

Economic Review



FEDERAL RESERVE BANK OF KANSAS CITY

June 1985

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In Tenth District States

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On Foreign Capital?

June 1985, Vol. 70, No. 6

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By William R. Keeton and Lyle Matsunaga

The earnings of banks in the Tenth District have declined in recent years, due partly to an increase in loan losses. Despite the drop in earnings, the capital of district banks has held up well relative to assets, indicating that district banks continue in a sound financial condition.

Is the United States Too Dependent On Foreign Capital? 23

By Craig S. Hakkio and Bryon Higgins

The growing U.S. trade and budget deficits have been accompanied by increased inflows of foreign capital. This greater dependence on foreign capital could pose serious risks for the U.S. and world economies. Lowering federal budget deficits would reduce the capital inflows and improve the prospects for balanced economic growth.

Profits of Commercial Banks In Tenth District States

By William R. Keeton and Lyle Matsunaga

These are turbulent times for banking. The rate of bank failures, though low in absolute terms, is the highest since the 1930s. Large money center banks have had difficulty collecting loans they made to less developed countries in the 1970s. And even though the current recovery is over two years old, banks of all sizes are still plagued with shaky farm, energy, and real estate loans. All of these problems have received wide publicity, creating concern about the health of banking in the United States.

In light of this concern, now is an especially appropriate time to examine the performance of commercial banks in states of the Tenth Federal Reserve District. Although banks in this region have escaped some of the problems of banks in other parts of the country, they have been particularly affected by the changing fortunes of agriculture and energy. Partly because of these changing conditions, their profitability has varied sharply in recent

years, increasing dramatically in the late 1970s and falling even more dramatically in the 1980s.

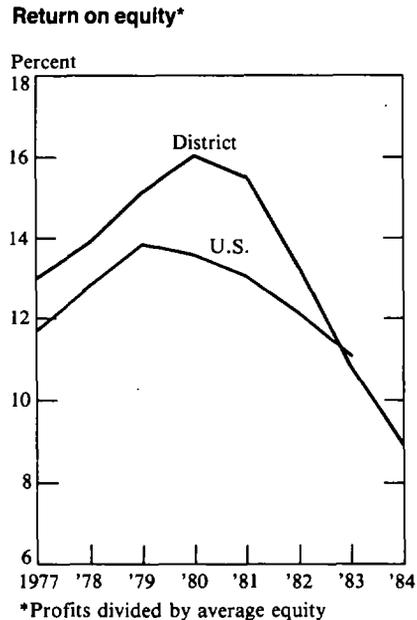
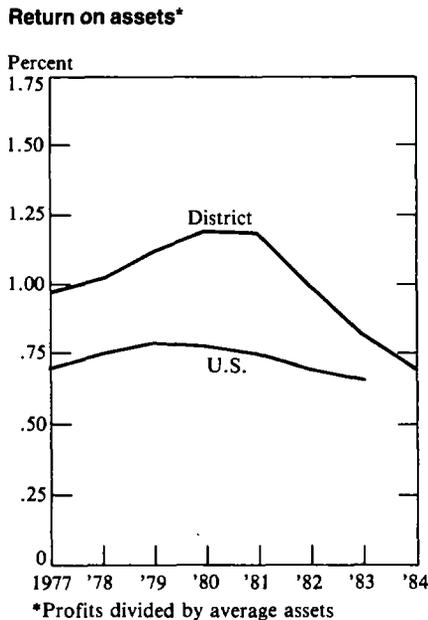
This article examines changes in district bank profitability from 1977 to 1984. The article first explains how profitability is measured, and then shows how profitability has changed in Tenth District states—in the aggregate, by size of bank, and by degree of specialization in agricultural lending. Next, the article looks at the two factors most responsible for recent changes in profitability: net interest income and loan losses. Following a brief analysis of profitability in each of the Tenth District states, the article concludes by examining the impact of the recent earnings decline on bank capital.

Measuring and explaining profitability

Bank profitability can be measured several ways. The bigger the bank, the greater total profits are likely to be. Thus, to compare performance across time or across banks, total profits must be deflated by some measure of

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CHART 1
Profitability of commercial banks



size. Different measures of profitability deflate by different measures of size.

One measure of profitability is return on equity (ROE). ROE deflates a bank's profits by its equity, the amount owners have invested in the bank through the purchase of stock or retention of earnings. ROE provides a good indication of the return that a bank is yielding to its owners.

Another measure of profitability is return on assets (ROA). ROA deflates total profits by total assets, including both financial assets and physical assets such as building and equipment. ROA is especially useful for measuring changes in a bank's performance over time. Because most components of a bank's income and expense are closely related to the volume of its assets, changes in ROA can be conveniently explained by determining which compo-

nents of income and expense have changed relative to assets. For this reason, ROA is used here as the primary measure of profitability.

Overall profitability

Measured by either ROE or ROA, the profitability of commercial banks in Tenth District states has fluctuated widely since 1977. Profitability rose sharply until 1980 and fell even more sharply after 1981 (Chart 1).¹ Because

¹ All data in this article were taken from the Reports of Condition and Income filed by insured commercial banks. Balance sheet data for 1977 to 1983 were adjusted for mergers at the Board of Governors of the Federal Reserve System to ensure that the assets and liabilities of merging banks were combined as close as possible to the date at which they began reporting their income jointly. Data for 1984 were adjusted the same way by the authors.

the deterioration since 1981 has been so sharp, profitability was substantially lower in 1984 than in 1977. ROA was only 0.7 percent in 1984, compared with 1.0 percent in 1977. And ROE was only 9.0 percent in 1984, compared with 13.1 percent in 1977.

Changes in profitability in Tenth District states have been both larger than in the United States as a whole and, on balance, less favorable. For example, in 1977, ROA was about 25 basis points higher in Tenth District states than in the nation as a whole. The gap increased to 40 points in 1980 but shrunk to 15 basis points in 1983. Although data for the entire United States are not yet available for 1984, indications are that the gap narrowed further during the year. In terms of ROE, the decline in the region's relative performance looks even sharper, with the gap in profitability disappearing by 1983.²

Although average profitability has fallen sharply the last several years, some banks in Tenth District states have continued to do well. Of the region's 2,900 banks, almost 500 suffered net losses in 1984. But 1,340 earned more than 1 percent on their assets, and 150 earned more than 2 percent.

Profitability by size and type

Performance has differed not only among individual banks but also among different sizes and types of bank. On balance, small banks in the district states have done considerably worse than large banks, and agricultural

banks significantly worse than nonagricultural banks.

For every year covered by this study, commercial banks have been divided into three size groups, with each group holding about a third of the total assets in the seven-state region. This implied an upper threshold for the small group of \$55 million in assets in 1984 and an upper limit for the medium-size group of \$226 million.³ As shown in Table 1, small banks are much more important in Tenth District states than in the United States as a whole, partly because the region is more rural and partly because it has more restrictions against branching. Nationwide, banks that fell under the lower threshold accounted for only 10 percent of total assets in 1983. They also represented a smaller proportion of total banks, 69 percent compared with 80 percent in Tenth District states.

The left panel of Chart 2 shows how profitability has changed at the three size groups, as measured by ROA. At all three groups, ROA increased through 1980, leveled off in 1981, and then declined. During both halves of the cycle, however, ROA changed more at small banks than at medium-size and large banks. Also, in 1984, ROA continued to deteriorate sharply at small banks but fell more slowly at medium-size banks and leveled off at large banks. Because of this divergence in performance, the ROA of small banks fell twice as much as that of other banks over the period, starting out at the top and ending up near the bottom.

² The gap in ROE disappeared before the gap in ROA because it was proportionately smaller to begin with. The reason it was smaller is that in Tenth District states banks are less leveraged—more of their assets are financed by equity rather than by deposits and other liabilities. The less leveraged a bank, the greater its ROA tends to be (interest expense is lower, increasing the numerator of ROA) but the smaller its ROE tends to be (equity is higher, increasing the denominator of ROE more than the numerator).

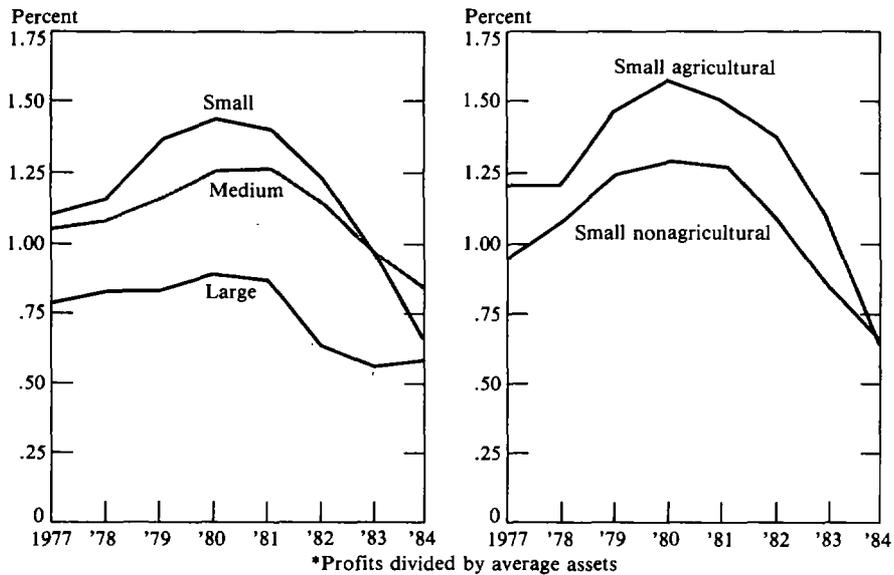
³ Because inflation and economic growth tend to increase the assets of all banks, the two size thresholds have risen significantly over time. Back in 1977, for example, the upper limit for the small group was only \$31 million and the upper limit for the medium group was only \$134 million. In defining size groups, many studies of bank performance use the same dollar thresholds in early years as in later years. That approach can produce severe distortions over long periods of time, because the tendency for all banks to grow in dollar terms causes the small size group to shrink relative to the larger groups.

TABLE 1
Distribution of commercial banks by size and type, 1983*

	Percent of assets		Percent of banks	
	District	U.S.	District	U.S.
Small banks	33	10	80	69
Agricultural	16	3	44	27
Nonagricultural	17	7	36	42
Medium banks	33	15	18	25
Agricultural	5	1	3	3
Nonagricultural	28	13	15	22
Large banks†	33	75	2	6
	100	100	100	100

* Includes only banks in existence the entire year.
† There were only eight large agricultural banks in the United States and only one in the district, accounting for 0.2 percent of total assets in both cases.

CHART 2
Return on assets, banks in Tenth District states*



Measured by ROE, the relative decline in profitability at small banks was even greater. In 1977, their ROE was 13.2 percent, less than that of medium-size banks but more than that of large banks. By 1984, it had fallen to 7.4 percent, less than that of either of the other groups.

Besides having a disproportionate number of small banks, Tenth District states have an unusually high proportion of agricultural banks. Since most agricultural banks are small, it is natural to ask whether the sharp deterioration in profitability in the small size group has been due to the performance of agricultural banks.

As in most other studies, agricultural banks are defined here as those with at least 25 percent of their outstanding loans in farm real estate or farm operating loans. As shown in Table 1, such banks account for about 21 percent of total assets in Tenth District states, five times as much as in the United States as a whole. Among the region's small banks, agricultural banks account for an ever larger share of total assets, about a half.

