Testing for Associations Between Local Growth and Banking

Models and Hypotheses

The growth literature indicates that financial institutions and policies are closely associated with State and national growth rates. Here, we estimate empirical models to test whether these relationships extend to the local market level. In particular, we explore the relationship between economic growth rates in local markets and geographic liberalization, market structure, and bank ownership structure using empirical models based on those that have already appeared in the finance and growth literature. We also test for differences in these relationships in metropolitan and nonmetropolitan areas.

As indicated in the above review of the literature, several factors suggest that nonmetropolitan areas could fare differently from metropolitan areas when geographic constraints on bank activity are lifted. For example, Calomiris (1993) provided historical evidence that efficiency costs imposed on local economies by limits on branching may be greater in rural areas. Bank-dependent borrowers in rural areas have faced high external finance costs due to scarce bank capital, cyclical and seasonal credit contractions, and additional costs when local banks failed because of inefficiently diversified portfolios. However, countervailing benefits to at least some rural interests may accompany geographic restrictions. Calomiris cited “loan” and “wealth” insurance. Recent research suggests the impact of market concentration may be ambiguous if it arises from competitive advantages in contestable markets, or if the “winner’s curse” effect is sufficiently large. Moreover, loss of local control and a reduced commitment to local growth could lead to a reduction in relationship-based lending that is important to the creditworthiness and viability of relatively opaque small businesses.

We investigate hypotheses concerning the economic growth benefits associated with changes in bank ownership and bank market structure and their relation to metropolitan and nonmetropolitan markets. The empirical work that follows resembles other work in the finance and growth literature. Following first Jayaratne and Strahan (1996—hereafter J&S), we model the local growth impacts of changes in geographic regulations. We extend this model to consider the impacts of the location of bank office ownership (in-market or out-of-market) and the location of control of local bank deposits. Then, following King and Levine (1993a and 1993b) and others, we model the average longrun annual growth rates as a function of both *ex ante* and contemporaneous measures of financial structure and a series of control variables.

Local Economic Growth and Geographic Deregulation. J&S present a simple fixed-effect model to test the impact of geographic deregulation on State-level economic growth:

$$(1) \qquad Y_{t,i} / Y_{t-1,i} = \alpha_t + \beta_i + \gamma DMA_{t,i} + e_{t,i}.$$

where $Y_{t,i}$ equals real, per capita, personal income during year t in local market i, $DMA_{t,i}$ is a binary variable equal to 1 for markets in States that allow unrestricted branching through mergers and acquisitions in year t, and $e_{t,i}$ is an error term with the usual properties. As in J&S, β_1 represents the cross-section-specific—or local market—component of longrun economic growth; α_1 represents the common, economywide shock to growth at time t; and γ represents the increase in per capita economic growth stemming from deregulation of branching through mergers and acquisitions. We test the hypothesis that geographic liberalization has no relationship to annual economic growth (H1a: $\gamma = 0$) in separate regressions of metropolitan and nonmetropolitan markets.

Local Economic Growth and Bank Market Structure, Bank Ownership, and Deposit Control. To isolate the impact of changes that may be associated with geographic liberalization, we augment J&S’s basic model in two stages. First, we add a variable to control for local bank market concentration, the Herfindahl-Hirschman index of bank deposits (HHI), which is the sum of squared market shares for all market participants,

$$(2) \qquad Y_{t,i} / Y_{t-1,i} = \alpha_t + \beta_i + \gamma DMA_{t,i} + \delta HHI + e_{t,i},$$

to test whether market concentration is related to growth (H2b: $\delta = 0$) and whether that relationship vitiates any relationship between liberalization and growth (H2a: $\gamma = 0$).

