Small Business Bank Lending: Both Sides are Winners

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SMALL BUSINESS BANK LENDING: BOTH SIDES ARE WINNERS

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by

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and

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*This paper represents a draft of work in progress by the authors and is being sent to you for information and review. Responsibility for the contents rests solely with the authors. This working paper may not be reproduced or distributed without the written consent of the authors. Please address all correspondence to Neil C. Churchill.
There is considerable speculation in the aftermath of bank "deregulation" concerning the ability of small firms to access credit markets due to the growing dominance of bank holding companies into which smaller and local banks are rapidly being merged. If, in fact, these developments limit the accessibility of first-level credit financing to small and start-up businesses, then the creation, development, and growth of small enterprises and the vitality they bring to the economy through job creation and innovation could be severely constrained. If, on the other hand, large banks or holding-company-affiliated banks have profitable small business loan activities, then the concern over limited access by small businesses to bank credit is greatly reduced. Further, if these small business loan activities are more profitable than loans to large corporations, then credit availability for small companies might, indeed, increase.

This study addresses the issue of bank loan availability to small companies by examining the profitability of bank lending to large and to small businesses. The site for the research is the large, metropolitan-based lead bank of one large bank holding company in the Sunbelt.

The study began with an examination of the "conventional wisdom" that surrounds this topic. This "wisdom" suggested that:

1. Lending to small businesses is riskier than lending to large businesses;
2. Administering small business loans is costlier than administering large business loans;
3. Interest rates charged on small business loans are higher than the rates charged to large businesses;
4. Small businesses have a higher ratio of deposits to loans than do large companies; and
5. Overall, small business loans are less profitable than large business loans.

The results of the study indicate that:

- Small business loans are indeed riskier and cost more to administer than large company loans;
- Small business loans indeed do bear a higher interest rate than large company business loans but not by enough to cover the costs and risks;
- Small business loans are, however, more profitable than large business loans but only because the bank makes considerably more income on the (relatively) larger customer deposits.
These results are discussed in more detail following the section on methodology. The basic conclusions from this research are:

1. The interest rate differential on small business loans is not out of line with the administrative costs and risks of such loans. Indeed, it is not sufficient to cover the differential in risk and administrative cost.

2. The deposits of small business customers, however, provide the bank with more than enough income to offset these cost differences.

3. Those small businesses which manage their cash very carefully seem to be getting a bargain — to the extent they are charged the average of small business interest rates.

4. In numbers:

<table>
<thead>
<tr>
<th>Differential Effect of Administrative Costs and Risks</th>
<th>- 1.32 percentage pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cost Differentials</td>
<td>- 0.17 percentage pts.</td>
</tr>
<tr>
<td>Differential Loan Profitability*/</td>
<td>+ 0.24 percentage pts.</td>
</tr>
<tr>
<td>Cost Disadvantage to Bank</td>
<td>- 1.25 percentage pts.</td>
</tr>
<tr>
<td>Differential Income on Deposits</td>
<td>+ 4.02 percentage pts.</td>
</tr>
<tr>
<td>Overall (Pre-tax) Differential Profitability of Small Business Loans</td>
<td>+ 2.77 percentage pts.</td>
</tr>
</tbody>
</table>

While there are obvious limitations to the generalizability of any one-bank study, we believe that the results are not inapplicable to small business lending in general. Further, the study has provided the basis for additional broader-based research.

Methodology

Procedure

The bank selected for initial analysis was chosen primarily because it had a cost accounting system which separated costs and revenues associated with small business loans from those associated with loans to large businesses.

*/ Includes an interest rate differential of approximately +0.61 percentage points.
Loans to "small" and "middle market" businesses* were managed by a division of the bank, which we have termed the Small Business Division. Loans to large businesses were the responsibility of two other divisions — the Large Business Division I and the Large Business Division II, which lend to large corporations (the distinction between the two is essentially geographical). All three divisions are accounted for as separate profit centers.

The first phase of the research consisted of interviews with Division heads to obtain an understanding of the operating policies of the bank and with representatives of the accounting, financial planning, and credit policy areas in order to understand the accounting and customer profitability systems.

The second phase was an analysis of the profitability of the three bank divisions. The focus of the research was on four questions:

1. What are the distinguishing features of small business lending versus other types of commercial lending?
2. What are the cost and revenue components of small business lending?
3. What degree of risk is attached to small business loans compared to loans to large companies?
4. What is the overall profitability of small business lending?

For this purpose income statements for the divisions for the three-year period 1981 through 1983 were used. This was the maximum time period for which the current divisional structure and accounting system had been in place. It also encompassed a period of varied economic conditions in which the long-run profitability of different types of loans was tested.