In both the small and medium-size groups, profitability has declined more at agricultural banks than nonagricultural banks over the past two years. The right panel of Chart 2 illustrates this for small banks. Agricultural banks in the group experienced about the same increase in ROA as nonagricultural banks in the late 1970s and about the same decrease in ROA through 1983. In 1984, however, they suffered a much bigger drop in earnings that left their ROA slightly below that of nonagricultural banks for the first time since the period began. The story has been much the same for medium-size banks, except that agricultural banks in that group suffered their big drop in earnings a year earlier, in 1983 instead of 1984.

The especially sharp deterioration in earn-

ings at agricultural banks and the disproportionately large number of agricultural banks in the small size group help explain why that group has suffered such a large decline in profitability. However, the magnitude of the decline cannot be entirely explained by the fact that so many small banks specialize in agricultural loans. Even when the sample is limited to nonagricultural lenders, small banks show the biggest drop in profitability, both from the 1980-81 peak and from earlier levels. Over the period as a whole, ROA dropped almost 30 basis points at small nonagricultural banks but only 15 basis points at medium-size nonagricultural banks and 20 basis points at large banks.

Determinants of ROA

What caused the change in bank profitability in Tenth District states? Since ROA equals total profits deflated by assets, changes in ROA can be explained by deflating the different components of total profits by assets and observing how they have changed over time. In the calculations performed here, profits are defined as net interest income minus loan loss provisions, net noninterest expense, net losses from security sales, and taxes. Table 2 shows the results for all banks in the region.

Most of the recent variation in profitability at district banks can be attributed to two sources. One is changes in net interest income, the excess of interest income over interest expense. The other is changes in loan loss provisions, the amount banks set aside to cover their loan losses. As shown in Table 2, the increase in ROA from 1977 to 1980 was due to a steep rise in net interest margin (NIM), the ratio of net interest income to assets. The subsequent fall in ROA from 1981 to 1984 was due to a sharp decrease in NIM and an even sharper increase in the ratio of

TABLE 2
Income and expense of commercial banks,
Tenth District states*
 (Percent)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Net Interest								
Income (NIM)†	4.11	4.26	4.41	4.64	4.70	4.67	4.41	4.29
- Loan loss provisions	0.24	0.24	0.25	0.29	0.30	0.56	0.65	0.81
- Net noninterest expense	2.13	2.13	2.16	2.21	2.24	2.36	2.34	2.27
- Net security losses‡	-0.04	0.02	0.05	0.05	0.13	0.04	-0.01	-0.03
- Total taxes	0.80	0.84	0.84	0.91	0.86	0.70	0.60	0.55
Profits (ROA)	0.98	1.02	1.12	1.19	1.18	1.00	0.83	0.69

*All variables are expressed as a percentage of average annual assets net of loan loss reserves. Average annual assets are computed from beginning-of-year, middle-of-year, and end-of-year figures, with weights of one-quarter, one-half, and one-quarter, respectively.

†Interest income is calculated on a taxable-equivalent basis. That is, each bank's tax-exempt income from state and local securities is grossed up by its marginal tax rate.

‡Includes net losses on extraordinary items.

loan loss provisions to assets. Compared with net interest income and loan loss provisions, net noninterest expense and net security losses have remained fairly constant. Since 1980, however, taxes have declined sharply relative to assets, dampening the fall in ROA.

The next two sections take a closer look at net interest margin and loan loss provisions in Tenth District states.

Net interest margin

The greater volatility of bank profits in Tenth District states is explained partly by greater changes in NIM. The NIM of district states rose sharply in the late 1970s and fell sharply in the early 1980s. Despite the recent decline, however, NIM ended up almost 20 basis points higher in this region than in 1977.

NIM by size and type

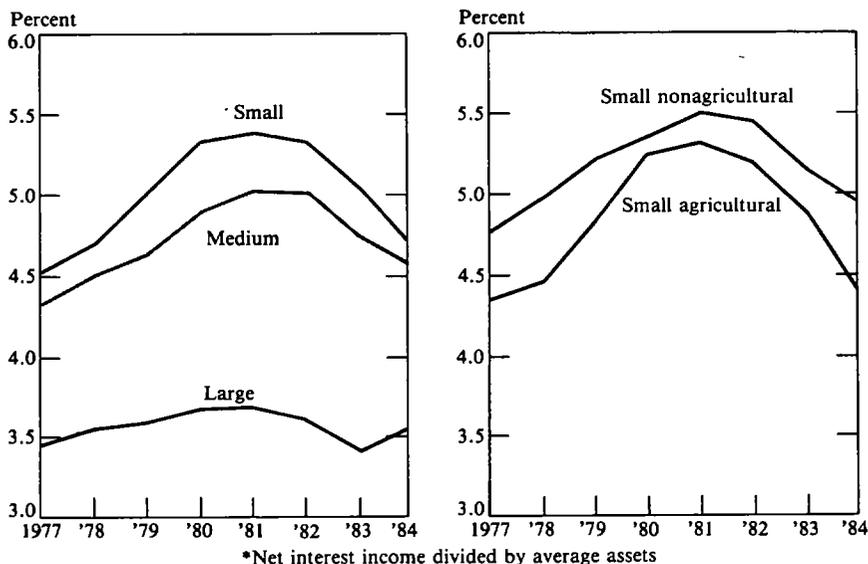
Until 1984, NIM moved in the same direction in all three size groups, increasing from

1977 to 1981 and falling from 1981 to 1983. As shown in the left panel of Chart 3, the NIM of small and medium-size banks rose much more than the NIM of large banks during the upswing and fell about the same amount during the downswing. There was a reversal in 1984, however. The NIM of small and medium-size banks continued to fall while the NIM of large banks turned around and increased. Despite this reversal, small and medium-size banks did better than large banks over the period as a whole, widening the gap between them.⁴

Within the small and medium-size groups, agricultural banks ended up with less net improvement in NIM than nonagricultural

⁴ The main reason the gap in NIM is so large is that small and medium-size banks have fewer noninterest-bearing assets. This tends to raise their interest income ratio above that of large banks. Noninterest-bearing assets accounted for 10 percent of the total assets of small and medium-size banks in 1984 but 18 percent of the total assets of large banks. The difference is due partly to large banks facing higher reserve requirements and partly to their having more demand deposits, which are subject to higher reserve requirements than time and savings deposits.

CHART 3
Net interest margin, banks in Tenth District states*



banks, due to a sharper deterioration in NIM after 1982. The right panel of Chart 3 illustrates this point for the small size group. At agricultural banks, NIM rose somewhat more from 1977 to 1981, fell about the same amount from 1981 to 1983, and then dropped much more in 1984. Because the 1984 decline was so severe, NIM ended up increasing only half as much as at small nonagricultural banks over the period as a whole. In the medium-size group, agricultural banks fared even worse. Because they experienced very large declines in NIM in both 1983 and 1984, their NIM ended up significantly lower than in 1977.

Determinants of NIM

Two factors affecting NIM are movements in market interest rates and shifts in the com-

position of banks' portfolios. If banks' assets and liabilities are not equally sensitive to market interest rates, changes in rates will have a different effect on interest income than on interest expense, altering the gap between them. And if the composition of banks' assets or liabilities shifts between categories with low rates of return and categories with high rates of return, interest income and interest expense will be affected even without any change in market interest rates.

To what extent can the sharp variation in NIM in district states be attributed to movements in market interest rates? Until 1984, NIM changed in the same direction as market interest rates, rising from 1977 to 1981 and falling from 1981 to 1983. From this coincidence it is tempting to conclude that banks in the district were "asset-sensitive" throughout the period—that their assets were more sensi-

tive to changes in market rates than their liabilities. If this were true, the rise in rates in the late 1970s would have pushed up interest income more than interest expense, raising NIM. Conversely, the fall in rates in the early 1980s would have pulled down interest income more than interest expense, reducing NIM.

Although appealing on the surface, this explanation is apparently only half correct. The steep rise in market interest rates in the late 1970s does seem to have been responsible for the sharp improvement in NIM at all three size groups. However, when the impact of portfolio shifts is netted out, the fall in market rates in the early 1980s appears to have contributed only marginally to the deterioration in NIM at large banks and not at all to the decline in NIM at small and medium-size banks.

What were these portfolio shifts? Throughout the period, banks in Tenth District states suffered a large adverse shift in the composition of their funds—a shift out of demand deposits and passbook savings accounts into deregulated retail deposits and managed liabilities, both of which paid higher rates of interest. This adverse shift in the composition of funds occurred at all three size groups. From 1979 to 1981, however, the shift in funds was significantly less at large banks. Also, from 1981 to 1984, the shift in funds was mostly offset at large banks by a favorable shift in the composition of assets, first from cash to loans and then from money market assets to loans.

Table 3 shows how these portfolio shifts affected each group's interest income ratio, interest expense ratio, and NIM over consecutive intervals from 1977 to 1984. To obtain these estimates, banks' assets and liabilities were first split into broad categories. Two numbers were then computed for each category—the share of the category in average

annual assets and the average rate of return earned or paid on the category during the year. Next, for each interval shown in Table 3, the effects of portfolio shifts on interest income and interest expense were calculated. This was done by multiplying the change in the share of each category by the average rate of return on that category and then summing over all categories. The rest of the change in the interest income and interest expense ratios is the "rate effect," the part due to changes in the average rates of return on different categories. Finally, the effects of portfolio shifts and rate changes on NIM were calculated by subtracting the estimates for the interest expense ratio from the estimates for the interest income ratio.⁵

The figures in Table 3 suggest the following explanation for the behavior of NIM in the three size groups.

1977-81. During the late 1970s, banks in all three size groups were asset sensitive. The increase in market interest rates tended to raise their interest income much more than their interest expense. This favorable rate effect outweighed the adverse impact of portfolio shifts, causing NIM to improve.⁶

⁵ The decomposition is described in greater detail in the appendix. For other applications of the technique, see Joseph F. Sinkey, Jr., *Commercial Bank Financial Management* (New York, Macmillan, 1983), pp. 485-492, and Ronald L. Olson and Harold M. Sollenberger, "Interest Margin Variance Analysis: A Tool of Current Times," *The Magazine of Bank Administration*, May 1978, pp. 45-51.

⁶ This interpretation of the data is subject to the criticism that shifts in the composition of funds may affect interest income as well as interest expense. In other words, some banks might have responded to the increase in their average cost of funds by raising their loan rates. To the extent this happened, the "rate effect" in Table 3 overstates the impact of rising market rates on interest income and understates the impact of falling market rates.