Next, we control for in-market and out-of-market ownership of bank offices and control of bank deposits. More specifically, we add the number of in-market owned bank offices (NIB), the number of out-of-market owned bank offices (NXB), the inflation-adjusted amount of local deposits controlled by in-market owned banks (IDEPS), and the inflation-adjusted amount of local deposits controlled by out-of-market owned banks (XDEPS). These variables allow us to distinguish whether the relationship between local growth and out-of-market control of banking activity, rather than other activities related to ownership of local bank offices, is specifically related to deposit control. The estimated equation is thus:

$$(3) \quad Y_{t,i} / Y_{t-1,i} = \alpha_t + \beta_i + \gamma_1 DMA_{t,i} + \gamma_2 DNOVO_{t,i} + \delta_1 HHI_{t,i} + \delta_2 NIB_{t,i} + \delta_3 NXB_{t,i} + \delta_4 IDEPS_{t,i} + \delta_5 XDEPS_{t,i} + e_{t,i},$$

where *DNOVO* is a binary variable equal to one for markets in States that allow unrestricted *de novo* branching in year *t*. This latter variable helps account for the process of geographic liberalization in more detail. As documented by Amel (no date), geographic deregulation has typically occurred in two stages. In the first stage, multibank holding companies (MBHC's) may convert subsidiary banks into branches and may expand geographically through acquisition and conversion of existing banks. In the second stage, banks are allowed to expand geographically by establishing new (*de novo*) branches anywhere in the State. Adding *DNOVO* to the empirical model allows us to test the additional impact of the second stage of deregulation on metropolitan and nonmetropolitan growth. *NIB, NXB, IDEPS*, and *XDEPS* provide information on the impact of nonlocal ownership of bank offices and control of deposits.

This specification allows testing of hypotheses relating local economic growth to geographic liberalization, local market growth, and the loci of bank office ownership and of control of local deposits (in-market and out-of-market). First, we test for a statistically significant relationship between our explanatory variables and local economic growth, both jointly and individually:

H3a: Shortrun, local economic growth is independent of bank deposit market concentration, the distribution of nonlocal and local bank office ownership, and the distribution of nonlocal and local control of local deposits ($\delta_{1,j} = \delta_{2,j} = \delta_{3,j} = \delta_{4,j} = \delta_{5,j} = 0$, j= metropolitan or nonmetropolitan).

H3b: Local growth is independent of bank deposit market concentration ($\delta_{1,j} = 0$).

H3c: Local growth is independent of the number of local bank offices ($\delta_{2,j} = \delta_{3,j} = 0$).

H3d: Local growth is independent of the quantity of local deposits ($\delta_{4,j} = \delta_{5,j} = 0$).

Then, we test whether the coefficients on each pair of variables related to local and nonlocal control are the same. That is, we test whether the relationship of growth to nonlocally owned offices or nonlocally owned deposits is the same as the relationship of growth to locally owned bank offices or locally owned deposits.

H3e: The locus of local bank office ownership (in-market or out-of-market) is irrelevant to local growth ($\delta_{2,j} = \delta_{3,j}$).

H3f: The locus of control of local bank deposits (in-market or out-of-market) is irrelevant to local growth ($\delta_{4,j} = \delta_{5,j}$).

The results of the hypotheses tests directly address the concerns of nonmetropolitan areas regarding the potentially negative impact of loss of local control over bank capital and deposits. Results concerning the relationship of growth to the number of bank offices also add to the literature on geographic liberalization and access to bank services (Calomiris and Schweikart, 1988; Evanoff, 1988; Gunther, 1997).

Longrun Local Economic Growth and Market Structure, Ownership, and Deposit Control. King and Levine estimate the relationship between national growth rates and both contemporaneous and initial values of financial and other variables. Following this literature, we estimate a model with both contemporaneous and initial values of bank market variables:

$$(4) \quad \overline{GY}_{t_T,t_0} = \alpha + \beta_1 NIB_{t_0} + \beta_2 NXB_{t_0} + \beta_3 XTB_{t_T,t_0} + \beta_4 DIB_{t_T,t_0} + \beta_5 DXB_{t_T,t_0} + \beta_6 DDEP_{t_T,t_0} + \gamma_1 DPC_{t_0} + \gamma_2 LEDU_{t_0} + \gamma_3 LPOP_{t_0} + \gamma_4 LRPCPI_{t_0} + \gamma_5 HHI_{t_0} + e$$

where $\overline{GY}_{t_T, t_0}$ is the geometric mean of the annual growth rates from the initial time, t_0, to the end of the period, t_T, and initial variables are defined as in table 1.