Data Used

The income statements of the three divisions provided a number of financial figures for the three-year period. For many of these items a three-year average was computed for each division to even out year-to-year fluctuations due to changing economic conditions. In addition, the Large Business Divisions I and II were combined to form one Large Business Division (LBD) to facilitate comparisons with the Small Business Division (SBD). Results of the analysis of the three-year averages are shown in Exhibit 1. The actual dollar amounts have been disguised by indexing them to an assumed total asset base for the three divisions of 500. For clarity in exposition we refer to all these financial (indexed) numbers as though they were in millions of dollars. From Exhibit 1 we can see that small business loans were about one-quarter the

* Business up to $50 million in sales.
dollar amount of domestic loans in the combined large business divisions (LBD) — see the ratios of the SBD relative to the LBD in the far right column of the exhibit. This large difference in total dollar amounts between the Small Business Division and the two Large Business Divisions is accounted for primarily by loan size. While the SBD had two and one-quarter times the number of loans of the LBDs, the average size loan was approximately $200,000 for the SBD and $3.5 million for the LBDs. The range was from $1,000 to $5.5 million for the SBD and from $4,500 to $95 million for the LBDs.

Results

Distinguishing Features of Small Business Loans

Several distinguishing characteristics of small business loan relationships versus large business ones are apparent in Exhibit 1:

- **% Spread on Domestic Loans** — The % spread (total interest accrued [earned] divided by the average size of the loan portfolio minus the bank's cost of funds) is 2.29% for the SBD, compared with 1.51% for the LBDI, 1.91% for the LBDII and 1.68% for the two combined — the LBD. These 61 basis points represent a third higher spread for the Small Business Division than for the LBD.

- **Net Interest Income as a % Assets */** — the SBD has more than twice the income ratio of the LBD — 8% versus 3.75%.

- **Direct Expenses as a % Assets and as a % Net Interest Income /** — both are significantly higher for the SBD than for either the LBDI or the LBDII. Expressed as a percent of assets, these expenses are almost three times as high; expressed as a percent of net interest income, they are 35% greater.

- **Net Interest Income minus Direct Expense as a % Assets** (a "contribution" approach to the loan function) — the SBD is twice the two LBDs taken together.

- **Loan Losses and Loan Losses as a % Assets** — Dollar losses were over twice as high for the SBD as for the LBDs. When expressed as a percentage of assets, SBD loan losses were almost ten times greater.

*/* Assets are the dollar amounts of loans in the Division.

/** Direct Expenses are those costs associated directly with the loan function itself; i.e., salaries (both loan officer and support personnel), benefits, other support functions (e.g., telephone, postage, xerox), including a net occupancy charge.
-5-

- Customer Support Charges */ -- The SBD receives over one and one-half the charges of the LBDs when related to assets. When related to deposits, however, the charges for the SBD are only a little over a third of those for the LBDs.

- Average Usable Deposits as a % Assets -- the SBD has about four and one-third times the deposits of the LBDs. These are made up of five and one-half times the time deposits and a little over three times the demand deposits.

- Return on Assets -- on both pre-tax and after-tax ROAs the SBD has 187% of the returns of the LBDs -- with negligible differences due to loan losses.

Graphical representations of several of these relationships are given in Figures 1 to 4.

The above analyses raise some interesting observations with regard to our "conventional wisdom" hypotheses stated earlier:

1. The Direct Expense relationship supports the often-made allegation that small business loans are more costly to administer.

2. The Loan Loss data indicate that small business loans seem to be riskier than large business loans.

3. The Deposit relationship strongly supports the hypothesis that small business customers have larger deposits and more profitable deposit relationships than large business customers. In addition, the Customer Support Charge data indicate that large companies use the bank's services proportionally less compared to their loan balances -- but more compared to their deposits.

4. However, the hypothesis of lower overall profitability for small business loans is, according to our findings, clearly in error.

Profitability

The returns on assets for the three divisions (the Small Business Division and the two Large Business Divisions) for three years (1981 to 1983) are shown in Figure 5. While the SBD shows a much higher return in both 1981 and 1982, the return in 1983 is almost equal to that of the LBDI and only slightly higher than that of the LBDII -- mostly the result of four large loan write-offs in the Small Business Division for 1983. However, as we have seen earlier (Exhibit 1), an average for the three years shows the profitability in relation

*/ Customer Support Charges are those expenses generated by customer use of bank services; e.g., check processing and other operational functions performed in support of the customer relationship.
to assets of the SBD at 3.2% as compared to 1.8% for the LBDI and 1.5% for the LBDII. This is certainly a significant difference, and occurs in spite of higher risk and the higher costs of administering loans. To understand this result better, we looked more closely at the components of risk, cost, and the deposit relationship.

Risk

To analyze risk we examined two separate indications of loss exposure: loans recognized as losses during the three years and "non-performing loans"* at the end of 1983 -- see Exhibit 2.

**Loan Losses** -- Loan losses as a percent of assets are shown for the three divisions for 1981-1983 in Figure 6. Over the three years, loan losses as a percent of assets for the SBD were almost ten times as high as for the LBDs.

**Non-Performing Loans** -- In non-performing loans the SBD fared much better compared to the two large business divisions. While the SBD had, on average, 23% of the assets of the LBDs during the three-year period, it had only 15% of the non-performing loans at 12-31-83. In addition, the ratio of non-performing loans to assets for the SBD was only two-thirds that of the LBDs.

The differences in the loan loss and non-performing loan numbers raised the question of whether the bank was either more prone to, or more compelled to, write-off loans to small businesses than it did loans to large businesses.