The argument that banks set loan rates as a markup over average cost is advanced by Emanuel Melichar, "A Financial Perspective on Agriculture," *Federal Reserve Bulletin*, January 1984, p. 7. However, many economists dispute this view of bank behavior. See, for example, R. Alton Gilbert and A. Steve Hol-

TABLE 3
Changes in interest income and expense by size of bank,
Tenth District states
(Percentage-point change in ratio to average assets)

	<u>1977-79</u>	<u>1979-81</u>	<u>1981-83</u>	<u>1983-84</u>
Small banks				
Change in interest income ratio	+ 1.22	+ 3.50	- 1.16	+ 0.11
Portfolio shift	+ 0.05	+ 0.02	+ 0.04	+ 0.02
Rate effect	+ 1.17	+ 3.48	- 1.20	+ 0.09
Change in interest expense ratio	+ 0.77	+ 3.10	- 0.80	+ 0.42
Portfolio shift	+ 0.23	+ 1.36	+ 0.84	+ 0.25
Rate effect	+ 0.54	+ 1.73	- 1.64	+ 0.18
Change in NIM	+ 0.46	+ 0.40	- 0.36	- 0.31
Portfolio shift	- 0.17	- 1.35	- 0.80	- 0.23
Rate effect	+ 0.63	+ 1.75	+ 0.44	- 0.08
Medium banks				
Change in interest income ratio	+ 1.49	+ 3.23	- 1.47	+ 0.33
Portfolio shift	+ 0.07	+ 0.05	+ 0.20	+ 0.06
Rate effect	+ 1.43	+ 3.18	- 1.68	+ 0.27
Change in interest expense ratio	+ 1.21	+ 2.83	- 1.20	+ 0.47
Portfolio shift	+ 0.25	+ 0.94	+ 0.89	+ 0.20
Rate effect	+ 0.95	+ 1.89	- 2.10	+ 0.27
Change in NIM	+ 0.30	+ 0.39	- 0.27	- 0.14
Portfolio shift	- 0.18	- 0.89	- 0.69	- 0.14
Rate effect	+ 0.47	+ 1.28	+ 0.42	0.00
Large banks				
Change in interest income ratio	+ 2.36	+ 3.04	- 2.73	+ 0.76
Portfolio shift	- 0.10	- 0.04	+ 0.57	+ 0.17
Rate effect	+ 2.47	+ 3.08	- 3.30	+ 0.60
Change in interest expense ratio	+ 2.22	+ 2.94	- 2.46	+ 0.60
Portfolio shift	+ 0.35	+ 0.70	+ 0.72	+ 0.03
Rate effect	+ 1.86	+ 2.24	- 3.18	+ 0.57
Change in NIM	+ 0.15	+ 0.09	- 0.27	+ 0.17
Portfolio shift	- 0.46	- 0.74	- 0.16	+ 0.14
Rate effect	+ 0.60	+ 0.83	- 0.12	+ 0.03
Memo:				
Change in 6-month T-bill rate	+ 4.51	+ 3.76	- 5.03	+ 1.05

The improvement in NIM was especially great at small and medium-size banks. From 1977 to 1979, they benefited no more than large banks from rising rates. According to the estimates in Table 3, for example, small banks enjoyed a favorable rate effect of 63 basis points between 1977 and 1979, only three points more than large banks. During these years, however, small and medium-size banks suffered somewhat less than large banks from adverse portfolio shifts. As a result, their NIM improved more.

After 1979, as deregulation gathered momentum, small and medium-size banks suffered more than large banks from adverse portfolio shifts. These shifts raised the interest expense ratio of small banks an estimated 136 basis points from 1979 to 1981, compared with 70 points at large banks. By this time, however, small and medium-size banks were also benefiting much more than large banks from the continued rise in market rates. At small banks, for example, the rise in rates boosted NIM by 175 basis points, more than twice as much as at large banks. Because of this highly favorable rate effect, NIM again increased more at small and medium-size banks than at large banks.

1981-83. By the early 1980s, the behavior of interest income and expense had shifted at all three groups. Small and medium-size banks had become liability sensitive while large banks had become less asset sensitive.

The assets of small and medium-size banks were no more sensitive to rates in 1981-83 than in the comparable period 1977-79. But because of the substantial shift in funds toward deregulated deposits, their liabilities had become much more sensitive to rates. As

lander, "Has the Deregulation of Deposit Interest Rates Raised Mortgage Rates?" *Review*, Federal Reserve Bank of St. Louis, May 1984, and Michael C. Keeley, "Interest-Rate Deregulation," *Weekly Letter*, Federal Reserve Bank of San Francisco, January 13, 1984.

a result, the fall in market rates from 1981 to 1983 reduced their interest expense ratio significantly more than their interest income ratio—44 points more at small banks and 42 points more at medium-size banks. This favorable rate effect was not great enough to overcome the continued adverse shift in the composition of funds and prevent NIM from falling. But it did significantly dampen the fall in NIM.

In contrast to small and medium-size banks, large banks remained marginally asset sensitive in the early 1980s. Their liabilities were significantly more rate sensitive in 1981-83 than in 1977-79. However, their assets had become more rate sensitive too. As a result, the fall in market rates from 1981 to 1983 reduced their interest income ratio 12 basis points more than their interest expense ratio. This unfavorable rate effect made up for the less adverse portfolio shift at large banks, causing their NIM to fall just as much as at medium-size banks and almost as much as at small banks.

1983-84. Market interest rates quit declining in 1984 and edged upward, increasing a percentage point over 1983. Did banks' interest income and expense respond to the 1983-84 increase in rates the same way they responded to the 1981-83 decrease? Although the two periods are not exactly comparable, the decomposition in Table 3 provides some tentative answers.

In the small and medium-size groups, interest expense rose significantly more than interest income, as would be expected if these groups continued to be liability sensitive. In both groups, however, much of the increase in interest expense was caused by adverse portfolio shifts. When the impact of these shifts is netted out, medium-size banks show no change in NIM and small banks show a decline of eight basis points instead of 31.

Furthermore, the unfavorable rate effect at small banks is due entirely to the experience of small agricultural banks, where interest income continued falling despite the rise in market rates.⁷ At small nonagricultural banks, the increase in market rates raised interest income just as much as interest expense, with no effect on NIM.

Large banks were also relatively unaffected by the increase in market interest rates, experiencing a favorable rate effect of only three basis points. During the year, however, these banks enjoyed a favorable shift in the composition of assets that was not offset by an adverse shift in the composition of funds. As a result, their NIM improved.

Although it is difficult to say whether district banks' liabilities are now more sensitive to rates than their assets, one fact seems clear. Because of deposit deregulation, banks in all three groups derive less benefit from rising rates than they once did, and some banks—particularly agricultural banks—may be severely hurt.

Loan loss provisions

Net interest margins fell sharply at district banks after 1981, but remained higher than in 1977. Thus, even though the deterioration in NIM accounts for much of the drop in profitability over the last three years, it accounts for none of the decline in performance over the period as a whole. Almost all of that decline has resulted from a sharp increase in loan loss provisions.

⁷ Farm financial stress may have contributed to the fall in interest income in 1984, both by discouraging lenders from raising rates on new loans and by preventing borrowers from meeting the interest payments on their old loans. However, the interest income of small agricultural banks behaved much the same in 1982, the last time interest rates turned around. Interest income continued rising that year even though market rates had begun to fall.

Relative to assets, loan loss provisions in Tenth District states remained virtually unchanged through 1981, almost doubled in 1982, and then increased further in 1983 and 1984 (Table 2). Loss provisions have increased 50 basis points since 1981, reaching 0.81 percent of assets in 1984. Although loan loss provisions have also risen in the rest of the country, they have not risen nearly as much. That is why profitability has declined more in Tenth District states over the period as a whole.

Most of the increase in loan loss provisions since 1981 has been to cover writeoffs of bad loans. But banks have also been setting aside enough to build up their loan loss reserves.⁸ As a result, loan loss reserves in district states have grown from 1.1 percent of loans at the end of 1981 to 1.4 percent at the end of 1984.

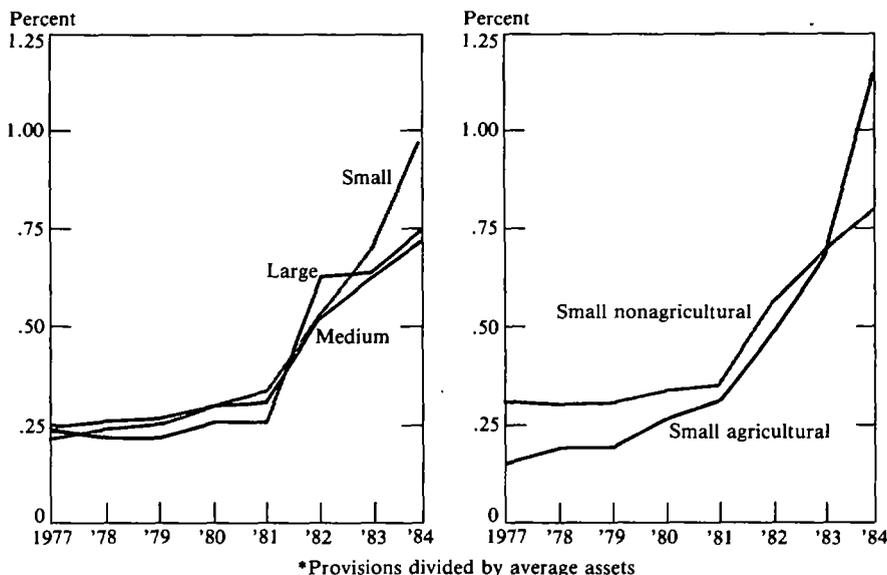
Provisions by size and type

As shown in the left panel of Chart 4, small banks have experienced the largest increase in loan loss provisions of the three size groups. Their poor performance can be attributed entirely to the disproportionately large number of agricultural banks in the group.

Although agricultural banks and nonagricultural banks experienced similar increases in loan losses at first, losses have accelerated at agricultural banks over the past two years while decelerating at nonagricultural banks. As the right panel of Chart 4 shows, provisions increased the same at small agricultural banks as at small nonagricultural banks from 1981 to 1983, about 35 basis points. In 1984, by contrast, provisions jumped almost 50 basis points at small agricultural banks while

⁸ When banks write off bad loans, they charge their loan loss reserves, not their earnings. Writeoffs affect earnings only to the extent that banks provide enough funds for their reserves to make up for the chargeoffs.

CHART 4
Loan loss provisions, banks in Tenth District states*



increasing only 10 basis points at small nonagricultural banks. The relative performance of medium-size agricultural banks has been similar, except that the big increase in their loan loss provisions came a year earlier, in 1983 instead of 1984.

Nonperforming loans

An important indicator of future loan losses is the amount of nonperforming loans. These are loans that have not been written off but are 90 days or more overdue, nonaccruing, or renegotiated.⁹ Data on such loans have been available to the public only since 1983.

⁹ Banks are allowed to count as income any interest that is due but not received, provided the interest and principal are less than 90 days overdue or the loan is well secured and in process of collection. Nonaccruing loans are overdue loans that do not meet either of these conditions. Renegotiated loans are troubled loans with terms that have been eased to facilitate repayment by the borrower.

Table 4 shows that the behavior of nonperforming loans in 1984 was much less favorable for agricultural banks in the region than

TABLE 4
Nonperforming loans by size and type of bank, Tenth District states
 (Percent of total loans, end of year)

	<u>1983</u>	<u>1984</u>
All banks	3.2	3.5
Small banks	2.9	3.5
Agricultural	2.8	4.0
Nonagricultural	2.9	3.1
Medium banks	2.9	3.2
Agricultural	3.4	4.0
Nonagricultural	2.8	3.0
Large banks	3.9	3.7

for nonagricultural banks. The percent of nonperforming loans increased sharply at agricultural banks but remained relatively flat at all three sizes of nonagricultural banks. By the end of the year, 4 percent of the total loans of agricultural banks were nonperforming, significantly more than at small and medium-size nonagricultural banks and slightly more than at large banks.

