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Markets?**

by

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Do Multimarket Banks Set Uniform Loan Rates Across Markets?

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ABSTRACT

Recent work has suggested that multimarket banks tend to offer the same deposit interest rates in all local markets served, with implications for a broader geographic market definition. This note examines comparable evidence on the consumer loan side, finding that while *some* banks may offer the same or similar loan rates across geographic markets – especially within the same state -- this does not seem to apply more generally.

JEL Classification Codes: G21, L2

Keywords: local banking markets, multimarket banks, consumer loan rates

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Do Multimarket Banks Set Uniform Loan Rates Across Markets?

In recent years, with the growth of multimarket bank (MMB) branching and the Internet, the traditional local market definition for banking markets¹ has increasingly been challenged, both in the courts and in academic circles.² Radecki (1998) examined bank deposit interest rates across cities and suggested that the fact that MMBs often offered the same rate indicated a broader geographic market was appropriate. However, others have noted that common pricing across markets is not a terribly useful guide to market definition (or at best a one-sided test), in that common pricing in distinct markets can be attributable to common demand and/or supply factors.³

The issue of whether MMBs do set the same interest rates (either for deposits or loans or both) across markets remains of some importance, though, as it does suggest a competitive role for multimarket effects. For example, Park and Pennacchi (2003) propose, in a spatial model, that large MMBs can promote competition when they compete in concentrated retail loan markets (though tend to reduce competition in retail deposit markets) – but the centerpiece of their theoretical model is the assumption that

¹ This has been the view at least since the Supreme Court opinion in Philadelphia National Bank (1963).

² See, for example, Shull and White (2000).

³ While this has been noted more generally, in the banking market context Heitfield (1999) and Biehl (2002) have made this point recently, pointing out that even where MMBs offer the same deposit rates in two markets, comparisons of single-market bank rates across the two markets don't indicate uniform pricing.

MMBs always charge the same rates in all markets (both on the loan and deposit sides).⁴ They present some evidence suggesting uniformity in MMB rates *within states* (but considerable variation across states) for a single time period (November of 2002),⁵ though the issue of whether this uniformity is greater than that experienced by smaller independent banks in different markets within a particular state is not addressed. This note attempts to contribute in this area.

The point discussed here is a somewhat narrow one, and – as noted above -- does not directly relate to questions of market definition in consumer banking. The results do help resolve the issue of whether MMBs act independently in the different cities in which they operate, at least on the consumer lending side. The major question examined is whether loan rates charged by the same bank in two markets are more highly correlated than loan rates charged by two independent banks in those same two markets; some effort is made as well to distinguish within-state from cross-state effects (which has been noted in other studies on the deposit side). Recognizing that correlation across markets is not the same as uniformity in pricing across markets, there is also an attempt to present some descriptive data on the uniformity (or lack of it) in loan rates across a bank's markets.

⁴ They motivate this assumption in terms of the “greater potential for loss of control between top management and branch-level operations” with MMB managers making loan approval and pricing decisions based on system-wide rules and “hard” information (financial statements and credit histories), while “small banks’ simpler organization allows such decisions to be based on knowledge of the borrower’s ‘character’ and of local market conditions” (Park and Pennacchi, 2003, p. 4).

⁵ And there is evidence in their data of what we find below, that the tendency to have similar loan rates in different cities served by MMBs varies by the particular MMB – e.g., Fifth Third Bank’s personal loan rates vary between 13.99 and 14.99 percent within Ohio, U.S.Bank’s rates in Missouri vary between 12.99 and 14 percent, National City Bank’s rates in Ohio vary between 13.25 and 15.25 percent.

1. Data and Analysis

Data from the Federal Reserve Board's *Quarterly Report of Interest Rates on Selected Direct Consumer Installment Loans* are examined – using quarterly data from 1991 through 1999.⁶ The survey underlying these data is designed to impose a minimal burden on the reporting companies, asking for only very limited information – the most common rate at which 48-month new automobile and 24-month non-credit cards unsecured consumer loans were offered during the reporting period. No information on size of loans, volume of loans, or other loan terms is gathered. Narrowing the sample to city-pairs in which at least one bank operated in both (and reported interest rates) and at least one other bank was surveyed in each market, leaves 10 city-pairs with data for at least 15 quarters on new vehicle loan rates and unsecured (non-credit card) loans.

The initial step is to develop correlation coefficients between each bank in the first market and each bank in the second, for the 10 city-pairs. The next step is to see whether these differ by whether the correlation is between rates charged by independent banks and those charged by the same bank. One point to note is that all of these banks are large, and operate in multiple markets, so the analysis is not aimed at differences between large and small banks, or between single market and multimarket banks. The city-pairs are: (1) Albany/Boston; (2) Atlanta/Roanoke; (3) Atlanta/Nashville; (4) Cleveland/Columbus; (5) Cleveland/Indianapolis; (6) Cleveland/Louisville; (7) Columbus/Louisville; (8) Columbus/Indianapolis; (9) Cincinnati/Louisville;

⁶ Over that period about 120 commercial banks (all large member banks and a random sample of smaller banks) were surveyed quarterly (as of the Saturday ending the first full week in February, May, August, and November), spread out across roughly 80 metropolitan areas or rural counties. As participation is voluntary, there is a considerable amount of missing data.