This model affords insight into an important set of unexplored issues—the longrun linkage between bank concentration and ownership structure versus growth rates in income. The empirical tests below distinguish the effects on growth of the raw number of bank offices; of the market concentration of banks; and of the mix between locally owned and remotely owned bank offices. By estimating the model for different time periods, we can also examine the stability of the linkages over time. Our measures of market structure and ownership include the market-wide Herfindahl-Hirschman index (HHI) of deposits that is commonly used in empirical banking research and by Federal regulators in assessing the degree of banking competition; numbers of offices of banks headquartered in the market at the beginning of the sample period (NIB); numbers of local branches of banks headquartered outside the market at the beginning of the sample period (NXB); the ratio of remotely owned to locally owned bank offices at the beginning of the sample period (XTB); the growth rate in the number of locally owned bank offices during the sample period (DIB); and the growth rate in the num-

Table 1—Variables used and their sources

Variable	Description
DMA	Binary variable equal to 1 if market entry allowed through mergers and acquisitions. *Source: Amel, no date.*
DNOVO	Binary variable equal to 1 if market entry allowed through establishing new branches. *Source: Amel, no date.*
NIB	Initial number of in-market owned bank offices. *Source: FDIC Summary of Deposits.*
NXB	Initial number of out-of-market owned bank offices. *Source: FDIC Summary of Deposits.*
IDEPS	Initial amount of deposits controlled by in-market owned banks. *Source: FDIC Summary of Deposits.*
XDEPS	Initial amount of deposits controlled by out-of-market owned banks. *Source: FDIC Summary of Deposits.*
XTB	Initial ratio of out-of-market owned bank offices to total bank offices. Note: This ratio is undefined for markets with 0 bank offices. For these markets, we set XTB equal to 1 under the presumption that such markets are more like those whose banks are controlled outside the local market than those whose banks are controlled in-market. *Computed from FDIC Summary of Deposits.*
DIB	Ratio of the number of in-market owned bank offices at beginning of period to that at end of period. Note: This ratio is undefined for markets with 0 in-market owned bank offices in the base year. For these markets, we set the initial level equal to 0.01. *Computed from FDIC Summary of Deposits.*
DXB	Ratio of the number of out-of-market owned bank offices at beginning of period to that at end of period. Note: This ratio is undefined for markets with 0 out-of-market owned bank offices in the base year. For these markets, we set the initial level equal to 0.01. *Computed from FDIC Summary of Deposits.*
DDEP	Change in the ratio of deposits held at out-of-market owned bank offices to total deposits at bank offices from beginning of period to end of period. Note: This ratio is undefined for markets with 0 deposits in bank offices in the base year. For these markets, we set the initial level equal to 0. If, for example, the market has no deposits in bank offices in either the initial or final year, then DDEP is set to 0. *Computed from FDIC Summary of Deposits.*
DPC	Initial level of deposits per capita held at all bank offices in market. *Computed from FDIC and BEA data.*
LEDU	Log of the percent of total adult population with at least 4 years of college at the beginning of the decade in which t_0 falls. *Source: U.S. Census 1970, 1980.*
LPOP	Log of market population (in millions). *Source: BEA*
LRPCPI	Log of real per capita disposable income (in thousands) in market. *Source: BEA*
HHI	Initial market (MSA or rural county) level Herfindahl-Hirschman Index (divided by 10,000) computed with banks consolidated to the holding company level. Note: For markets with zero banks, this is set equal to 1 under the presumption that consumers in these markets will have no more choices than those in markets served by only one bank. *Computed from FDIC Summary of Deposits.*
Nonmetro county typologies: *Source: Economic Research Service/USDA computation based on BEA data.*	
FM	Farming-dependent, 1989 (farm income averages more than 20% of total income from 1987-89)
MI	Mining-dependent, 1989 (mining income averages more than 15% of total from 1987-89)

ber of remotely owned bank offices during the sample period (DXB). These variables permit a decomposition of the effects of raw numbers of bank offices, relative sizes of banks, local versus remote bank ownership, and trends in each of these factors. The locus of ownership is potentially relevant to credit patterns because many multi-market banks centralize their lending decisions for larger loans, making the final decision outside the borrower's market.