Over the course of 1984, agricultural banks did manage to provide more for loan losses than they charged off. Small agricultural banks, for example, built up their reserves from 1.2 percent of loans at the end of 1983 to 1.6 percent at the end of 1984. But the growth in loan loss reserves has been far outstripped by the growth in nonperforming loans. This makes it unlikely that agricultural banks can cover future writeoffs of bad loans without adversely affecting earnings.

Causes of increased loan losses

The severe business recession of 1981-82 has been partly to blame for the sharp increase in loan losses the past three years. Loan loss provisions of nonagricultural banks in the district rose after the 1974-75 business recession too. However, the recent recession cannot account for all the loan problems at district banks. For one thing, the increase in loan loss provisions at nonagricultural banks has been much sharper and more protracted than after the 1974-75 recession. For another, loan loss provisions have also risen sharply at the region's agricultural banks, after remaining virtually unchanged throughout the 1970s.

Why, then, have loan losses of district banks increased so much over the last several years? One factor has been the unusually high level of real interest rates. Although nominal interest rates have fallen significantly, they have not fallen nearly as much as inflation. As

a result, the real burden of debt payments has increased, making it more difficult for borrowers to repay their loans. High real interest rates help explain why loan losses of nonagricultural banks increased much more after the 1981-82 recession than after the 1974-75 recession. They also help explain why loan losses of agricultural banks have accelerated so much.

Another factor has been the unevenness of the current recovery. Although some sectors of the district economy have enjoyed rapid growth, the energy and agriculture sectors have suffered severe slowdowns. The combination of high real interest rates and declining real incomes has made it particularly difficult for borrowers in these sectors to meet their debt payments. And because energy and agriculture are more important in Tenth District states than the nation as a whole, the downturn in these two sectors has had an especially severe impact on district loan losses.

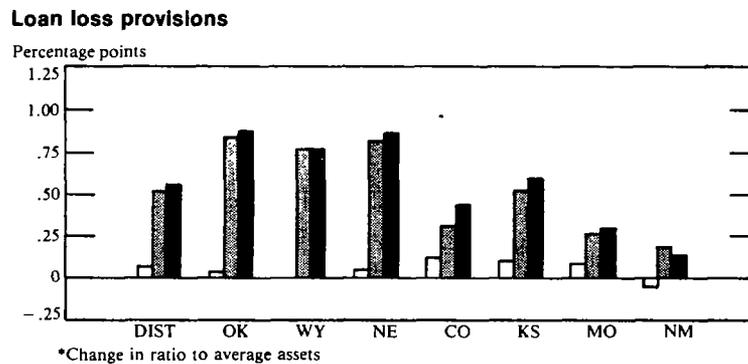
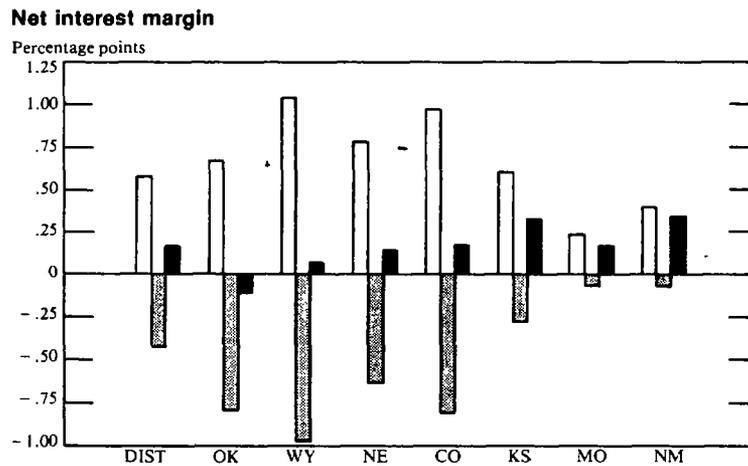
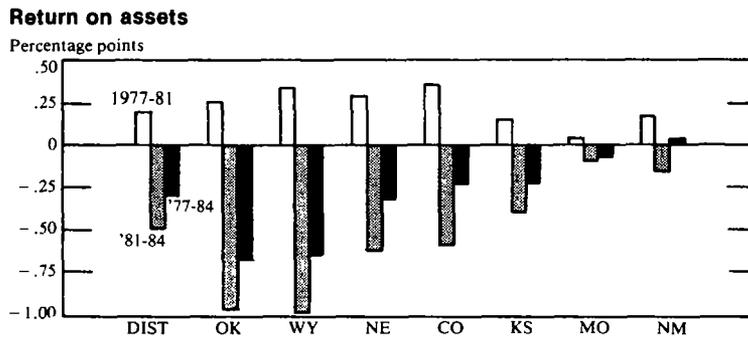
Profitability by state

Falling net interest margins and rising loan losses have squeezed profit margins throughout the district. However, performance has not been uniform among the seven states in the region. Some states have experienced much larger swings in profits, and some have experienced a much greater decline in profits over the period as a whole (Chart 5). This section briefly analyzes the earnings performance of each state, in order of its net decline in ROA.

Oklahoma

Profits in Oklahoma rose only slightly more than average for the district in the late 1970s but fell significantly more than average in the early 1980s (Chart 5). Because the latter decline was so severe, ROA decreased almost

CHART 5
Changes in profitability in Tenth District states*



70 basis points over the period as a whole, much more than in the rest of the region.

The volatility of profits in Oklahoma has resulted partly from the volatility of NIM. NIM rose more than average because of an unusually sharp increase in average loan yields, and then fell more than average because of an unusually steep drop in average loan yields. The vicissitudes of the state's energy industry were partly responsible for these fluctuations. The energy boom of the late 1970s tended to raise loan yields by boosting local demands for credit. On the other hand, the energy bust of the 1980s tended to reduce loan yields by making borrowers less willing or less able to pay high interest rates. Because NIM has deteriorated so much over the last three years, Oklahoma is the only Tenth District state to have suffered a net decline since 1977.

Besides suffering a steep decline in NIM, Oklahoma banks have experienced an extremely large increase in loan loss provisions—a development that can also be attributed to the slowdown in the energy sector. The increase in loan losses has been especially great at large banks. Their provisions jumped to 1.5 percent of assets last year, while those of small and medium-size banks remained in the neighborhood of 1 percent.

Wyoming

Because energy and mining are also important in the Wyoming economy, it comes as no surprise that Wyoming's earnings performance has been similar to that of Oklahoma (Chart 5). Wyoming enjoyed a comparatively large increase in profits in the late 1970s but suffered an extremely severe decline in profits in the early 1980s. For the period as a whole, ROA dropped a little more than 60 basis points, only slightly less than in Oklahoma.

NIM has varied more in Wyoming than any other Tenth District state, contributing to the volatility of profits. Some of the variation in NIM has been due to greater-than-average changes in loan yields at the state's small banks. Differences in portfolio shifts have also been a factor. In the late 1970s, Wyoming banks experienced a smaller adverse shift in the composition of funds than the rest of the region, preventing their interest expense from rising as much. And, in the 1980s, Wyoming banks suffered a larger adverse shift in the composition of funds, preventing their interest expense from falling as much as in other states.

Although NIM ended up slightly higher in Wyoming in 1984 than in 1977, loan loss provisions rose much more. This, together with a sharp increase in net noninterest expense, explains why profits have fallen so much in the state over the period as a whole. The increase in loan losses has been widespread, but has been particularly severe at the state's large banks.

Nebraska

Profits have varied much more in Nebraska than in the district as a whole (Chart 5). Over the entire period, however, ROA declined only 30 basis points, the average for the region.

Because Nebraska has a disproportionately large number of small agricultural banks, its NIM has been highly volatile.¹⁰ As noted previously, the NIM of the region's small agricultural banks increased by a relatively large

¹⁰ In 1983, 44 percent of total assets in Nebraska were held by small agricultural banks and another 19 percent were held by medium-size agricultural banks. For the district as a whole, the corresponding percentages were only 16 and 5 (Table 1).

amount in the late 1970s and then decreased by a relatively large amount in the early 1980s. NIM has fluctuated even more sharply at small agricultural banks in Nebraska, making up for the relative stability in NIM at the state's large banks.

The large number of agricultural banks in Nebraska also accounts for a sharp increase in loan loss provisions in the state. Although provisions have also risen at Nebraska's non-agricultural banks, the increase at these banks has not been any greater than at nonagricultural banks in the rest of the region.

Despite the large increase in loan losses, profits have declined only slightly more in Nebraska than the rest of the region. That is because Nebraska banks have maintained somewhat better control over their net noninterest expense.

Colorado

Profits rose significantly more than average in Colorado in the late 1970s and then fell slightly more than average in the early 1980s (Chart 5). Over the period as a whole, ROA fell 20 basis points, a little less than the regional average.

In both the late 1970s and early 1980s, NIM changed almost as much in Colorado as in Wyoming. As in Wyoming, the volatility of NIM in Colorado can be partly explained by differences in portfolio shifts. Colorado banks suffered a relatively small adverse shift in funds in the late 1970s but a relatively large adverse shift in funds in the early 1980s. In addition, the interest income of Colorado's small and medium-size banks responded fairly quickly to changes in market rates, increasing more than average in the late 1970s and falling more than average in the early 1980s. This was due partly to a tendency for Colorado banks to hold more short-term loans and fewer

long-term securities than banks of the same size in other states.

Although NIM did not improve more in Colorado than the rest of the region over the seven-year period, loan loss provisions rose somewhat less, limiting the decline in profits. The more moderate increase in loan loss provisions in Colorado has been due to a sharp turnaround in loan losses at the state's large banks. After a very large increase in 1982, their provisions have fallen, while provisions of small and medium-size banks have continued to climb. The slowdown in energy and mining helps explain the 1982 jump in loan losses at large banks and the continued increase in loan losses at smaller banks. Although these sectors are not nearly as important in Colorado as in Oklahoma and Wyoming, they are more important than in other Tenth District states.

Kansas

Banks in Kansas experienced an average increase in profits from 1977 to 1981 and a slightly below-average decrease in profits from 1981 to 1984 (Chart 5). Over the period as a whole, ROA declined 20 basis points, the same as in Colorado.

Although Kansas is second only to Nebraska in the share of assets held by small agricultural banks, its NIM has not been especially volatile.¹¹ That is because the NIM of the state's medium-size banks and small non-agricultural banks has been relatively stable. In the late 1970s, their interest expense responded more quickly to market rates than in other states, holding NIM down. And in the early 1980s, their interest income responded

¹¹ In 1983, 32 percent of total assets in the state were held by small agricultural banks and another 8 percent were held by medium-size agricultural banks.

more slowly, holding NIM up. The NIM of the state's large banks grew steadily over both phases, increasing by a full percentage point. Because of this, NIM ended up increasing twice as much in Kansas as in the region as a whole.

Although NIM has performed well in Kansas, provisions for loan losses have increased just as much as in the rest of the region. The high proportion of agricultural banks has tended to raise the state's average loan losses, making up for the relatively small increase in loan losses at large banks.

Missouri

Missouri experienced a modest increase in profits in the late 1970s and a modest decrease in profits in the early 1980s (Chart 5). Over the period as a whole, ROA declined only 10 basis points, significantly less than in the rest of the region.