To address this question we acquired data (also in Exhibit 2) on the allocation of the loss reserve at year-end 1983; i.e., projected losses for 1984 at the end of the 1983. These data show the range of projected losses in the "most likely"** case to be about a third higher for the SBD than for the LBDs (quite small in dollars), but only one-fifth as much in the "worst case" -- $1.68 million for the LBDI, $0.73 million for the LBDII, and $0.46 million for the SBD. These dollar amounts translate into:

**Projected Loan Losses as a % of Current Non-Performing Loans** -- in the "most likely" case 3.0% for the SBD compared with .31% for the LBDs (.50% for the LBDII and 0% for the LBDI) or 10 times the loss exposure, and in

* Non-performing loans fall into three categories: non-accrual of interest status, renegotiated term status, and an other asset category where collateral has been called in.

** The "most likely" and "worst case" projections are made quarterly on a formal basis and monthly on an informal basis. The "most likely" category is the best estimate the bank can make of the loss the bank will ultimately experience on the loan. The "worst case" estimate is what the bank will lose if "everything goes wrong" with the loan -- business, industry, and the economy.
the "worst case" 27% for the SBD versus 18.5% for the LBDs (41% and 8% for the LBDI and the LBDII, respectively) or about one and one-half times the loss exposure.

Projected Loan Losses as a % Assets -- in the "most likely" case.06% for the SBD compared with .01% for the LBDs (.02% for the LBDII and 0% for the LBDI) and in the "worst case" 0.48% for the SBD compared to 0.49% for the LBDs (0.54% for the LBDI and 0.40% for the LBDII) -- virtually no difference.

To obtain a stronger measure of overall loss performance for the three-year period we added the loss estimates at the end of 1983 to the losses recognized in each of the three years. The reasoning for this was that loan losses occur because of company performance in periods prior to the bank's write-off. Since few losses were recognized in 1981, and since the period of adverse economic conditions existed in the two later years, we added 1984 projected loss exposure to the actual losses for the three years. Average loss performance was calculated by dividing this figure by three, thus spreading the year-end exposure over the prior three years. This was done for both the "most likely" and "worst" cases -- See Exhibit 3.

As seen in the exhibit, the resulting total dollar "loan loss" for the SBD is higher in the "most likely" case and lower in the "worst case." Relating these losses to the average loans (assets) outstanding over the three-year period, we find the total loss for the SBD to be significantly higher than for the LBDs in both the "most likely" and the "worst" cases -- 9.4 times and 2.7 times, respectively.

If we put this loss performance on a loss-per-year basis and relate it to assets, the loan loss becomes, in the "most likely" case, 0.05% of assets for the LBDs and 0.51% for the SBD; in the "worst case" it is 0.25% and 0.65%, respectively -- a difference of 46 basis points in the "most likely" case and 40 basis points in the "worst" case.

These results clearly indicate that the cost of risk for small business loans is higher than for large business loans. Thus one would expect interest rates to reflect this cost difference.

Costs of Small Business Loans

Bankers maintain that, in addition to higher risk, a higher interest rate is justified for small business loans because of the relatively high cost involved in administering them relative to the loan amount. The data support both of these contentions. The question then becomes not "Are higher rates justified?" but rather, "How much higher should loan rates be?" We have attempted to obtain at least a preliminary answer to this question by looking at several calculations which relate cost, profitability, and risk to assets -- since it is to assets (the loan balances) that interest rates are applied:
• **Direct Expenses as a % Assets** (cost of loan function)

• **Net Customer Support cost as a % Assets** (costs assigned to the divisions based on necessary customer services net of income deriving from customer transactions — non-interest income in the bank's accounting system terminology)

• **Loan Losses as a % Assets and Total Loss Performance per Year as a % Assets** (risk measures)

• **% Spread on Domestic Loans** (a profitability measure)

These are shown in Exhibit 4.

The figures in Exhibit 4 show that, from an internal cost standpoint, the bank could conceivably justify an interest rate differential of 88 basis points on loans to small businesses relative to large business loans — 50 basis points due to direct expenses and 38 due to the cost of customer support. When risk is included, an additional 26 to 60 basis point spread is added depending on the parameters selected.*/ This means that an interest rate for small business loans of between 1.14 to 1.48 percentage points higher than that for large business loans could be justified on the basis of cost and risk factors. Since the actual spread for domestic loans for the bank in question differs by only .61 percentage points **/, on the surface it appears that interest rates are quite fair to small business borrowers. This conclusion, however, ignores the relative profitability of the deposit relationships generated by small business customers.

**Deposit Relationships**

An examination of the deposit relationships of large and small businesses with the bank, Exhibit 5, shows average deposit income (after subtraction of reserve requirements and interest paid depositors) for each division for the years 1981-83. The spread on deposit interest for the bank's demand deposits is 5.18% of assets for the Small Business Division compared with 1.59% for the combined large business divisions — a difference of 3.59%. For time deposits the difference is much smaller — 0.56% for the SBD compared with 0.14% for the LBDs — a spread of 0.43%.

*/ Comparing the SBD "worst case" to the "most likely" case for the LBDs results in a difference of 0.60%; comparing the SBD "most likely" case to the LBD "worst case" yields 0.26%. Thus the range is 0.26% to 0.60%.