The model also includes a vector of control variables as follows. Deposits per capita as of the initial year of the regression period (DPC) controls for the relative supply of funds and intensity of intermediation in the market, similar to King and Levine (1993b). The change in the ratio of deposits in nonlocally owned branches to deposits in locally owned banks over the sample period (DDEP) controls for any shift in the aggregate market share of remotely owned banks, though we do not attach a causal interpretation to this variable because it will reflect any structural response by the banking industry to contemporaneous local economic conditions and trends. The log of the local market population (LPOP) and the log of the real per capita personal income (LRPCPI), both as of the first year of the regression period, control for market size. The log of the percentage of total adult population having completed at least 4 years of college (LEDU) as of 1970—or, for the later regressions, 1980—controls for the average level of education, a proxy for human capital and work force quality. In the rural regressions, USDA county typology dummies are included for farming-dependent (FM) and mining-dependent (MI) counties, measured as of 1989 (see Cook and Mizer, 1994, for further details). Although other typologies are also assigned to counties by the USDA, systemic shocks to agriculture and mining during the 1980's made it essential to control for these two characteristics in particular. Separate regressions were fitted for rural counties alone and for MSA's alone.

We therefore test the following hypotheses, analogous to those tested with model 3:

H4a: Longrun average growth rates of local real per capita personal income are independent of measures of initial local bank market structure ($\beta_{1,j} = \beta_{2,j} = \beta_{3,j} = \gamma_{5,j} = 0$, j= metropolitan or nonmetropolitan).

H4b: Longrun average growth rates of local real per capita income are independent of initial local bank deposit market concentration ($\gamma_{5,j} = 0$).

H4c: Longrun average growth rates of local real per capita income are independent of the initial number of local bank offices ($\beta_{1,j} = \beta_{2,j} = 0$).

H4d: Longrun average growth rates of local real per capita income are independent of the initial percentage of out-of-market ownership of bank offices ($\beta_{3,j} = 0$).

H4e: Longrun average growth rates of local real per capita income are independent of the initial levels of in-market or out-of-market ownership of local bank offices ($\beta_{1,j} = \beta_{2,j}$).

H4f: Longrun average growth rates of local real per capita income are independent of contemporaneous changes in the locus of ownership of local bank offices ($\beta_{4,j} = \beta_{5,j}$).

H4g: Longrun average growth rates of local real per capita income are independent of any contemporaneous shift in the locus (in-market or out-of-market) of control of local bank deposits ($\beta_{6,j} = 0$).

Estimation and Data Information

To estimate the above models, we use data from three primary sources: the Federal Deposit Insurance Corporation's Summary of Deposits data, the Bureau of Economic Analysis's county-level estimates of income and population, and the Bureau of the Census's data on educational attainment. Table 1 lists the variables and their sources.

In keeping with conventional practice in bank structure research, as well as in regulatory policy analysis, we define local markets as metropolitan statistical areas (MSA's) or nonmetropolitan counties (see Whitehead, 1990; Jackson, 1992). Different agencies define U.S. counties somewhat differently because of anomalies among States and changes over time. We ensure consistency across data sets and over time by imposing the following standards on the data. We define urban banking markets based on 1993 definitions of MSA's and hold this definition constant over the sample period to abstract from local changes over time. Rural banking markets are defined as counties not included in MSA's. For consistency with previous research, we exclude Alaska and Hawaii from our shortrun models but not our longrun model. We aggregate each of Virginia's independent cities with the county that surrounds them, and aggregate certain counties in Montana and Wisconsin for which treatment is not uniform across agencies. This process yields 2,258 (2,270 for the longrun model) rural banking markets and 267 (269) urban banking markets comprising 827 (829) urban counties. We use data from years 1981-96 to estimate our shortrun models and from 1973, 1984, and 1996 for our longrun model.