(10) Detroit/Indianapolis.

Sufficient loan rate data were available to calculate a total of 64 cross-city correlations for the two series – new vehicle loans (NVL) and unsecured (non-credit card) loans (USL). There was relatively little correlation across cities in USL rates, with a mean correlation of 0.03, however a reasonably high mean correlation of 0.74 for NVL rates.

As noted above, the major aim of this study is to examine whether correlations between rates charged by banks operating in two cities are higher than between independent banks in the two cities. As a starting point consider a simple difference of means test: for the 11 cross-city correlations involving the same bank (the Cleveland/Columbus pair had two banks, National City Bank and BankOne, in both cities), the mean USL rate was 0.06, with a standard deviation of 0.31, while for the 53 independent-bank correlations, the mean USL rate was 0.02 with a standard deviation of 0.32; the mean NVL rate for the same-bank correlations was 0.73 with a standard deviation of 0.23, while the mean NVL rate for the independent-bank correlations was 0.74 with a standard deviation of 0.23. Clearly there is no significant difference between these mean correlations. Another way to look at the issue is to compare, for each city-pair, the same-bank correlation and the independent-bank correlation – for 6 of the 10 city-pairs, the same-bank correlation (in the case of Cleveland/Columbus the mean of the two same-bank correlations) of USL rates was higher than the mean independent-bank correlation; for 4 of the 10 city-pairs, the same-bank correlation of NVL rates was higher than the mean independent-bank correlation.

More formally, consider a simple regression model, explaining correlations by a series of dummy variables for city-pair fixed effects and any potential same-bank correlation effect. The results from an OLS version of this are presented as Table 1 (for both USL and NVL). Again, we find no significant impact on the correlation of loan rates across markets of a MMB presence. It is possible however, that as a matter of corporate strategy, some banks may adopt uniform loan pricing across markets while others may not. There are obviously tradeoffs involved in centralized price-setting – on the one hand, cost efficiencies and lessened risk of pricing errors made by branch level decision-makers, but on the other hand, less responsiveness to local market conditions – and it is reasonable to expect that different MMBs may evaluate these tradeoffs differently.

This is addressed in Table 2, with separate same-bank effects for the 7 different banks operating in both of at least one city-pair. For NVL, there is now the suggestion that Fleet and possibly PNC may have made a decision to charge similar rates in all markets they operate in,⁷ but in general the correlation of bank loan rates across markets still seems not to depend on whether banks surveyed are jointly owned or not. Of course, OLS is not really appropriate given that a correlation is of necessity a limited dependent variable (and for NVL especially, the correlations are largely clustered in the 0.70 to 1 range). As a robustness test, a Tobit analysis was also performed (results available on request), with similar results – no same-bank effect in general, but again a significant

⁷ However, even for Fleet, the degree of similarity of NVL rates across markets is limited. Defining the “same” rate as ones differing by no more than 0.1 percentage points (admittedly an arbitrary criterion), 50% of quarterly comparisons of Albany/Boston and Albany/Portland (ME) were the same, while 40% of Boston/Portland comparisons were the same (this for the 1992-97 period).

positive impact of Fleet and PNC (these latter effects stronger than in the OLS specification).

A limitation of the above analysis is that, with one exception, the city-pairs analyzed cross state boundaries. What has been emphasized in the literature is that banks seem to charge the same deposit rates in other markets within a state, with less clear evidence of this occurring in locations in multiple states. To address this issue, another subsample of data is analyzed below. Of the banks in the Fed survey, three of them had respondent banks both in multiple cities within the same state and in other states: these were SunTrust (in Atlanta and Macon, GA, and Nashville, TN), National City Bank (in Cleveland and Columbus, OH, Pittsburgh, PA, and Louisville, KY), and BankOne (in Cleveland, Columbus, Dayton, and Mansfield, OH, Huntington, WV, Indianapolis, IN, and Dallas, TX).⁸ For each of these banks, the correlations between loan rates set in each of their markets were calculated, and we examine to see if rates within the same state are more closely correlated than across states.

Pooling these correlations for the three banks, we have 29 observations.⁹ A simple regression specification was employed, explaining the correlation by bank fixed effects and a dummy distinguishing correlations between same-state branches of a bank. We then allow each of the three banks to have differing same-state effects. These results are presented in Table 3. For unsecured loans we find no evidence of differences in same-bank correlations of rates between within- and across-state observations, though

⁸ BankOne also reported interest rates for Oklahoma City, OK during part of the sample period, but for a relatively short amount of time (9 quarters) and correlations were not included for this market.

⁹ The correlation between Pittsburgh and Columbus loan rates for National City Bank was dropped since only 7 quarters of data were available (given missing data for the two markets)..

BankOne does seem to have a modest positive correlation (around +0.3) between its loan rates in different cities.