**/ This is only a rough indicator of the difference in interest rates as it includes some effects of non-performing loans (e.g., non-accruals). Interest rates per se will be examined more fully in a follow-on research project.
Considering both demand and time deposits, the SBD generates $5.3 million in income on deposits of customers who have assets (loans) of $92 million, while the large business divisions have only $7.0 million of deposit income on assets of $408 million. This is a difference of 4.02% when related to their loan dollars. While the total interest spread between the SBD and the LBD is 4.26% — Net Interest Income as a percent Assets (Exhibit 5) — almost all of it (4.02%) comes from the deposit relationships. This result clearly supports the hypothesis that small businesses provide the bank with profitable deposits. Part of the spread could well be due to compensating balance requirements. We were unable to come up with definitive differences on this between large and small businesses for two reasons. First, many compensating balance agreements — even for small borrowers — are not in writing, but represent instead a form of "understanding" between the borrower and the loan officer. Second, large corporations often request that fees for services rendered be substituted for compensating balance requirements. These fee differences showed up in our analysis.

Summary and Conclusions

When the benefits of the deposit relationship (Exhibit 5) are added to the cost and risk factors of the loan relationship (Exhibit 4), we can conclude that the profitability of small business loans is significantly greater than large business loans because:

- It costs banks somewhere in the neighborhood of 1.3 percentage points more to loan to small businesses than large ones because of risks and administrative costs.
- It benefits banks somewhere around 4.0 percentage points because of the differential between small business and large business deposits based on loan size.
- The net effect of these three factors is that pre-tax earnings on small business loans are 2.7 percentage points higher than on large business loans.

These results are shown more fully in Exhibit 6 and are displayed graphically in Figure 7.

*/ These interest spreads may be skewed upward because of the high interest rates prevailing during the period studied. The difference of 0.24% between the 4.26% and the 4.02% is explained in Exhibit 6 and Figure 7.
In summary, this first study appears to confirm three widespread notions about bank lending to small businesses -- that making small business loans is (a) costlier and (b) riskier than making loans to large businesses, but that (c) it produces more deposits. It shows, however, that contrary to what many believe, small business loans are more profitable than those to large businesses. When all the costs and revenues from lending and providing bank services are combined with the profitable deposit relationships, small business lending becomes a very attractive source of income for large banks.
Notes

1 According to The State of Small Business: Report of the President to the Congress (March 1983), small firms provide 2.5 times the innovations of large firms, and time from establishment of performance criteria to market introduction is 2.22 years for small firms compared with 3.05 years for large ones. The 1984 Report states that small business also is leading the way in job creation during the economic recovery, showing a net employment gain of 2.6% between September 1982 and September 1983 compared with a net gain of only 1.2% for large businesses. Small businesses now employ 47.8% of the private nonfarm workforce in the U.S., contribute 42% of the sales dollars, and generate approximately 38% of GNP.