To fulfill its obligations under the Community Reinvestment Act, the FDIC collects information on the amount of deposits collected by each bank office operating in the United States at the end of the second quarter each year and publishes this information in its annual Summary of Deposits report. From this information, we derive the number of local bank offices owned and the amount of local deposits controlled by banking firms headquartered within and outside each local banking market. From the deposit information, we compute the HHI to measure market concentration. For our longrun model, this information is used to compute contemporaneous changes in in-market and out-of-market ownership of bank offices and control of bank deposits over time. These measures of in-market and out-of-market ownership or control are all based on the location of a bank's headquarters office at the bank charter level, not at the holding company level. We eliminate banks with nonpositive aggregate deposits across all offices, but include offices that report zero deposits at the county level.

Per capita personal income is calculated from Bureau of Economic Analysis estimates of county populations and personal incomes adjusted for inflation using the national consumer price index. To control for educational attainment, we use data from the Bureau of the Census on the percentage of adult population in each county with at least 4 years of college at the start of the relevant decade. For rural counties, we use U.S. Department of Agriculture's county typology to control for certain types of local economies that were most likely to experience dramatic shocks during the study period: farming-dependent and mining-dependent counties (Cook and Mizer, 1994).

Model Estimation. Each model is estimated separately for metropolitan and nonmetropolitan markets. There are reasons to expect violations of OLS assumptions in these data sets, especially with respect to multicollinearity and heteroskedasticity. Correlation coefficients are quite high between several pairs of variables. Of particular concern in the shortrun data are the correlations between NIB and IDEPS (0.82 in nonmetropolitan markets and 0.94 in metropolitan markets), NXB and XDEPS (0.90 and 0.93), and DNOVO and DMA (0.65 and 0.70). Of concern in the longrun data are correlations between NXB and XTB, and NIB and LPOP, and, in the nonmetropolitan subsamples, NIB and HHI, and HHI and LPOP. We test for multicollinearity using the condition index. Standardizing the data to mean zero and unit variance brings all condition indices below 10, indicating no major problem with statistical dependencies.[6] F tests (not reported here) also indicate little impact of collinearity on the statistical significance of coefficients testing our hypotheses.

In addition, J&S find heteroskedasticity related to the size of economies and use weighted least squares to correct it. Weighting by size of the local economy places greater emphasis on larger economies. Good econometric reasons may exist for doing so. For example, J&S give the following three reasons: (1) Measurement errors may be relatively larger for small economies, (2) measurement problems related to interstate commerce are likely to be relatively larger for smaller States, and (3) small economies are more likely to be dominated by specific industries and suffer from industry-specific shocks that would make their growth rates more variable. We, too, found that using weighted least squares substantially improved the fit of our models.

Given the level of disaggregation of our data, we are also concerned about outliers and influential observations. We tested for influential observations using Cook's D statistic (Cook, 1977). We also removed a small number of outlier observations whose regression errors were more than 50 percent greater in absolute value than the next greatest absolute error.

The longrun model 4 spans 1973-96 and is fitted as two consecutive non-overlapping periods (1973-84 and 1984-96).[7] The use of a single growth rate mea-

[6] Belsley, Kuh, and Welsch (1980) suggest the following relationship between the condition index and multicollinearity: A condition index around 10 indicates that weak dependencies may be starting to affect the regression estimates. A condition index of 30 to 100 indicates moderate to strong collinearity. A condition index larger than 100 indicates that estimates may have a fair amount of numerical error. In this case, the statistical standard error is almost always much greater than the numerical error.