Profits have been stable in Missouri mainly because NIM has changed very little. One reason NIM has fluctuated so little is that the interest expense of large banks has responded quickly to changes in market rates, rising rapidly in the late 1970s and falling rapidly in the early 1980s. Another factor that has tended to dampen the fluctuation in NIM in Missouri is the pattern of portfolio shifts. Compared with other district states, banks in Missouri suffered a larger adverse shift in the composition of funds from 1977 to 1981 and a smaller adverse shift from 1981 to 1984.

Because Missouri has a highly diversified economy, its loan loss provisions have increased only moderately. That is why profits have fallen so little over the period as a whole. At nonagricultural banks, provisions rose significantly less than average in 1982 and 1983 and no more than average in 1984. Agricultural banks have been less fortunate.

But because they account for a smaller share of total assets than in Nebraska and Kansas, the sharp increase in their loan losses since 1981 has not been enough to offset the more favorable performance of the state's nonagricultural banks.¹²

New Mexico

Like Missouri, New Mexico has experienced relatively little variation in profits over the period. And because earnings have deteriorated so little the last several years, New Mexico is the only state in the region that has not suffered a net decline in ROA.

NIM has improved substantially in New Mexico since 1977, about the same as in Kansas. NIM increased somewhat less than average in the late 1970s but then fell much less than average in the early 1980s. The performance of NIM has been especially strong at small and large banks. Both size groups suffered a highly adverse shift in funds after 1981. However, their interest expense responded much more quickly to the fall in market rates than their interest income, protecting their NIM.

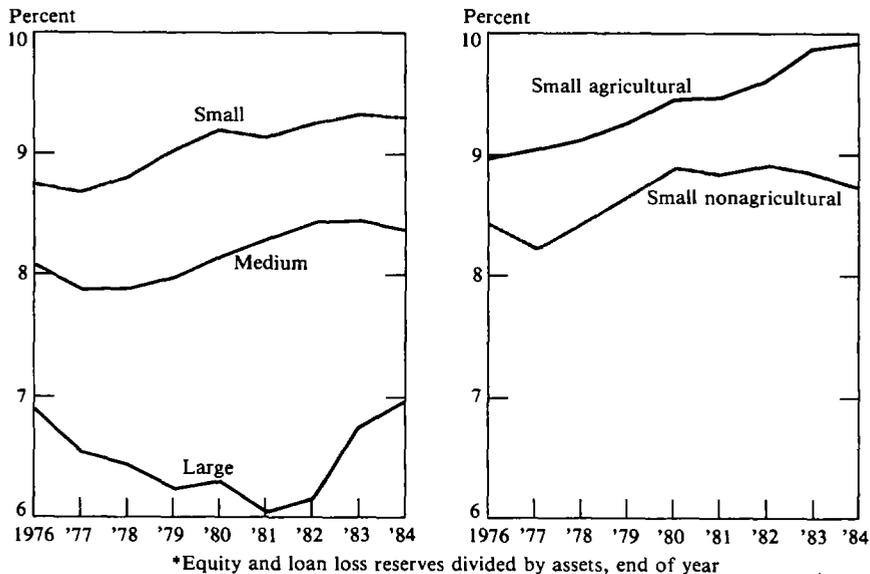
Another reason profits have held up so well in New Mexico is that loan loss provisions have increased only moderately. Provisions have risen only 20 basis points since 1981, the smallest increase in the district.

Capital

Bank profits are down sharply in most of the Tenth District, compared not only with the peak of 1980-81 but also with earlier levels. How well banks in the region weather this

¹² In 1983, 13 percent of total assets in the state were held by small agricultural banks and 3 percent were held by medium-size agricultural banks.

CHART 6
Primary capital, banks in Tenth District states*



decline in earnings will depend on two factors—how much capital they have on hand to absorb losses and how much longer the decline in earnings lasts.

Banks in Tenth District states are still well capitalized, despite lower earnings. One measure of capital is primary capital, the sum of equity and loan loss reserves. For district banks in the aggregate, primary capital equaled 8.2 percent of assets at the end of 1984, compared with 7.9 percent at the end of 1976. Over the period as a whole, equity remained unchanged at about 7.5 percent. Thus, the increase in primary capital has been due entirely to the growth in loan loss reserves.

All three size groups have managed to preserve their primary capital, as the left panel of Chart 6 shows. However, small and medium-size banks have been more successful than large banks. Although large banks have

increased their equity and loan loss reserves significantly since 1981, the increase has just made up for the sharp decline in capital they suffered in the late 1970s.

Among small and medium-size banks, agricultural banks have increased their capital-asset ratios even more than nonagricultural banks, widening the gap between them. As shown in the right panel of Chart 6, the capital-asset ratio of small nonagricultural banks has risen about 30 basis points since 1976. At small agricultural banks, the ratio has risen almost 100 basis points, falling just short of 10 percent at the end of 1984. The superior performance of agricultural banks is due to two factors. First, they have not accumulated assets as rapidly as nonagricultural banks. And second, until last year they earned significantly higher profits than nonagricultural banks, enabling them to build up their equity at a faster rate through retained earnings.

The volume of nonperforming loans suggests that increased loan losses will be the most important factor tending to depress banks' earnings and use up their capital in the short run. At the end of 1984, 89 percent of the region's banks still had more than twice as much primary capital as nonperforming loans. Only a year earlier, however, 93 percent of all banks were in that position. Furthermore, more than 70 banks in the region ended 1984 with less primary capital than nonperforming loans, compared with only 35 banks at the end of 1983. Thus, while the vast majority of banks in the region have more than enough capital to protect themselves against additional loan losses, the number of banks that do not enjoy such a cushion has been growing.

Conclusions

The profitability of Tenth District banks has fluctuated widely since 1977, first increasing sharply and then decreasing sharply. Because the recent deterioration has been so severe, banks throughout the region have suffered a net decline in earnings. The decline has been greatest at small banks, banks that specialize in agricultural lending, and banks in energy-producing states. Because all three groups are disproportionately represented in the Tenth District, bank profits have fallen more in the region than in the nation as a whole.

The volatility of profits at district banks has had several causes. During the late 1970s, ris-

ing market interest rates and strong growth in the agricultural and energy sectors boosted banks' net interest margins despite a large adverse shift in the composition of their funds toward more expensive deregulated deposits. During the early 1980s, falling market rates did not have the same tendency to reduce banks' net interest margins, because the massive shift to deregulated deposits had made their cost of funds much more sensitive to rates. But banks continued to suffer a large adverse shift in funds, causing net interest margins to drop anyway. Even more important, the failure of interest rates to decline as much as inflation, the severe 1981-82 business recession, and the sharp slowdown in the energy and agricultural sectors combined to produce a large increase in loan losses. Thus, even though net interest margins remained slightly higher at most banks than when the period began, profits ended up substantially lower.

Despite the recent decline in earnings, district banks have managed to maintain high levels of capital relative to assets. These high capital-asset ratios should provide the vast majority of banks with an adequate cushion against future losses. Resuming the rapid earnings growth of the late 1970s will be more difficult. At the very least, such a turnaround will require lower real interest rates, greater balance among the various sectors of the regional economy, and strong growth in the national economy.

Appendix

This appendix explains the decomposition of interest income, interest expense, and NIM in Table 3.

The choice of asset and liability categories was constrained by the degree of disaggregation in the Reports of Condition and Income. Assets were split into four categories – money market assets, loans, securities, and all other assets. Liabilities were divided into five categories – passbook savings accounts, regular NOW accounts, other interest-bearing retail deposits, managed liabilities, and all other liabilities. For the years from 1978 to 1981 only, other interest-bearing retail deposits were also broken down into six-month money market certificates and other deposits. Finally, for passbook savings, regular NOW's, and six-month money market certificates, it was assumed that the average rate of return equaled the prevailing ceiling rate.

Between each pair of years, t and T, the portfolio-shift effect was calculated as

$$\Sigma(s_{iT} - s_{it})(r_{it} + r_{iT})/2],$$

where s_{it} is the fraction of total assets or total funds in category i in year t and r_{it} is the average rate of return paid or earned on category i in year t. The rate effect was then calculated as

$$\Sigma(r_{iT} - r_{it})(s_{it} + s_{iT})/2].$$

Adding the two effects together gives the total change in the interest income or interest expense ratio from year t to year T.

The decomposition could be done in other ways. For example, in calculating the portfolio-shift effect, either r_{it} or r_{iT} could be substituted for the term $(r_{it} + r_{iT})/2$. This would change the numbers in Table 3, but not enough to alter any of the qualitative results.

Is the United States Too Dependent On Foreign Capital?

By Craig S. Hakkio and Bryon Higgins

The growing U.S. foreign trade deficit in recent years has been accompanied by an increasing net inflow of foreign capital. As a result of these net capital inflows, the United States has become—or soon will become—a net debtor to the rest of the world. Indeed, unless the trends are reversed, this country will soon become the largest debtor nation in the world.

The growing net capital inflows have caused many to be concerned that the United States is increasingly dependent on foreign capital. They argue that increased borrowing from foreigners is both unsustainable and dangerous.¹ One danger is that at some point foreigners will be reluctant to provide additional capital to the United States, creating the potential for a precipitous decline in the exchange value of the dollar and an attendant rise in interest rates to ration the limited

domestic supply of credit. Another concern is that the large net capital inflows threaten to drain capital from Europe and elsewhere that will be needed to finance real investment abroad. Many of those who consider the net capital inflow dangerous think it results from high federal government budget deficits in the United States. They argue that high budget deficits have forced up U.S. interest rates, thereby attracting foreign capital. Their recommendation, therefore, is to reduce the budget deficit to bring down interest rates, the exchange rate, the trade deficit, and capital inflows.

An alternative point of view is that the net capital inflows are not dangerous because they merely reflect the U.S. economy's vitality,

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¹ See, for example, the statement by Henry Wallich, member, Board of Governors of the Federal Reserve System, before the House Subcommittee on International Economic Policy and Trade, March 22, 1985, or the statement by C. Fred Bergsten, director, Institute for International Economics, before the Senate Subcommittee on International Finance and Monetary Policy, June 6, 1984.

which is attributed to the 1981 tax cuts and the improved inflation outlook in the United States.² Those who hold this point of view deny that budget deficits cause high interest rates and conclude that reducing budget deficits would not deter continued net capital inflows. In addition, they do not agree that the United States is increasingly dependent on foreign capital or that the reluctance of foreigners to acquire additional U.S. assets threatens to disrupt exchange or domestic credit markets. Part of this sanguine attitude results from a certain interpretation of the balance of payments statistics. This interpretation holds that the increase in net capital inflows has resulted from a reduction in gross capital outflows rather than from an increase in gross capital inflows. They conclude from this interpretation that the United States has not become increasingly dependent on foreign capital.

This article argues that the United States has become increasingly dependent on foreign capital and that this dependence poses risks for the balance and stability of the domestic and world economies. The first section discusses the causes of the rise in net capital inflows, concluding that the large government budget deficit has been a major factor. The second section discusses the two points of view regarding the consequences of the net capital inflow and argues that continued large net capital inflows are likely to pose problems for both the U.S. economy and the world economy. The conclusion from this analysis is that reducing the budget deficit would help reduce dangerous U.S. dependence on foreign capital.

² This point of view has been expressed by supply-side economists and members of the Reagan administration. See, for example, Paul Craig Roberts, "The Strong Dollar: A Sheep in Wolf's Clothing," *Business Week*, March 11, 1985, and the comments by Treasury Secretary James Baker reported in *Daily Report for Executives*, April 15, 1985.