### Exhibit 1

#### Three-Year Average 1981-83

<table>
<thead>
<tr>
<th></th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Domestic Loans</td>
<td>212.75</td>
<td>164.10</td>
<td>376.84</td>
<td>92.08</td>
<td>0.24</td>
</tr>
<tr>
<td>% Spread Dom. Loans</td>
<td>1.51%</td>
<td>1.91%</td>
<td>1.66%</td>
<td>2.29%</td>
<td>1.36</td>
</tr>
<tr>
<td>% Dom. Loans Match-Funded (83)</td>
<td>26.20%</td>
<td>24.06%</td>
<td>25.42%</td>
<td>0.09%</td>
<td>0.00</td>
</tr>
<tr>
<td>Net Interest Income</td>
<td>8.98</td>
<td>6.31</td>
<td>15.29</td>
<td>7.37</td>
<td>0.48</td>
</tr>
<tr>
<td>Net Int. Inc. as % Assets</td>
<td>3.94%</td>
<td>3.50%</td>
<td>3.75%</td>
<td>8.00%</td>
<td>2.14</td>
</tr>
<tr>
<td>Fees on Loans</td>
<td>0.33</td>
<td>0.23</td>
<td>0.57</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Fees as % Assets</td>
<td>0.15%</td>
<td>0.13%</td>
<td>0.14%</td>
<td>0.01%</td>
<td>0.08</td>
</tr>
<tr>
<td>Total Direct Expenses</td>
<td>0.66</td>
<td>0.42</td>
<td>1.08</td>
<td>0.71</td>
<td>0.65</td>
</tr>
<tr>
<td>Dir. Exp. as % Assets</td>
<td>0.29%</td>
<td>0.24%</td>
<td>0.27%</td>
<td>0.77%</td>
<td>2.89</td>
</tr>
<tr>
<td>Dir. Exp. as % Net Int. Inc.</td>
<td>7.36%</td>
<td>6.71%</td>
<td>7.09%</td>
<td>9.60%</td>
<td>1.35</td>
</tr>
<tr>
<td>Net Int. Inc.-Dir. Expenses</td>
<td>8.32</td>
<td>5.89</td>
<td>14.21</td>
<td>6.66</td>
<td>0.47</td>
</tr>
<tr>
<td>NII-DE as % Assets</td>
<td>3.65%</td>
<td>3.27%</td>
<td>3.48%</td>
<td>7.24%</td>
<td>2.08</td>
</tr>
<tr>
<td>Loan Losses (Recoveries)</td>
<td>0.04</td>
<td>0.17</td>
<td>0.21</td>
<td>0.45</td>
<td>2.18</td>
</tr>
<tr>
<td>Loan Losses as % Assets</td>
<td>0.02%</td>
<td>0.09%</td>
<td>0.05%</td>
<td>0.49%</td>
<td>9.65</td>
</tr>
<tr>
<td>Customer Support Charges</td>
<td>1.16</td>
<td>0.35</td>
<td>1.50</td>
<td>0.53</td>
<td>0.35</td>
</tr>
<tr>
<td>Cust. Supp. as % Assets</td>
<td>0.51%</td>
<td>0.19%</td>
<td>0.37%</td>
<td>0.58%</td>
<td>1.57</td>
</tr>
<tr>
<td>Cust. Supp. as % Usable Deposits</td>
<td>1.90%</td>
<td>0.86%</td>
<td>1.49%</td>
<td>0.53%</td>
<td>0.36</td>
</tr>
<tr>
<td>General Support Charges</td>
<td>0.28</td>
<td>0.28</td>
<td>0.56</td>
<td>0.28</td>
<td>0.51</td>
</tr>
<tr>
<td>Gen. Supp. as % Assets</td>
<td>0.12%</td>
<td>0.15%</td>
<td>0.14%</td>
<td>0.31%</td>
<td>2.25</td>
</tr>
<tr>
<td>Avg. Usable Demand Deposits</td>
<td>33.91</td>
<td>17.39</td>
<td>51.30</td>
<td>36.72</td>
<td>0.72</td>
</tr>
<tr>
<td>Demand Dep. as % Assets</td>
<td>14.89%</td>
<td>9.65%</td>
<td>12.58%</td>
<td>39.87%</td>
<td>3.17</td>
</tr>
<tr>
<td>Avg. Usable Time Deposits</td>
<td>26.88</td>
<td>23.10</td>
<td>49.98</td>
<td>62.97</td>
<td>1.26</td>
</tr>
<tr>
<td>Time Dep. as % Assets</td>
<td>11.81%</td>
<td>12.81%</td>
<td>12.25%</td>
<td>68.38%</td>
<td>5.58</td>
</tr>
<tr>
<td>Tot. Avg. Usable Deposits</td>
<td>60.79</td>
<td>40.49</td>
<td>101.28</td>
<td>99.69</td>
<td>0.98</td>
</tr>
<tr>
<td>Total Deposits as % Assets</td>
<td>26.70%</td>
<td>22.46%</td>
<td>24.83%</td>
<td>108.26%</td>
<td>4.36</td>
</tr>
<tr>
<td>Non-Interest Income</td>
<td>0.83</td>
<td>0.19</td>
<td>1.02</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Non-Int. Inc. as % Cust. Support</td>
<td>72.08%</td>
<td>54.46%</td>
<td>68.01%</td>
<td>13.74%</td>
<td>0.20</td>
</tr>
<tr>
<td>Profit Cont. bef. Tax and LL</td>
<td>7.71</td>
<td>5.45</td>
<td>13.17</td>
<td>5.92</td>
<td>0.45</td>
</tr>
<tr>
<td>Cont. to Profit before Tax</td>
<td>7.68</td>
<td>5.28</td>
<td>12.96</td>
<td>5.47</td>
<td>0.42</td>
</tr>
<tr>
<td>Cont. to Profit after Tax</td>
<td>4.15</td>
<td>2.85</td>
<td>7.00</td>
<td>2.95</td>
<td>0.42</td>
</tr>
<tr>
<td>Total Assets</td>
<td>227.68</td>
<td>180.24</td>
<td>407.92</td>
<td>92.08</td>
<td>0.23</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>1.82%</td>
<td>1.58%</td>
<td>1.72%</td>
<td>3.21%</td>
<td>1.87</td>
</tr>
<tr>
<td>Pretax ROA</td>
<td>3.37%</td>
<td>2.93%</td>
<td>3.18%</td>
<td>5.94%</td>
<td>1.87</td>
</tr>
<tr>
<td>ROA bef. Tax &amp; Loan Losses</td>
<td>3.39%</td>
<td>3.03%</td>
<td>3.23%</td>
<td>6.43%</td>
<td>1.99</td>
</tr>
</tbody>
</table>

**NOTE:** All non-percent figures are dollars indexed to a total asset base for the three divisions of 500.
### Exhibit 2
#### Non-Performing Loan and Loan Loss Data
**LBDI, LBDII, and SBD**