[7] The time periods are not overlapping in that the endpoint of the first 1984 is the starting point of the second. That is, the data from the 1984 calendar year is not included in both periods.

sured over a period of 12 or 13 years in each regression parallels that of Levine (1998) and others, and provides the advantages of smoothing out high-frequency intertemporal noise and mitigating the impact of outlier years in growth rates. While the endpoints of the first sample period are constrained by available data, several factors suggest that the empirical linkages may be different in these two periods. The structure of U.S. banking remained fairly stable during the first half with more than 14,000 banks nationwide from 1970 through 1986, followed by an almost linear decline to fewer than 10,000 banks by the end of 1996. Most of the decline was the result of mergers and acquisitions, though a precipitous rise in the number of bank failures (peaking in the years 1985-92) also contributed to the trend in the mid-1980s. A major wave of banking deregulation began in 1980 with the Depository Institutions Deregulation and Monetary Control Act, many provisions of which (such as the removal of ceilings on deposit interest rates) were phased in over a subsequent multi-year period. Other Federal laws that further deregulated various aspects of banking were passed during the 1980's. At the same time, many States relaxed their restrictions on bank branching, opening the door toward consolidation across local banking markets and permitting aggressive competition from more distant banks.

Sample Statistics and Correlations. We separate our sample into metropolitan and nonmetropolitan markets. Univariate statistics and pairwise correlations reveal several distinguishing characteristics of these markets. During the period 1981-96, annual growth in real per capita personal income was about 0.15 percent faster in nonmetropolitan markets (1.58 percent per year) than metropolitan areas (1.43 percent), on average. Longrun average growth in real per capita personal income was markedly faster in both metropolitan and nonmetropolitan markets from 1984-96 than it had been from 1973-84. In the earlier period, nonmetropolitan markets grew at barely 0.25 percent per year, while metropolitan markets grew about 1 percent per year. In the later period, average longrun growth increased to a bit over 1 percent per year in nonmetropolitan markets and to 1.4 percent per year in metropolitan markets. Note that longrun and shortrun average growth are not directly comparable as the former is a geometric mean of growth calculated over an extended time horizon, while the latter is an arithmetic mean of 1-year growth rates. About 25 percent of nonmetropolitan markets are defined by USDA as farm dependent and another 6 percent are defined as mining dependent.

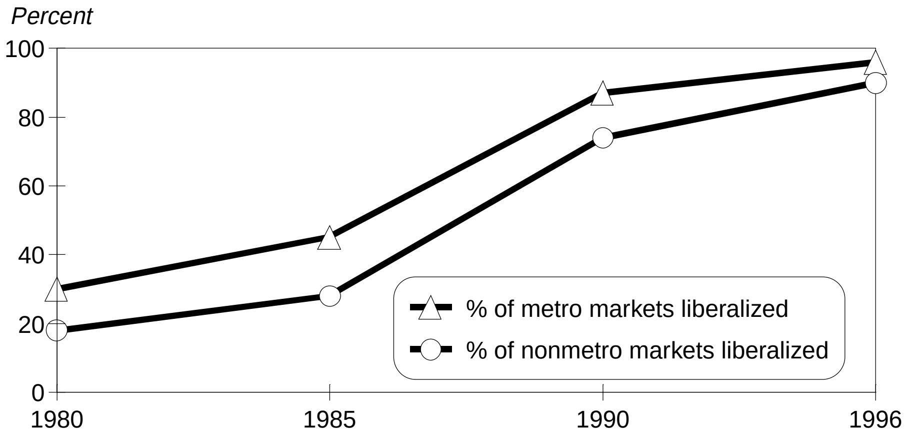
Compared with metropolitan markets, nonmetropolitan markets average far fewer bank offices (8 versus 152), higher market concentration (HHI of 0.4190 versus 0.1779), and far lower levels of total deposits ($159 million versus $6 billion). Standard deviations and coefficients of variation (ratios of the standard deviation to the mean) on these variables indicate that nonmetropolitan markets are more alike in both absolute and relative terms than are metropolitan markets, the latter being skewed by such megalopolises as New York, Los Angeles, and Chicago.

