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Measuring Bank Performance

To understand how well a bank is doing, we need to start by looking at a bank's income statement, the description of the sources of income and expenses that affect the bank's profitability.

Bank's Income Statement

The end-of-year 2005 income statement for all federally insured commercial banks appears in Table 1.

Operating Income. *Operating income* is the income that comes from a bank's ongoing operations. Most of a bank's operating income is generated by interest on its assets, particularly loans. As we see in Table 1, in 2005 interest income represented 68.3% of commercial banks' operating income. Interest income fluctuates with the level of interest rates, and so its percentage of operating income is highest when interest rates are at peak levels. That is exactly what happened in 1981, when interest rates rose above 15% and interest income rose to 93% of total bank operating income.

Noninterest income is generated partly by service charges on deposit accounts, but the bulk of it comes from the off-balance-sheet activities, which generate fees or trading profits for the bank. The importance of these off-balance-sheet activities to bank profits has been growing in recent years. Whereas in 1980 other noninterest income from off-balance-sheet activities represented only 5% of operating income, it reached 31.7% in 2005.

Operating Expenses. *Operating expenses* are the expenses incurred in conducting the bank's ongoing operations. An important component of a bank's operating expenses is the interest payments that it must make on its liabilities, particularly on its deposits. Just as interest income varies with the level of interest rates, so do interest expenses. Interest expenses as a percentage of total operating expenses reached a peak of 74% in 1981, when interest rates were at their highest, and fell to 35.3% in 2005 as interest rates moved lower. Noninterest expenses include the costs of running a banking business: salaries for tellers and officers, rent on bank buildings, purchases of equipment such as desks and vaults, and servicing costs of equipment such as computers.

The final item listed under operating expenses is provisions for loan losses. When a bank has a bad debt or anticipates that a loan might become a bad debt in the future, it can write up the loss as a current expense in its income statement under the "provision for loan losses" heading. Provisions for loan losses are directly related to loan loss reserves. When a bank wants to increase its loan loss reserves account by, say, \$1 mil-

TABLE 1 Income Statement for All Federally Insured Commercial Banks, 2005

	Amount (\$ billions)	Share of Operating Income or Expenses (%)
Operating Income		
Interest income	434.6	68.3
Interest on loans	326.2	51.3
Interest on securities	67.2	10.6
Other interest	41.2	6.5
Noninterest income	201.4	31.7
Service charges on deposit accounts	33.8	5.3
Other noninterest income	167.6	26.4
<i>Total operating income</i>	<u>636</u>	<u>100.0</u>
Operating Expenses		
Interest expenses	165.1	35.3
Interest on deposits	106.1	22.7
Interest on fed funds and repos	20.4	4.4
Other	38.6	8.2
Noninterest expenses	276.2	59.0
Salaries and employee benefits	122.9	26.3
Premises and equipment	34.9	7.5
Other	118.4	25.3
Provisions for loan losses	<u>26.6</u>	<u>5.7</u>
<i>Total operating expense</i>	<u>467.9</u>	<u>100.0</u>
Net Operating Income	168.1	
Gains (losses) on securities	-0.16	
Extraordinary items, net	0.24	
Income taxes	-54	
Net Income	114.2	

Source: www.fdic.gov/banks/statistical/statistics/0106/cbr

lion, it does this by adding \$1 million to its provisions for loan losses. Loan loss reserves rise when this is done because by increasing expenses when losses have not yet occurred, earnings are being set aside to deal with the losses in the future.

Provisions for loan losses have been a major element in fluctuating bank profits in recent years. The 1980s brought the third-world debt crisis; a sharp decline in energy prices in 1986, which caused substantial losses on loans to energy producers; and a collapse in the real estate market. As a result, provisions for loan losses were particularly high in the late 1980s, reaching a peak of 13% of operating expenses in 1987. Since then, losses on loans have begun to subside, and in 2005, provisions for loan losses dropped to 5.7% of operating expenses.

Income. Subtracting the \$467.9 billion in operating expenses from the \$636 billion of operating income in 2005 yields net operating income of \$168.1 billion. Net operating income is closely watched by bank managers, bank shareholders, and bank regulators because it indicates how well the bank is doing on an ongoing basis.

Two items, gains (or losses) on securities sold by banks (−\$157 million) and net extraordinary items, which are events or transactions that are both unusual and infrequent (insignificant), are added to the \$168.1 billion net operating income figure to get the \$168.2 billion figure for net income before taxes. Net income before taxes is more commonly referred to as profits before taxes. Subtracting the \$54 billion of income taxes then results in \$114.2 billion of net income. Net income, more commonly referred to as profits after taxes, is the figure that tells us most directly how well the bank is doing because it is the amount that the bank has available to keep as retained earnings or to pay out to stockholders as dividends.