<table>
<thead>
<tr>
<th>Year</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td>310.02</td>
<td>179.94</td>
<td>489.96</td>
<td>97.17</td>
<td>0.20</td>
</tr>
<tr>
<td>Non-Perform. Loans</td>
<td>4.14</td>
<td>8.88</td>
<td>13.02</td>
<td>1.70</td>
<td>0.13</td>
</tr>
<tr>
<td>Loan Losses</td>
<td>0.11</td>
<td>0.51</td>
<td>0.62</td>
<td>0.95</td>
<td>1.55</td>
</tr>
<tr>
<td>Non-Perform. Loans/Assets</td>
<td>1.33%</td>
<td>4.93%</td>
<td>2.66%</td>
<td>1.75%</td>
<td>0.66</td>
</tr>
<tr>
<td>Loan Losses/Assets</td>
<td>0.04%</td>
<td>0.28%</td>
<td>0.13%</td>
<td>0.98%</td>
<td>7.81</td>
</tr>
<tr>
<td>Allocation of Loss Reserve:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.00</td>
<td>0.04</td>
<td>0.04</td>
<td>0.05</td>
<td>1.33</td>
</tr>
<tr>
<td>Worst Case</td>
<td>1.68</td>
<td>0.73</td>
<td>2.41</td>
<td>0.46</td>
<td>0.19</td>
</tr>
<tr>
<td>Loss Exposure/Non-Perform. Loans:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.00%</td>
<td>0.46%</td>
<td>0.31%</td>
<td>3.20%</td>
<td>10.21</td>
</tr>
<tr>
<td>Worst Case</td>
<td>40.55%</td>
<td>8.20%</td>
<td>18.49%</td>
<td>27.17%</td>
<td>1.47</td>
</tr>
<tr>
<td>Loss Exposure/Assets:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.00%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.06%</td>
<td>6.72</td>
</tr>
<tr>
<td>Worst Case</td>
<td>0.54%</td>
<td>0.40%</td>
<td>0.49%</td>
<td>0.48%</td>
<td>0.97</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td>223.74</td>
<td>185.96</td>
<td>409.69</td>
<td>101.45</td>
<td>0.25</td>
</tr>
<tr>
<td>Non-Perform. Loans</td>
<td>0.00</td>
<td>1.78</td>
<td>1.78</td>
<td>0.55</td>
<td>0.31</td>
</tr>
<tr>
<td>Loan Losses</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.37</td>
<td>172.00</td>
</tr>
<tr>
<td>Non-Perform. Loans/Assets</td>
<td>0.00%</td>
<td>0.96%</td>
<td>0.43%</td>
<td>0.54%</td>
<td>1.25</td>
</tr>
<tr>
<td>Loan Losses/Assets</td>
<td>.00%</td>
<td>.00%</td>
<td>.00%</td>
<td>.37%</td>
<td>694.57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td>149.28</td>
<td>174.82</td>
<td>324.10</td>
<td>77.63</td>
<td>0.24</td>
</tr>
<tr>
<td>Non-Perform. Loans</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>NA</td>
</tr>
<tr>
<td>Loan Losses</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>-15.00</td>
</tr>
<tr>
<td>Non-Perform. Loans/Assets</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>NA</td>
</tr>
<tr>
<td>Loan Losses/Assets</td>
<td>.00%</td>
<td>.00%</td>
<td>.00%</td>
<td>.02%</td>
<td>-62.62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-1983 Average</td>
<td>227.68</td>
<td>180.24</td>
<td>407.92</td>
<td>92.08</td>
<td>0.23</td>
</tr>
<tr>
<td>Total Assets</td>
<td>1.38</td>
<td>3.55</td>
<td>4.93</td>
<td>0.75</td>
<td>0.15</td>
</tr>
<tr>
<td>Non-Perform. Loans</td>
<td>0.04</td>
<td>0.17</td>
<td>0.21</td>
<td>0.45</td>
<td>2.18</td>
</tr>
<tr>
<td>Loan Losses</td>
<td>0.61%</td>
<td>1.97%</td>
<td>1.21%</td>
<td>0.82%</td>
<td>0.67</td>
</tr>
<tr>
<td>Loan Losses/Assets</td>
<td>0.02%</td>
<td>0.09%</td>
<td>0.05%</td>
<td>0.49%</td>
<td>9.66</td>
</tr>
</tbody>
</table>

**NOTE:** All non-percent figures are dollars indexed to an average total asset base for the three divisions of 500.
Exhibit 3

Aggregated Loss Performance

<table>
<thead>
<tr>
<th></th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD/LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981 Loan Losses</td>
<td>.00</td>
<td>0.00</td>
<td>.00</td>
<td>0.02</td>
<td>15.00</td>
</tr>
<tr>
<td>1982 Loan Losses</td>
<td>.00</td>
<td>0.00</td>
<td>.00</td>
<td>0.37</td>
<td>172.00</td>
</tr>
<tr>
<td>1983 Loan Losses</td>
<td>0.11</td>
<td>0.51</td>
<td>0.62</td>
<td>0.95</td>
<td>1.55</td>
</tr>
<tr>
<td>Future Loss Exposure:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.00</td>
<td>0.04</td>
<td>0.04</td>
<td>0.05</td>
<td>1.33</td>
</tr>
<tr>
<td>Worst Case</td>
<td>1.68</td>
<td>0.73</td>
<td>2.41</td>
<td>0.46</td>
<td>0.19</td>
</tr>
<tr>
<td>Total Loss Performance:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.11</td>
<td>0.55</td>
<td>0.66</td>
<td>1.40</td>
<td>2.13</td>
</tr>
<tr>
<td>Worst Case</td>
<td>1.79</td>
<td>1.24</td>
<td>3.02</td>
<td>1.81</td>
<td>0.60</td>
</tr>
<tr>
<td>Total Loss Performance/Avg. Assets for the Period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.05%</td>
<td>0.30%</td>
<td>0.16%</td>
<td>1.52%</td>
<td>9.42</td>
</tr>
<tr>
<td>Worst Case</td>
<td>0.78%</td>
<td>0.69%</td>
<td>0.74%</td>
<td>1.96%</td>
<td>2.65</td>
</tr>
<tr>
<td>Total Loss Performance per Year*/Average Assets for the Period:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most Likely</td>
<td>0.02%</td>
<td>0.10%</td>
<td>0.05%</td>
<td>0.51%</td>
<td>9.42</td>
</tr>
<tr>
<td>Worst Case</td>
<td>0.26%</td>
<td>0.23%</td>
<td>0.25%</td>
<td>0.65%</td>
<td>2.65</td>
</tr>
</tbody>
</table>

*Three years is assumed taking the more conservative measure of loss per year.