Causes of the net capital inflow

Several explanations have been offered for the large U.S. net capital inflows. Some of these explanations mistake symptoms for causes, however. The ultimate determinants of capital inflows are domestic spending and saving. To see why this is so, it is useful to see how capital flows fit into the overall balance of payments and to develop a framework for analyzing net capital inflows.

Capital flows in the balance of payments

A country's balance of international payments is a summary statement of all transactions between residents of that country and the rest of the world. The balance of payments has three basic components.

The most familiar component is the merchandise balance of trade. A surplus in the merchandise balance of trade occurs when more goods are exported than are imported, and a deficit occurs when more goods are imported than are exported.

The second component is the service account balance, which includes net interest income and other services. Net interest payments are equal to interest payments to foreign investors minus interest receipts of domestic residents on foreign investments. Interest payments are included in the services account since they are viewed as current payment for capital services. The balance on other services is the net sale of insurance, real estate, shipping, and similar tradeable services to the rest of the world. The sum of the services balance

³ There is one additional, but small, component to the current account—"remittances, pensions, and other unilateral transfers."

and the merchandise trade balance is the current account balance.³

Capital flows are the final component of the balance of payments. International capital flows pertain to exchanges of assets—mostly financial assets—between countries. There are several categories of international capital flows. One category is official capital flows, which consist of changes in the asset holdings of an official agency in at least one country. This type of capital flow often arises as a result of exchange market intervention or accumulation of reserve assets by central banks. All other capital flows involve the exchange of assets by private citizens or firms. These private capital flows include direct investment, securities purchases, and bank flows.

Since all of a country's international transactions must sum to zero, a net capital inflow must offset a deficit or surplus on the current account. A country with a deficit in its current account must finance that deficit by borrowing

abroad—that is, by a net capital inflow.⁴ Similarly, a change in the current account balance must be accompanied by an equal but opposite change in the net capital flow.

Most short-run changes in the current account balance result from changes in the merchandise trade balance. Net interest payments change little over short periods, being determined primarily by the size of past capital flows; and flows of other services are smaller and less volatile than merchandise trade flows. Therefore, a change from net capital outflow to large net capital inflow is almost inevitably associated with a surge in merchandise imports or a sharp cutback in merchandise exports.

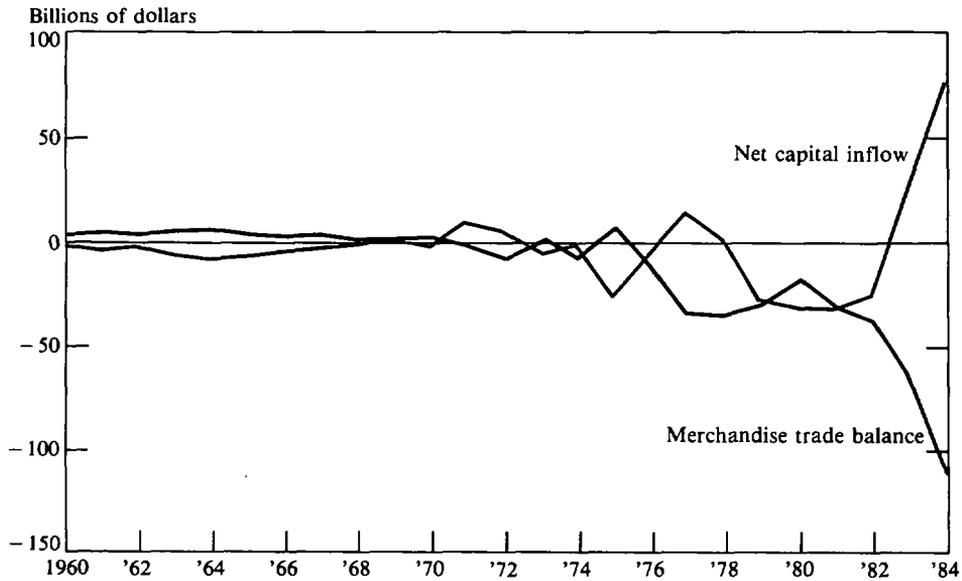
The United States has experienced such a turnaround in net capital flows in recent years. As shown in Chart 1, the United States had a net capital outflow most of the time from 1960 through 1982. Since 1982, though, the United States has had a growing net capital inflow, which totaled over \$70 billion in 1984. As the chart also shows, the turnaround in net capital flows has been associated with a deterioration in the merchandise trade balance, which has posted large and growing deficits in recent years.

The sources and uses of funds framework shows why the net capital inflow is equal to the difference between domestic uses of funds and domestic sources of funds. Investment spending and the budget deficit are the two domestic uses of funds. Domestic savings and the net capital inflow are the two sources of funds. Therefore, funds to finance investment spending and the budget deficit must come either from domestic savings or from the net capital inflow from abroad. If the domestic uses of funds exceed the domestic sources of funds, the excess must be borrowed from abroad, resulting in a net capital inflow. This relationship can be seen in Equation 1.

⁴ The actual balance of payments accounts are much more complex than suggested by this discussion. However, all of the important conceptual points can be made using the tripartite division of merchandise trade flows, service flows, and capital flows. In the actual balance of payments statistics, measured capital flows need not entirely offset the current account surplus or deficit. Because of measurement problems, there is a large residual category for statistical discrepancy, which amounted to \$24.7 billion in 1984. Although large, the statistical discrepancy does not pose insurmountable problems for analyzing balance of payments changes over time, especially those as large as have occurred in the U.S. balance of payments in recent years. However, all empirical estimates using balance of payments figures are subject to unusually large errors because of the large statistical discrepancy.

The discussion in the text should not be interpreted as implying that current account deficits *cause* net capital inflows. The current account and capital account are jointly determined because both are endogenous variables. According to the portfolio balance approach to international economics, changes in capital flows are if anything causally prior to changes in the current account. Statements in the text that could be interpreted otherwise are used only for expositional ease.

CHART 1
Net capital inflow and merchandise trade balance



Source: Board of Governors of the Federal Reserve System

$$(1) \quad NKIN = (G-T) + I-S$$

where NKIN = net capital inflow to the United States,

G = government spending,

T = government tax revenues,

I = domestic private investment spending, and

S = domestic private saving.

The equation shows that a country with a large government budget deficit, good investment prospects, or a low propensity to save will tend to have a net capital inflow. The equation also shows that factors which do not affect

budget deficits, investment, or domestic saving do not affect the capital inflow.

Factors leading to a net capital inflow

The sources and uses of funds framework can be used to analyze the factors contributing to the increased net capital inflow to the United States. In an integrated world economy, almost everything that happens in the United States and other countries affects U.S. capital flows to some extent. However, three factors have been cited as the principal causes of the increased U.S. net capital inflow. These factors are U.S. government budget deficits, the robust economic expansion of the U.S. economy and associated rapid growth in investment spending by U.S. businesses, and the LDC debt crisis and accompanying desire

of investors for a "safe haven" for their funds.

Many analysts think the large U.S. government budget deficits are the most important cause of the net capital inflow. This view is based in part on the approximate coincidence of increased budget deficits and increased capital inflows. Capital inflows began rising soon after federal government deficits burgeoned.⁵ More importantly, though, is the close economic relationship between budget deficits and capital inflows. As shown by Equation 1, if commensurate reductions in investment spending or increases in domestic saving do not accompany higher budget deficits, the deficits will necessarily lead to higher net capital inflow.

The logic behind this relationship is straightforward. Higher budget deficits lead to increased government demand for credit. Unless this increase in borrowing is offset by a reduction in private demand for credit or an increase in private saving, the net capital inflow from abroad must rise. Such a rise in the net capital inflow could be due to increased borrowing from foreigners, reduced foreign lending by domestic investors, or some combination of the two. Regardless of how it is achieved, though, the increased net inflow of capital to the United States in recent years is thought by many to have been due primarily to the unprecedented size of federal budget deficits.

Similarly, these analysts point to budget deficits as the ultimate reason for the sharp deterioration of the U.S. foreign trade balance

⁵ The precise timing of increased capital inflow depends on whether published data or data adjusted for introduction of international banking facilities are used. If official data are used, the net capital inflow did not increase appreciably until 1983. If adjusted data are used, the net capital inflow increased steadily beginning in 1981. A fuller explanation of this point is given below.

in recent years. They argue that increased budget deficits led to increased interest rates to ration the limited credit supply.⁶ And higher interest rates in the United States than abroad caused foreign investors to shift funds into U.S. assets, a move that contributed to the sustained rise in the exchange value of the dollar. The strength of the dollar, in turn, was a major factor in the deterioration of the merchandise trade balance. In this way, it is argued, the budget deficit led to massive trade deficits that have accompanied the large net capital inflow.

The robust recovery of the U.S. economy and rapid growth of investment spending in 1983 and 1984 may also have contributed to increased net capital inflows. Economic growth and investment spending in the United States have been very strong, especially when compared with European economies. As a result, private credit demands have increased more in the United States than in most other countries, contributing to higher U.S. interest rates that have encouraged the inflow of foreign capital and discouraged the outflow of domestic capital. Moreover, some argue that the relative strength of the U.S. economic expansion has improved the long-run prospects for a healthy U.S. economy, especially because robust economic growth has been

⁶ This argument assumes that an increase in the budget deficit leads to an increase in the real interest rate. There are some who do not believe that such a link exists. For support, they refer to a study published by the U.S. Treasury Department, "The Effects of Deficits on Prices of Financial Assets," January 1984. The argument is that an increase in the budget deficit implies an increase in future taxes, so that savings rise by an equal amount, with no change in interest rates. However, there are also many economists who believe that an increase in the budget deficit does lead to a higher interest rate. For evidence in support of this proposition, see Michael Hutchison and David Pyle, "The Real Interest Rate/Budget Deficit Link: International Evidence, 1973-82," *Economic Review*, Federal Reserve Bank of San Francisco, Fall 1984, pp. 26-35.

achieved without a reacceleration of inflation. If so, both foreign and domestic investors may have become more inclined to buy U.S. assets, thereby contributing to the increased net capital inflow.

There is no consensus on why the economy and investment spending have grown so rapidly. Supply-side economists and some members of the Reagan administration attribute most of the improved economic performance to the favorable supply-side effects of the 1981 tax cuts. By providing incentives for investment, saving, and work, they argue, the tax cuts led to a boom in investment, productivity, and economic activity. In contrast, other analysts say the primary effects of the 1981 tax cuts were through traditional demand stimulus channels. While admitting that the large business tax cuts increased the profitability of real investment, these analysts attribute most of the rapid economic growth in 1983 and 1984 to the large fiscal stimulus resulting from the reduction in taxes that was not offset by a commensurate reduction in government spending. To the extent that this explanation is correct, part of the contribution of rapid economic and investment growth to the net capital inflow is an indirect effect of increased budget deficits.

Some think the LDC debt crisis contributed to the net capital inflow to the United States. As investors became concerned about the ability of LDC debtors to service their foreign debt, they shifted funds to the United States to guard against capital controls and other financial disruptions. Together with increased political instability in Europe, the financial difficulties of LDC debtors made the United States' reputation as a safe haven for investments more important in investors' portfolio decisions.