Measures of Bank Performance

Although net income gives us an idea of how well a bank is doing, it suffers from one major drawback: It does not adjust for the bank's size, thus making it hard to compare how well one bank is doing relative to another. A basic measure of bank profitability that corrects for the size of the bank is the return on assets (*ROA*), mentioned earlier in the chapter, which divides the net income of the bank by the amount of its assets. *ROA* is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profits. At the beginning of 2006, the assets of all federally insured commercial banks amounted to \$9,040 billion, so using the \$114.2 billion net income figure from Table 1 gives us a return on assets of:

$$ROA = \frac{\text{net income}}{\text{assets}} = \frac{114.2}{9,040} = 0.0126 = 1.26\%$$

Although *ROA* provides useful information about bank profitability, we have already seen that it is not what the bank's owners (equity holders) care about most. They are more concerned about how much the bank is earning on their equity investment, an amount that is measured by the return on equity (*ROE*), the net income per dollar of equity capital. At the beginning of 2006, equity capital for all federally insured commercial banks was \$912.7 billion, so the *ROE* was therefore:

$$ROE = \frac{\text{net income}}{\text{capital}} = \frac{114.2}{912.7} = 0.1251 = 12.51\%$$

Another commonly watched measure of bank performance is called the *net interest margin (NIM)*, the difference between interest income and interest expenses as a percentage of total assets:

$$NIM = \frac{\text{interest income} - \text{interest expenses}}{\text{assets}}$$

As we have seen earlier in the chapter, one of a bank's primary intermediation functions is to issue liabilities and use the proceeds to purchase income-earning assets. If a bank manager has done a good job of asset and liability management such that the bank earns substantial income on its assets and has low costs on its liabilities, profits will be high. How well a bank manages its assets and liabilities is affected by the spread between

the interest earned on the bank's assets and the interest costs on its liabilities. This spread is exactly what the net interest margin measures. If the bank is able to raise funds with liabilities that have low interest costs and is able to acquire assets with high interest income, the net interest margin will be high, and the bank is likely to be highly profitable. If the interest cost of its liabilities rises relative to the interest earned on its assets, the net interest margin will fall, and bank profitability will suffer.

Recent Trends in Bank Performance Measures

Table 2 provides measures of return on assets (ROA), return on equity (ROE), and the net interest margin (NIM) for all federally insured commercial banks from 1980 to 2005. Because the relationship between bank equity capital and total assets for all commercial

TABLE 2 Measures of Bank Performance, 1980–2005

Year	Return on Assets (ROA) (%)	Return on Equity (ROE) (%)	Net Interest Margin (NIM) (%)
1980	0.77	13.38	3.33
1981	0.79	13.68	3.31
1982	0.73	12.55	3.39
1983	0.68	11.60	3.34
1984	0.66	11.04	3.47
1985	0.72	11.67	3.62
1986	0.64	10.30	3.48
1987	0.09	1.54	3.40
1988	0.82	13.74	3.57
1989	0.50	7.92	3.58
1990	0.49	7.81	3.50
1991	0.53	8.25	3.60
1992	0.94	13.86	3.89
1993	1.23	16.30	3.97
1994	1.20	15.00	3.95
1995	1.17	14.66	4.29
1996	1.19	14.45	4.27
1997	1.23	14.69	4.21
1998	1.18	13.30	3.47
1999	1.31	15.31	4.07
2000	1.19	14.02	3.95
2001	1.13	12.45	3.28
2002	1.27	13.91	3.34
2003	1.35	14.81	3.16
2004	1.24	12.25	2.97
2005	1.26	12.51	2.98

Source: www2.fdic.gov/qbp

banks remained fairly stable in the 1980s, both the *ROA* and *ROE* measures of bank performance move closely together and indicate that from the early to the late 1980s, there was a sharp decline in bank profitability. The rightmost column, net interest margin, indicates that the spread between interest income and interest expenses remained fairly stable throughout the 1980s and even improved in the late 1980s and early 1990s, which should have helped bank profits. The *NIM* measure thus tells us that the poor bank performance in the late 1980s was not the result of interest-rate movements.

The explanation of the weak performance of commercial banks in the late 1980s is that they had made many risky loans in the early 1980s that turned sour. The resulting huge increase in loan loss provisions in that period directly decreased net income and hence caused the fall in *ROA* and *ROE*. (Why bank profitability deteriorated and the consequences for the economy are discussed in Chapters 9 and 11.)

Beginning in 1992, bank performance improved substantially. The return on equity rose to nearly 14% in 1992 and remained above 12% in the 1993–2005 period. Similarly, the return on assets rose from the 0.5% level in the 1990–1991 period to around the 1.2% level in 1993–2005. The performance measures in Table 2 suggest that the banking industry has returned to health.