NOTE: All non-percent figures are dollars indexed to a total asset base for the three divisions of 500.
### Factors Affecting Loan Pricing

<table>
<thead>
<tr>
<th>LOAN COST FACTORS:</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD minus LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Exp. as % Assets</td>
<td>0.29%</td>
<td>0.24%</td>
<td>0.27%</td>
<td>0.77%</td>
<td>0.50%</td>
</tr>
<tr>
<td>Net Customer Support Costs* as a % Assets</td>
<td>0.14%</td>
<td>0.09%</td>
<td>0.12%</td>
<td>0.50%</td>
<td>0.38%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOAN RISK FACTORS:</th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD minus LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Loan Loss as % Assets</td>
<td>0.02%</td>
<td>0.09%</td>
<td>0.05%</td>
<td>0.49%</td>
<td>0.44%</td>
</tr>
</tbody>
</table>

Total Loss Performance per Year as a % Assets:*

- Most Likely: 0.02% 0.10% 0.05% 0.51% 0.45%
- Worst Case: 0.26% 0.23% 0.25% 0.65% 0.41%

% Spread Domestic Loans: 1.51% 1.91% 1.68% 2.29% 0.61%

---

*Customer Support costs (charges) net of related Non-Interest Income

**Total Loss Performance per Year/Assets from Exhibit 3
### Exhibit 5

**Deposit Income**

**Three-Year Average 1981-83**

<table>
<thead>
<tr>
<th></th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD minus LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Interest Spread on Demand Deposits</strong></td>
<td>4.17</td>
<td>2.31</td>
<td>6.48</td>
<td>4.77</td>
<td>-1.71</td>
</tr>
<tr>
<td><strong>Net Interest Spread on Time Deposits</strong></td>
<td>0.44</td>
<td>0.12</td>
<td>0.56</td>
<td>0.52</td>
<td>-0.04</td>
</tr>
<tr>
<td><strong>Combined Net Interest Spreads on Deposits</strong></td>
<td>4.61</td>
<td>2.43</td>
<td>7.04</td>
<td>5.28</td>
<td>-1.75</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>227.68</td>
<td>180.24</td>
<td>407.92</td>
<td>92.08</td>
<td>-315.84</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>LBDI</th>
<th>LBDII</th>
<th>LBD</th>
<th>SBD</th>
<th>SBD minus LBD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Interest Spread on Demand Dep. as % Assets</strong></td>
<td>1.83%</td>
<td>1.28%</td>
<td>1.59%</td>
<td>5.18%</td>
<td>3.59%</td>
</tr>
<tr>
<td><strong>Net Interest Spread on Time Dep. as a % Assets</strong></td>
<td>0.19%</td>
<td>0.07%</td>
<td>0.14%</td>
<td>0.56%</td>
<td>0.43%</td>
</tr>
<tr>
<td><strong>Combined Net Interest Spreads on Deposits as a % Assets</strong></td>
<td>2.02%</td>
<td>1.35%</td>
<td>1.72%</td>
<td>5.74%</td>
<td>4.02%</td>
</tr>
<tr>
<td><strong>Net Interest Income as a % Assets</strong></td>
<td>3.94%</td>
<td>3.50%</td>
<td>3.75%</td>
<td>8.00%</td>
<td>4.26%</td>
</tr>
</tbody>
</table>

**NOTE:** All non-percent figures are dollars indexed to a total asset base for the three divisions of 500.
### Exhibit 6

Components of Small Business Division Profitability  
(\% Assets)

<table>
<thead>
<tr>
<th></th>
<th>Difference from LBDs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Interest Spreads on Loan Relationships:</strong></td>
<td></td>
</tr>
<tr>
<td>Domestic Loans*</td>
<td>+0.73%</td>
</tr>
<tr>
<td>Eurodollar Loans</td>
<td>-0.01%</td>
</tr>
<tr>
<td>IRBs.</td>
<td>-0.36%</td>
</tr>
<tr>
<td>Fees on Loans</td>
<td>-0.13%</td>
</tr>
<tr>
<td><strong>Net Loan Spread</strong></td>
<td>+0.24%</td>
</tr>
</tbody>
</table>

**Net Interest Spreads on Deposits:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Deposits</td>
<td>+3.59%</td>
</tr>
<tr>
<td>Time Deposits</td>
<td>+0.43%</td>
</tr>
<tr>
<td><strong>Total Deposit Spread</strong></td>
<td>+4.02%</td>
</tr>
</tbody>
</table>