Nonmetropolitan markets have experienced geographic liberalization at a slower pace, and entry by nonlocal firms has been less likely after liberalization. Figure 1 graphs the rates of liberalization and entry into metropolitan and nonmetropolitan markets. The relatively slow rate of entry into nonmetropolitan markets has previously been documented by Amel and Liang (1992 and 1997) and is consistent with Calomiris's (1993) work on the political economy of geographic restrictions in banking. Despite these observations, control of local banking markets by out-of-market banks is surprisingly similar in nonmetropolitan and metropolitan markets: out-of-market banks controlled 27 percent of nonmetropolitan bank offices (versus 29 percent of metropolitan) and 26 percent of nonmetropolitan bank deposits (versus 28 percent of metropolitan).

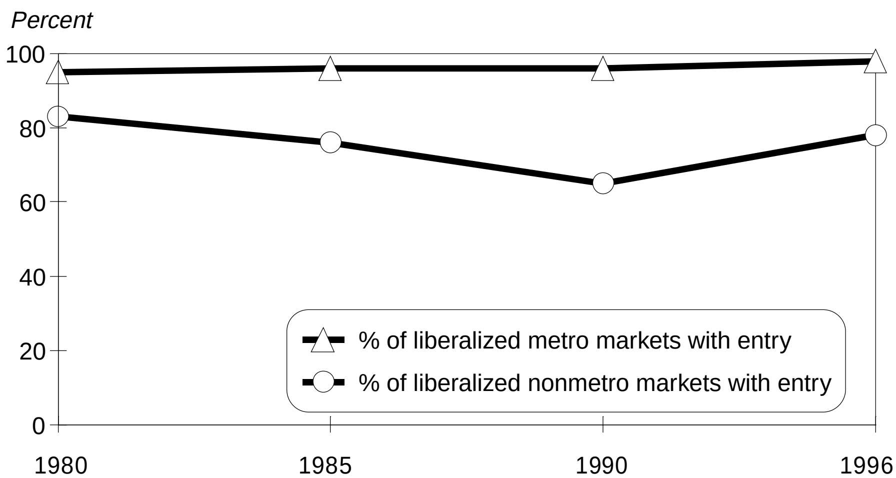
Striking differences between rural and urban pairwise correlations appeared in one or two instances. The correlation between the numbers of in-market and out-of-market owned bank offices is 0.01 in nonmetropolitan areas but 0.48 in metropolitan markets. That is, in-market and out-of-market office numbers often exhibit similar structures in metropolitan markets but not in nonmetropolitan markets. A corresponding contrast arises in in-market vs. out-of-market controlled deposits. Tables 2 and 3 present univariate statistics for our shortrun and longrun datasets, respectively.

Figure 1

A. Metropolitan banking markets liberalized earlier than nonmetropolitan banking markets, . . .



B. And nonlocal entry occurred sooner after liberalization in metropolitan banking markets, . . .



C. Leading to relatively fewer nonmetropolitan banking markets with nonlocally owned bank offices

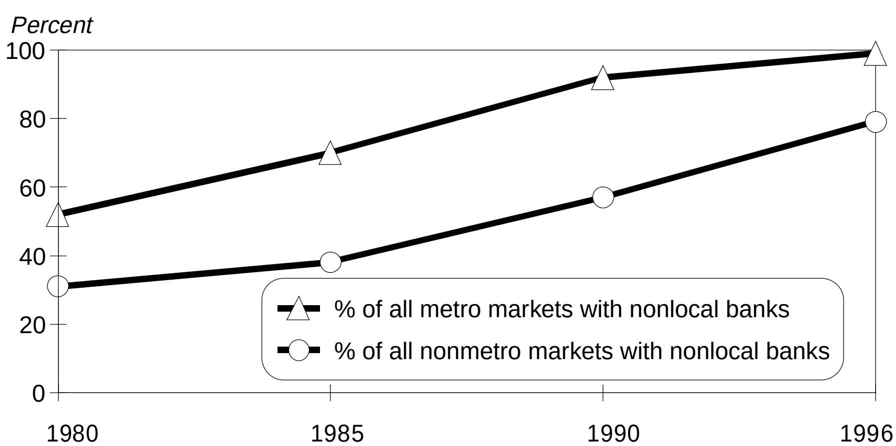


Table 2—Metro and nonmetro sample statistics for shortrun model variables, 1981-96

