with a core deposit growth strategy as were banks reporting an expectation of higher profits over the next year.

The survey also provided a view into how wholesale funding was related to impediments to attracting and retaining core deposits. Only two of the sources, brokered deposits and Federal Home Loan Bank advances, showed any relation with a core deposit growth strategy, which in this case was positive. This somewhat counterintuitive outcome, i.e., the use of borrowed funds should support loan growth in excess of core deposit growth, can be explained by the importance banks place on liquidity risk. A higher assessment of liquidity risk was associated with an increased use of both brokered funds and FHLB advances. Banks using wholesale funds may be hedging this important risk by emphasizing a core deposit growth strategy that would maintain a desired balance between core and wholesale deposits.

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