Banks in the United States substantially reduced their lending to LDC's after the Mexi-

can debt crisis in 1982. Some analysts claim that the cutback in U.S. bank lending to LDC's has been a major factor in reducing capital outflows from the United States and that the capital flight from Latin America and other areas in search of a safe haven for investments has been a major factor increasing capital inflows to the United States.

The importance of the LDC debt crisis as a cause of the U.S. net capital inflow is questionable, however. Although the financial difficulties of LDC's caused an increase in the net capital inflow to the United States from those countries, the increased flow of funds from LDC's could have been lent to other countries were it not for the deficiency of domestic sources of funds in the United States in the face of rapidly growing credit demands. Since net capital inflows are determined by domestic spending and saving decisions, the LDC debt crisis is a cause of U.S. net capital inflows only to the extent that it lowered U.S. saving or increased U.S. investment and budget deficits. For example, the LDC debt crisis may have stimulated investment or lowered saving in the United States by keeping U.S. interest rates lower than they might otherwise have been. But the size of this effect may well have been small. Therefore, the most significant effect of the LDC debt crisis on U.S. capital inflows has probably been on the channels through which that inflow occurred and the accompanying interest rates rather than on the size of the inflow itself. In short, given the deficiency of domestic saving compared with investment and budget deficits, the United States would have had to attract capital from other countries if not from LDC's. For that reason, neither the LDC debt crisis nor the view of the United States as a safe haven for investment has likely been a major cause of the increase in U.S. net capital inflows.

Empirical evidence on causes of net capital inflows

Several types of empirical evidence can be brought to bear in judging what factors have been most important in causing U.S. net capital inflows. One possible source of evidence is the composition of net capital inflows. Some analysts argue that the causes of the net capital inflow can be inferred from the types of assets foreigners have acquired and the channels through which the funds have flowed. According to this reasoning, for example, the large \$59.3 billion increase between 1980 and 1984 in net flows of funds through banks could be considered evidence that the LDC debt crisis was responsible for much of the increased net capital inflow. Much of the capital transferred from LDC's into U.S. assets may have been deposited in U.S. banks. In addition, U.S. banks reduced their lending to LDC's. Both of these actions contributed to an increase in the net bank flows from LDC's to the United States.

But this kind of evidence is unreliable. Banks, especially those with foreign branches, obtain funds wherever deposits can be found and lend funds wherever creditworthy borrowers can be found. Moreover, banks are financial intermediaries that arbitrage any interest rate differentials. For these reasons, a significant part of any change in capital flows might occur through banks regardless of the ultimate cause of the change. For example, a capital inflow caused by government budget deficits that caused an increase in U.S. interest rates would lead banks to borrow more abroad, where funds are cheaper, and lend more domestically, where loan rates are higher. Therefore, a rise in net capital inflows might be manifested as increased inflows through banks even if the cause of the net capital inflow were higher budget deficits. Similarly,

the relatively small \$20.3 billion increase in direct investment between 1980 and 1984 in the United States is not decisive evidence against the claim that the net capital inflow is due to business tax cuts having improved the profitability of real investment in U.S. businesses. Because credit is fungible, the sources of credit and the channels through which it flows are not reliable evidence regarding the causes of the increased demand for credit.

Another type of evidence is the size of changes in the components of domestic saving and spending. These changes can be analyzed in the framework provided by Equation 1. According to that equation, changes in the net capital inflow from 1980 to 1984 must be equal to the change in government budget deficits and investment spending minus the changes in domestic saving. As shown in Table 1, the U.S. net capital inflow increased \$104.9 billion from 1980 to 1984. Over the same period, the combined budget deficits of all levels of government rose \$92.1 billion, net investment spending rose \$125.8 billion, and net private saving rose \$129.3 billion. The larger rise in investment spending than in budget deficits since 1980 might seem to imply that business tax cuts or the robustness of the U.S. economic expansion have been the most important factors causing the net capital inflow. But this conclusion could be affected by the short-run nature of the comparison. In particular, both investment spending and budget deficits were affected in 1980 by the credit control program and the recession. As a result, comparison of changes in sources and uses of funds from 1980 to 1984 is not a reliable way of evaluating the causes of increased net capital inflows.

A more reliable source of evidence is the deviations of sources and uses of funds from their long-run trends. Comparing the ratios of budget deficits, investment, and saving to

TABLE 1
Changes in sources and uses of funds, 1980 to 1984
 (Billions of dollars)

	<u>Net Capital Inflow</u>	<u>Budget Deficit</u>	<u>Net Investment</u>	<u>Net Private Saving</u>
Change from 1980 to 1984	104.9	92.1	125.8	129.3
Notes: The net capital inflow does not equal the budget deficit plus investment minus savings due to several minor factors. These factors reflect statistical discrepancies and differences between the National Income and Product accounts and the Balance of Payments accounts. The budget deficit is the combined federal, state, and local budget deficits; investment is net private domestic investment; saving is net private domestic saving.				

GNP in recent years with the average ratios in the 1970s sheds light on the factors responsible for the recent scarcity of domestic sources of funds relative to domestic uses of funds. This comparison indicates that the biggest change in recent years has been in the size of budget deficits. Budget deficits averaged only 1.2 percent of GNP in the 1970s. But by 1984, budget deficits had risen to 3.4 percent of GNP. In contrast, the ratios of net investment and net saving to GNP in 1984 were 6.4 percent and 7.4 percent, very close to their average values in the 1970s. Although investment grew rapidly in 1983 and 1984, it started from a very low base. As a result, net investment had only returned to a normal level by 1984. Moreover, the rapid investment growth may have come to an end. Projections based on recent data suggest that business spending on plant and equipment as well as spending on housing will increase only modestly in 1985. This projected dissipation of growth in investment spending conforms with analysis indicating that the effects of the 1981 business tax cuts would have only a temporary stimulative impact on investment spending.⁷ Overall,

⁷ See, for example, John Makin and Raymond Sauer, "Effects of Debt Accumulation on Capital Formation," American Enterprise Institute, 1984.

then, comparison of sources and uses of funds in recent years with historical values suggests that increased budget deficits have been an important—perhaps even the predominant—cause of net capital inflows in recent years.

The conclusion that budget deficits are an important cause of the net capital inflow is confirmed by evidence from an econometric model. The staff at the Federal Reserve's Board of Governors has developed a model of international economic relationships. The model is called the multicountry model (MCM) because it includes models of both the U.S. economy and other major economies. Simulations of the model have been conducted to determine the effect of U.S. budget deficits on the U.S. current account balance.⁸ Since changes in the current account balance must be

⁸ Gilles Oudiz and Jeffrey Sachs, "Macroeconomic Policy Coordination Among the Industrial Economies," *Brookings Papers on Economic Activity*, 1984:1, pp. 1-64. Sachs and Oudiz simulate the effect of a fiscal expansion on the current account, using the MCM model. They find, for example, that a \$100 billion fiscal expansion leads to a \$47 billion worsening of the current account. Peter Hooper, "International Repercussions of the U.S. Budget Deficit," Board of Governors International Finance Discussion Paper No. 246, September 1984, estimates the effect of recent fiscal policy actions on the budget deficit and the current account, also using the MCM model. He finds that such actions worsened the budget deficit by \$65 billion and the current account by \$30 billion. These estimates imply that 46

reflected in changes in net capital inflows, these simulations can be used to estimate how much increased budget deficits have contributed to the rise in the net capital inflow in recent years. According to the simulations, the increase in federal budget deficits from \$61.2 billion in 1980 to \$175.8 billion in 1984 would lead to an increase of more than \$50 billion in net capital inflows. Since the actual increase in net capital inflows from 1980 to 1984 was \$104.9 billion, the estimates from the MCM suggest that about half of the total increase in net capital inflows has been due to higher federal budget deficits. According to the MCM, therefore, large and growing budget deficits have been an important cause of the U.S. net capital inflow.

Consequences of continued net capital inflows

Net capital inflows to the United States are widely expected to continue for some time. For example, Data Resources Incorporated predictions through 2010 project a current account deficit and associated capital inflow throughout the period. Some have argued that this net capital inflow does not pose any serious problems since it has been and will continue to be due to a decrease in gross outflows rather than an increase in gross inflows. Others, however, believe that a continued net capital inflow poses serious problems. This section investigates both of these arguments.

Does the composition of the net capital inflow matter?

According to economic theory, the composition of a net capital inflow is largely unimportant.

percent of the higher budget deficit is reflected in an increase in current account deficits.

ant. The theory of international portfolio balance holds that interest rates, exchange rates, and other important economic variables depend on net asset demands—that is, on the difference between the demands for assets denominated in a particular currency and liabilities denominated in that currency.⁹ Accordingly, an increase in gross capital inflows to the United States, which results in an increase in foreign holdings of dollar assets, has the same aggregate effects as a reduction in gross capital outflows from the United States, which results in a reduction in dollar liabilities by foreigners. Since both increase the net dollar assets of foreigners, it is not necessary to know the composition of an increase in net capital inflows to the United States to predict their overall impact.

Based on this economic theory, the composition of net capital inflows has little if any effect on the price and quantity of credit to foreigners. If the net capital inflow is due to increased lending by foreigners to U.S. residents, the net capital inflow literally drains capital from abroad. If the net capital inflow is due to a reduction in U.S. lending abroad, the supplement to foreign domestic saving available to foreign borrowers is being reduced. Whether this is characterized as a drain on foreign capital or not, the important point is that reduction of U.S. lending abroad reduces the amount of credit available to foreign borrowers

⁹ See, for example, William Branson and Dale Henderson, "The Specification and Influence of Asset Prices," in Ronald Jones and Peter Kenen, editors, *Handbook of International Economics*. Volume 2, North Holland, New York, 1985.

Strictly speaking, the balance of payments accounts record the increase in foreign claims against the United States (the gross inflow) and the increase in U.S. claims against foreigners (the gross outflow), which is not quite the same as an increase in dollar-denominated assets or liabilities. For simplicity, though, this distinction is not made in the remainder of this article.

by the same amount as an increase in U.S. borrowing abroad.¹⁰

Because increased net capital inflows to the United States imply less capital available for foreign borrowers, regardless of the composition of the increased net capital inflow, foreign interest rates must be higher than otherwise to ration the reduced supply of loanable funds. Therefore, an increase in net capital inflows to the United States inevitably reduces the availability of credit to foreign borrowers and increases the interest rate they pay, regardless of the composition of the net capital inflow.

Nor does the composition of a net capital inflow substantially alter the possibility of portfolio saturation, which might cause a precipitous decline in the value of the dollar. If the net capital inflow is due primarily to an increase in gross inflows, foreign investors could decide at some point to stop acquiring dollar assets or even to liquidate their current holdings. Such a decision would presumably be based on a judgment that their portfolios were becoming too risky because they were too heavily tilted toward dollar assets. Diversifying portfolios by including assets denominated in different currencies reduces risk from exchange rate changes and other economic developments that have differential effects on the value of the

assets. If there is diminishing marginal risk reduction from continuing to build up dollar assets in a portfolio, investors would become increasingly reluctant to acquire dollar assets as their percentage of the total portfolio increase. In this situation, relatively small changes in expected yields on dollar assets—brought about, for example, by changes in exchange rate expectations—could lead to very large reductions in desired dollar holdings. The resulting liquidation of dollar assets by foreign investors could cause a sharp decline in the exchange value of the dollar. Therefore, an increase in capital inflows can result in portfolio saturation that could increase the risk of a precipitous decline in the dollar.