	Metro (4,272 observations)				Nonmetro (36,128 observations)			
Variable	Mean	Std Dev	Min.	Max.	Mean	Std Dev	Min.	Max.
Yt/Yt-1	1.0143	0.024	0.866	1.163	1.0158	0.074	0.453	4.097
NIB	118.02	281.899	0	3532	5.52	5.048	0	55
NXB	34.30	75.040	0	1113	2.36	4.175	0	49
IDEPS (in millions)	4,046	14,081	0	225,109	94	98	0	3,974
XDEPS (in millions)	781	2452	0	45,721	34	68	0	806
DMA	0.688	0.463	0	1	0.583	0.493	0	1
DNOVO	0.520	0.500	0	1	0.369	0.483	0	1
HHI	0.1779	0.0793	0.0265	0.8199	0.4190	0.2378	0.0737	1
Ratio of bank offices owned out-of-market	0.294	0.287	0	1	0.275	0.348	0	1
Ratio of local bank deposits controlled out-of-market	0.284	0.307	0	1	0.258	0.354	0	1

Table 3—Metro and nonmetro sample statistics for longrun model variables

	Nonmetro, 1973-84 (2,265 observations)				Nonmetro, 1984-86 (2,265 observations)			
Variable	Mean	Std Dev	Min.	Max.	Mean	Std Dev	Min.	Max.
GY	0.00248	0.0164	–0.1238	0.085	0.0108	0.0112	–0.0771	0.0563
NIB	4.710	4.178	0	42	5.822	5.1179	0	46
NXB	0.983	2.4917	0	22	1.795	3.884	0	31
XTB	0.167	0.3259	0	1	0.206	0.3365	0	1
DIB	1.853	3.1724	0	40	1.130	1.1289	0	18
DXB	3.369	11.5616	0	230	12.242	20.9597	0	210
DDEP	0.042	0.183	–1	1	0.191	0.2892	–1	1
DPC	2.32	1.0421	0	7.2305	6.450	3.2101	0	30.5946
LEDU	–2.8255	0.4136	–4.5254	–1.0188	–2.3462	0.3538	–3.467	–0.773
LPOP	9.5292	0.9214	5.6699	11.9975	9.6248	0.9424	4.4659	11.9893
LRPCPI	2.2593	0.2701	1.4106	3.3028	2.2862	0.2015	1.2832	3.3722
HHI	0.4727	0.261	0.0799	1	0.4404	0.2407	0.0784	1
FM	0.245	0.4302	0	1	0.245	0.4299	0	1
MI	0.064	0.2448	0	1	0.064	0.2448	0	1
	Metro, 1973-84 (260 observations)				Metro, 1984-96 (264 observations)			
Variable	Mean	Std Dev	Min.	Max.	Mean	Std Dev	Min.	Max.
GY	0.00982	0.00657	–0.00798	0.034	0.0141	0.00589	–0.00946	0.0282
NIB	54.404	73.244	0	526	97.693	181.898	0	1365
NXB	8.173	19.416	0	139	20.655	38.638	0	261
XTB	0.151	0.274	0	1	0.222	0.289	0	1
DIB	3.429	9.546	0	100	4.218	8.704	0	69.667
DXB	30.754	99.440	0	820	60.345	142.852	0	1190
DDEP	0.0723	0.1568	–0.1396	0.7123	0.2179	0.245	–0.296	0.872
DPC	2.365	0.6608	0.8858	4.5108	5.6113	2.162	1.790	23.736
LEDU	–2.2715	0.3263	–2.9786	–1.177	–1.8785	0.2988	–2.5582	–0.953
LPOP	12.3689	0.9331	10.5125	14.9283	12.5807	1.0172	11.0938	15.9106
LRPCPI	2.3563	0.1484	1.7523	2.7274	2.4663	0.1547	1.8062	3.0278
HHI	0.2203	0.0935	0.0456	0.5646	0.1957	0.0789	0.0403	0.4872