**Additional Administrative Costs and Risk associated with Small Business Loans:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Costs</td>
<td>-0.50%</td>
</tr>
<tr>
<td>Net Customer Support</td>
<td>-0.38%</td>
</tr>
<tr>
<td>Risk (Loan Loss/Assets)</td>
<td>-0.44%</td>
</tr>
<tr>
<td><strong>Total Cost &amp; Risk</strong></td>
<td>-1.32%</td>
</tr>
</tbody>
</table>

**General Support Charges**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.17%</td>
</tr>
</tbody>
</table>

**Pretax ROA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+2.77%***</td>
</tr>
</tbody>
</table>

---

*The actual \% Spread on Domestic Loans alone is 0.61\% higher for the SBD than for the LBD (see Exhibit 4); the discrepancy between this figure and the +0.73\% for domestic loans shown above is accounted for by the fact that the latter is calculated with the denominator being total assets, while the former is calculated with total domestic loans as the denominator.

**Corporate Overhead — as a \% Assets 0.31\% for the SBD compared with 0.14\% for LBD (see Exhibit 1).**

***Difference from figure in Exhibit 1 due to rounding.*
Figure 7

COMPONENTS OF SBD PROFITABILITY
(% Assets)

Δ +4.26%
Net Interest Inc.

Δ +2.76%
Pretax ROA

Δ +4.02%
Demand Deposits

Δ +0.43%
Time Deposits

Δ +0.24%
Interest

Δ -0.44%
Fees on Loans

Δ +0.37%
Domestic Loans*

Δ -0.50%
Direct Costs

Δ -0.38%
Customer Support Charges

Δ -1.49%
Risk (Loss)

Δ -0.44%
Cost and Risk

Δ -1.05%
Cost

Δ +0.73%
Industrial Revenue Bonds

Δ -1.05%
Customer Support

Δ -0.13%
Non-Interest Income

Δ -0.17%
General Support**

Δ -1.49%
Cost and Risk

Δ -0.38%
Customer Support

Δ -0.17%
Non-Interest Income

*The actual difference in % spread on domestic loans (Exhibits 1 and 4) is 0.61% (calculated with total domestic loans as the denominator rather than total assets).

**Corporate Overhead

NOTE: Discrepancies in addition are due to rounding.
The following papers are currently available in the Edwin L. Cox School of Business Working Paper Series.

79-100 "Microdata File Merging Through Large-Scale Network Technology," by Richard S. Barr and J. Scott Turner

79-101 "Perceived Environmental Uncertainty: An Individual or Environmental Attribute," by Peter Lorenzi, Henry P. Sims, Jr., and John W. Slocum, Jr.


80-100 "Implementing the Portfolio (SBU) Concept," by Richard A. Bettis and William K. Hall

80-101 "Assessing Organizational Change Approaches: Towards a Comparative Typology," by Don Hellriegel and John W. Slocum, Jr.

80-102 "Constructing a Theory of Accounting--An Axiomatic Approach," by Marvin L. Carlson and James W. Lamb

80-103 "Mentors & Managers," by Michael E. McGill

80-104 "Budgeting Capital for R&D: An Application of Option Pricing," by John W. Kensinger

80-200 "Financial Terms of Sale and Control of Marketing Channel Conflict," by Michael Levy and Dwight Grant


80-301 "Controlling the Performance of People in Organizations," by Steven Kerr and John W. Slocum, Jr.

80-400 "The Effects of Racial Composition on Neighborhood Succession," by Kerry D. Vandell


80-801 "Comparison of the EEOCC Four-Fifths Rule and A One, Two or Three σ Binomial Criterion," by Marion Gross Sobol and Paul Ellard

80-900 "Bank Portfolio Management: The Role of Financial Futures," by Dwight M. Grant and George Hempel
80-902 "Hedging Uncertain Foreign Exchange Positions," by Mark R. Eaker and Dwight M. Grant


80-111 "Sources of Performance Differences in Related and Unrelated Diversified Firms," by Richard A. Bettis

80-112 "The Information Needs of Business With Special Application to Managerial Decision Making," by Paul Gray

80-113 "Diversification Strategy, Accounting Determined Risk, and Accounting Determined Return," by Richard A. Bettis and William K. Hall

80-114 "Toward Analytically Precise Definitions of Market Value and Highest and Best Use," by Kerry D. Vandell

80-115 "Person-Situation Interaction: An Exploration of Competing Models of Fit," by William F. Joyce, John W. Slocum, Jr., and Mary Ann Von Glinow

80-116 "Correlates of Climate Discrepancy," by William F. Joyce and John Slocum

80-117 "Alternative Perspectives on Neighborhood Decline," by Arthur P. Solomon and Kerry D. Vandell

80-121 "Project Abandonment as a Put Option: Dealing with the Capital Investment Decision and Operating Risk Using Option Pricing Theory," by John W. Kensinger

80-122 "The Interrelationships Between Banking Returns and Risks," by George H. Hempel

80-123 "The Environment For Funds Management Decisions In Coming Years," by George H. Hempel

81-100 "A Test of Gouldner's Norm of Reciprocity in a Commercial Marketing Research Setting," by Roger Kerin, Thomas Barry, and Alan Dubinsky

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