Analogous reasoning suggests that a reduction in gross capital outflows may pose similar risks. A reduction in gross outflows increases the proportion of dollar assets in the portfolios of U.S. residents. Like foreigners, domestic residents can reduce risk by holding a diversified portfolio containing both dollar and non-dollar assets. Although U.S. residents may be less sensitive to expected exchange rate movements, if they too become increasingly reluctant to continue acquiring dollar assets, liquidation of those assets could also disrupt foreign exchange markets and domestic credit markets.

The real world is far more complicated than economic theory suggests. Capital markets are not frictionless; some investors are liquidity-constrained; and domestic investors may evaluate risks differently or have different information available than do foreign investors. For these reasons, the composition of a net capital inflow may have some aggregate effects. But these effects are presumably minor, especially if the net capital inflow results from important changes in both gross outflows and gross inflows.

This leads to the second question regarding the sanguine attitude about increased net capi-

¹⁰ A physical analogy helps demonstrate this equivalence. Imagine a situation in which the amount of water in a bathtub is in "equilibrium" at 100 gallons, with 2 gallons being added and 2 gallons being drained each hour. The amount of water in the bathtub can be reduced 1 gallon an hour either by increasing the outflow of water by 1 gallon an hour or by reducing the inflow of water by the same rate. If the amount of water in the bathtub is considered to be the funds available to foreign borrowers, an increase in the capital outflow from abroad—that is, increased gross capital inflows to the United States—has the same effect as a reduction in the capital inflow from the United States—that is, lower gross capital outflows from the United States. For the same reason that only the difference between inflows and outflows matters in determining the change in the water level in the tub, only the difference between gross capital inflows and gross capital outflows matters in determining the amount of credit available to foreign borrowers.

tal inflow—the extent to which it has been due to reduced gross outflows rather than increased gross inflows of private capital.

Composition of the net capital inflow

Those who deny the United States has become more dependent on foreign capital have focused primarily on the published balance of payments statistics from 1981 to 1984. According to those statistics, private capital inflows increased only \$18 billion from 1981 to 1984, while private capital outflows declined \$89 billion. It appears from these figures that the increased net capital inflow was due almost entirely to a cutback in foreign lending rather than to an increase in borrowing from abroad.

A very different picture emerges, however, when 1980 is used as the first year in the comparison. Private capital outflows declined \$60 billion from 1980 to 1984, only slightly larger than the increased private inflows of \$51 billion. This comparison suggests that the increased net capital inflow has been due in almost equal measure to reductions in foreign lending and increases in foreign borrowing. A similar conclusion is suggested by other comparisons that do not use 1981 as the base year.¹¹ Thus, the claim that the growing trade deficit has been financed without significantly greater dependence on foreign capital appears to be very sensitive to the choice of the period used.

Closer examination of the data suggests that capital flows in 1981 and 1982 were aberrations from the underlying trends. Private capital outflows jumped \$28 billion in 1981 and increased another \$7 billion in 1982 before

¹¹ For example, comparison of the averages for 1977-80 to the averages for 1981-84 also indicates that the increased net capital inflow in recent years has been about equally divided between a reduction in gross outflows and an increase in gross inflows.

declining sharply in the last two years. Similarly, private capital inflows jumped \$34 billion in 1981, increased an additional \$16 billion in 1982, and then leveled off on balance in the last two years.

The seemingly incongruous capital flow statistics in 1981 and 1982 may well result from aberrations caused by the introduction of international banking facilities (IBF's) in late 1981. Until then, U.S. banks had conducted much of their international business from offshore branches to avoid the competitive disadvantage of regulations that applied to domestic branches. In response, Congress authorized banks to establish IBF's in the United States to conduct international business on the same basis as U.S. branches of foreign banks. As a consequence, U.S. banks shifted both assets and liabilities from banking offices abroad to domestic offices. This had the effect of raising both reported capital outflows and reported capital inflows substantially in 1981 and 1982. It has been estimated that the introduction of IBF's inflated capital outflows and capital inflows by an average of \$58 billion in 1981 and 1982.¹² Although admittedly imprecise, these estimates suggest that the official statistics on capital flows in 1981 and 1982 are so contaminated that use of either year as the base for evaluating the extent of increased dependence on foreign capital can be very misleading. For this reason, the comparisons that do not use 1981 or 1982 as the base—such as those comparing 1984 with 1980—are much more indicative of the trends regarding dependence on capital flows.¹³ These comparisons

¹² Lois Stekler and Peter Isard, "U.S. International Capital Flows and the Dollar: Recent Developments and Concerns." *Brookings Papers on Economic Activity*, forthcoming.

¹³ Moreover, using a 1980 base for computing the growing dependence on foreign capital allows an evaluation of the effects of the 1981 tax cuts, which are commonly thought to have been a major factor contributing to the net capital inflows.

indicate that the United States has indeed become increasingly dependent on foreign capital in recent years.

Consequences of continued net capital inflows

If continued, large net capital inflows could have several adverse consequences. Among the most important are a reduction in future living standards, a drain of capital needed abroad, and the increased likelihood of disruptions to foreign exchange and domestic credit markets.

Large and sustained net capital inflows threaten to lower future living standards in the United States. A large buildup of foreign net dollar claims implies large future net interest payments to foreigners. To meet these interest obligations, the United States will have to export more goods and services than it imports. As a result, less will be available for domestic consumption, and the average living standard of U.S. residents will be lower than it otherwise would be.

This would not be the case, though, if the capital inflows were being used primarily to finance productive investment in the United States, as was true during much of the 19th century, when the United States borrowed from abroad to finance the building of railroads and other productive capacity. In that case, the increased future production would more than offset the higher future interest obligations, allowing increased living standards. As discussed in the preceding section, though, the predominant reason for the large capital inflows in recent years has been the increase in the federal budget deficit.

Because the high budget deficits have not been associated with investment spending that is high by historical standards, the accompanying net capital inflows represent borrowing from future consumption possibilities to

finance current consumption. Except for the possibility that the budget deficit has resulted from increased defense spending essential to the survival of future productive capacity, it seems most likely that recent capital inflows have been due to consumption exceeding current productive capacity. Under these circumstances, the United States cannot continue consuming more than it produces. To offset this current imbalance, U.S. residents will have to produce more in the future than they consume, and "pay" the remainder of the nation's domestic output to foreigners as interest on their holdings of dollar assets. In this sense, large net capital inflows are mortgaging the country's economic future, just as previous capital inflows to LDC's from the United States and elsewhere mortgaged their economic futures by leading eventually to a need to curtail consumption to pay the interest on their foreign debt. Mexico's mortgage has come due; the United States' has not. But the ultimate effect of sustained net capital inflows to finance consumption is unavoidable.

Capital inflows also threaten to drain capital from abroad that is needed for productive investment. As pointed out above, a net capital inflow to the United States reduces the quantity of credit available to foreign borrowers, regardless of the composition of that inflow. Currently, such a drain may be relatively innocuous. Because of the slow recovery of European economies from the worldwide recession of 1981-82 and the LDC debt problems that have effectively precluded their borrowing in the last few years, foreign demand for credit to finance productive investment is comparatively low. But as European economies move toward full employment and LDC debtor countries work their way out of their difficulties, foreign demand for credit could rise substantially. If so, world interest rates would rise, increasingly crowding out domestic

and foreign investment. Whereas it used to be thought that budget deficits crowded out only domestic investment, in the current world economy with flexible exchange rates and integrated world capital markets, the crowding out effect of budget deficits is allocated among domestic investment, tradeable goods sectors, and foreign investment.

Continued large net capital inflows also pose the increasing danger of disruptions to exchange and domestic credit markets. Net capital inflows lead to commensurate increases in the net dollar asset holdings of foreigners. Since portfolio decisions depend on net asset positions, continued large net capital inflows could at some point lead to saturation of foreign portfolios with dollar assets.¹⁴ For the same reason, portfolios of U.S. investors could also become saturated with dollar assets because U.S. investors, like foreign investors, prefer to hold portfolios that are diversified between dollar assets and other assets. The desired ratio of dollar assets to nondollar assets is, of course, higher for U.S. residents than for foreigners, and changes in desired holdings may respond somewhat differently to interest rate or exchange rate expectations. But the growing proportion of net dollar claims in both foreign and domestic portfolios could lead to portfolio saturation that poses risk for the smooth functioning of exchange markets and domestic credit markets. Resistance to acquiring more dollar claims could lead to a sharp fall in the exchange value of the dollar and a sharp rise in U.S. interest rates.

Portfolio saturation is, to be sure, a relative rather than an absolute concept. There is no unique amount of dollar claims beyond which

¹⁴ At the end of 1983, U.S. claims on foreigners were \$887 billion and foreign claims on the United States were \$781 billion, for a net asset position of \$106 billion. The net capital inflow in 1984 was \$77 billion, which reduced the net asset position to \$29 billion at the end of 1984. This means that the United States will almost surely become a net debtor in 1985.

investors refuse to acquire more assets. But, as the relative proportion of dollar assets increases, investors become more reluctant to acquire additional dollar assets. They can be induced to buy more only by increasingly higher expected returns, due either to expected capital gains because of expected exchange rate changes or to higher expected real yields on the assets themselves.

However, portfolio saturation would not necessarily lead to gradual and nondisruptive changes in exchange rates and interest rates. Because asset markets are heavily influenced by expectations, asset prices are highly volatile, even without such extraordinary circumstances as rapid growth in net dollar asset positions resulting from large net capital inflows. With such circumstances, the effects of changes in expectations could be magnified. Moreover, increasing portfolio saturation could itself lead to changes in expectations about exchange rates and interest rates that would, in effect, become a self-fulfilling prophecy. To the extent that either of these developments occur, continued large net capital inflows increase the risk of a precipitous decline in the dollar, accompanied by a sharp increase in U.S. interest rates, that would disrupt both the domestic and world economies.

In contrast, progress in reducing the federal budget deficit could lead to a gradual decline in interest rates and the exchange rate. Reduction in the budget deficit would alleviate the deficiency of domestic credit supplies relative to domestic credit demands. The consequent relief in pressure on interest rates would reduce the attractiveness of U.S. assets to both foreign and domestic investors, thereby reducing the net capital inflow and the exchange value of the dollar. The decline in the exchange value of the dollar to a more sustainable level would improve the competitiveness of U.S. goods in domestic and international markets. And this

improved competitive position would lower the trade deficit. Therefore, cutting the budget deficit could set in motion forces that would reduce dependence on foreign capital and improve the prospects for sustainable and balanced real growth of the U.S. economy.

Conclusion

The increased net capital inflow and associated growing dependence on foreign capital could pose serious risks for the U.S. and world economies. But policy actions to reduce the dependence on foreign capital are not likely to

be successful unless they treat the root causes of the problem. The fundamental problem stems from the United States consuming more than it produces. Attempting to solve the problem through exchange controls, exchange market intervention, expansionary monetary policy, or increased trade barriers would at most only temporarily obscure the fundamental source of the problem. Empirical evidence implies that high government budget deficits have been a major factor contributing to large U.S. net capital inflows. As a consequence, reducing budget deficits would reduce the troublesome U.S. dependence on foreign capital.

Economic Review
Federal Reserve Bank of Kansas City
Kansas City, Missouri 64198
June 1985, Vol. 70, No. 6