However, there is some evidence of a stronger within-state effect for new vehicle loans, along with generally higher correlations across a particular bank's loan rates in different states (as high as +0.7 for BankOne), though one must be careful to distinguish *correlation* from *uniform pricing* – pairwise comparisons of BankOne's NVL pricing shows at most “same” pricing (defined as in footnote 5) in 29% of quarterly observations (for the Dallas/Dayton comparison). When the same-state effects are disaggregated by bank, it only turns up significant for National City Bank (reflecting a single very high correlation, +0.96, between its Cleveland and Columbus new vehicle loan rates, though only 12% of the quarterly observations in those two markets were the same).¹⁰

2. Conclusion

The results presented here reject the view that banks set the same loan rates across city markets in general, and are consistent with a local market definition and with market specific factors being of primary importance in an analysis of loan rate determination. Of course, the sample of banks analyzed is quite small. Furthermore, there is the suggestion that, as a matter of company strategy, some banks choose to set the same or similar loan rates in some or all the markets in which they operate, especially in same-state markets.

¹⁰ Another bit of evidence that banks *may* set similar consumer loan rates in different markets, at least within a given state, is the nearly perfect correlation (+0.98) between First Virginia Bank's Lynchburg and Roanoke rates – for both USL and NVL – during the decade of the 1990s (and roughly 80% of quarterly loan rates the same in both markets). First Virginia was not included in the regression study above since they had no out of state observations in the sample.

However, one cannot generalize this as a stylized fact appropriate for all banking institutions, at least on the consumer loan side.

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Table 1**OLS Estimates of General Same-Bank Effects on City-Pair Loan-Rate Correlations**

	Dependent Variable	
	USL Rate Correlation	NVL Rate Correlation
Same-Bank Dummy	0.040 (0.36)	-0.009 (0.13)
City-Pair Dummies:		
Boston/Albany	0.002 (0.01)	0.525 (5.14)
Atlanta/Nashville	-0.044 (0.26)	0.698 (6.83)
Cleveland/Louisville	0.140 (1.18)	0.566 (7.88)
Cleveland/Indianapolis	-0.028 (0.24)	0.867 (12.08)
Atlanta/Roanoke	0.180 (1.07)	0.892 (8.73)
Columbus/Indianapolis	-0.082 (0.60)	0.839 (10.10)
Columbus/Cleveland	0.001 (0.01)	0.853 (14.40)
Cincinnati/Louisville	0.048 (0.35)	0.621 (7.48)
Columbus/Louisville	-0.054 (0.39)	0.565 (6.81)
Detroit/Indianapolis	0.060 (0.44)	0.874 (10.52)
R ²	0.068	0.944
N	64	64

Note: constant term suppressed; t-statistics in parentheses below estimated coefficient.

Table 2**OLS Estimates of Specific Same-Bank Effects on City-Pair Loan-Rate Correlations**

	Dependent Variable	
	USL Rate Correlation	NVL Rate Correlation
Same-Bank Dummies:		
NBD	-0.267 (0.74)	-0.138 (0.66)
PNC	-0.352 (0.98)	0.364 (1.73)
First Union	0.684 (1.80)	-0.066 (0.30)
Fleet	0.448 (1.18)	0.531 (2.39)
SunTrust	0.421 (1.11)	-0.159 (0.72)
National City	-0.121 (0.59)	-0.149 (1.26)
BankOne	0.006 (0.03)	-0.046 (0.38)
City-Pair Dummies:		
Boston/Albany	-0.100 (0.53)	0.390 (3.52)
Atlanta/Nashville	-0.139 (0.73)	0.736 (6.64)
Cleveland/Louisville	0.160 (1.35)	0.583 (8.39)
Cleveland/Indianapolis	-0.024 (0.20)	0.872 (12.55)
Atlanta/Roanoke	0.190 (0.10)	0.907 (8.18)
Columbus/Indianapolis	-0.077 (0.55)	0.845 (10.45)
Columbus/Cleveland	0.017 (0.18)	0.868 (15.17)
Cincinnati/Louisville	0.113 (0.77)	0.559 (6.51)
Columbus/Louisville	-0.027 (0.20)	0.589 (7.28)
Detroit/Indianapolis	0.111 (0.76)	0.895 (10.43)
R ²	0.198	0.955
N	64	64

Note: constant term suppressed; t-statistics in parentheses besides estimated coefficient.

Table 3**OLS Estimates of Same-State Effects on Within-Bank Loan-Rate Correlations**

	Dependent Variable			
	USL Rate Correlation		NVL Rate Correlation	
SunTrust	-0.14 (0.90)	-0.14 (0.74)	0.52 (5.16)	0.54 (5.56)
National City	-0.17 (1.46)	-0.23 (1.72)	0.36 (4.67)	0.25 (3.63)
BankOne	0.29 (4.42)	0.30 (4.39)	0.72 (17.02)	0.74 (20.96)
Same State	-0.0002 (0.00)		0.16 (2.26)	
SunTrust/Same State		0.0007 (0.00)		0.10 (0.58)
National City/Same State		0.28 (0.93)		0.71 (4.63)
BankOne/Same State		-0.05 (0.41)		0.07 (1.00)
R ²	0.53	0.55	0.95	0.97
N	29	29	29	29

Note: constant term suppressed; t-statistics in parentheses below estimated coefficient.