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BASEL II CREATES AN UNEVEN PLAYING FIELD

The 1988 Basel Capital Accord provided a minimum capital requirement of 8% of risk weighted assets for internationally active banks in order to 1) ensure an adequate level of capital and 2) competitive equality. It is the second point, competitive equality that is addressed here. Competitive equality referred to the fact that at that time, banks in the major trading countries had significantly different capital ratios. Those with lower capital ratios had lower costs of funds and a competitive advantage in the loan markets of the world. Thus, one of the purposes of the 1988 Accord was to even the playing field in terms of capital requirements. It was successful. By the turn of the century, the 8% capital standard has been adopted in more than 100 countries with internationally active banks.²

The 8% capital standard is a “one size fits all” measure. It focused on credit risk, which was a good starting point; but banks face a wider variety of risks. Accordingly, in 1996, an amendment was introduced that allowed banks to deal with trading/market risks. And in 1999, the Basel Committee on Banking Supervision proposed a New Capital Adequacy Framework to replace the 1988 Accord. The end product will be the New Basel Capital Accord (Basel II) that is expected to be adopted in 2006. The good news is that Basel II will provide greater flexibility and risk sensitivity than the 1988 Accord. The bad news is that it will create competitive inequality which was one of major reasons behind the framing of the 1988 Accord.

Basel II provides three options for calculating risk weighted assets for credit risk.³

- 1) The Standard Approach is similar to the 1988 Accord. However, some adjustments to the risk weights are made for sovereign exposures, non-governmental public sector entities, and multilateral development banks. A 100% risk weight means a full capital charge

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² “The New Basel Capital Accord,” Press Release, January 16, 2001.

³ “Overview of the New Basel Capital Accord,” April 2003.

equal to 8% of that value. A 50% risk weight means a capital charge of 4% (0.5 x 8%) of that value. For corporate lending, Basel II provides risk weights of 20%, 50%, 100%, and 150%.

2) The Foundation Internal Ratings Based (IRB) Approach.

3) The Advanced Internal Ratings Based (IRB) Approach. The Advanced IRB approach is similar to the Foundation IRB approach. However, under the Foundation IRB, the bank supervisors provide the estimates of the values used in establishing losses (e.g., loss given default [LGD], exposure at default [EAD], and maturity [M]) that are used in the models. Under the Advanced IRB, the bank provides the probability of default [PD], LGD, EAD, and M. The range of risk weights under the Foundation and Advanced IRB approaches is greater than under the Standard Approach. Credit risk mitigation and securitization are considered under both approaches.

Bank Capital

Table 1 shows the total risk based capital ratios for all FDIC-insured commercial banks in 2002. The ratios range from 17% for the smallest banks to 12% for the largest ones. There are 80 large banks with assets greater than \$10 billion, and 7,807 smaller banks. The small banks have excess capital. The capital for the large banks exceeds the 8% minimum, and provides a cushion for growth. During the 1997-2002 (4th Qtr.) period, large bank assets increased 66%. During that same period, the assets of smaller banks remained virtually unchanged.

Table 1
Total Risk Based Capital Ratio at FDIC-Insured Commercial Banks
Full Year 2002

	Less than \$100 million in assets	\$100 million to \$1 billion in assets	\$1 billion to \$10 billion in assets	Greater than \$10 billion in assets
12.78% Average capital ratio for all banks	17.10%	14.20%	14.53%	12.12%
7,887 banks	4,168	3,314	325	80

Source: *FDIC Quarterly Banking Profile*, Fourth Quarter, 2002, Table III-A
<http://www2.fdic.gov/qbp/2002dec/cb3.html>

Federal banking regulators are expected to require about twenty of the largest commercial banks to use the Advanced IRB approach. The other banks will be given a choice of using the Advanced IRB approach or continue to use the 1988 Basel Capital Accord standard. Because the smaller banks have excess capital, and less need to enter the national and international capital markets than

the large banks, the 1988 Basel Capital Accord will work for them. That leaves about 60 large banks in a quandary. Which approach should they use?

One factor affecting their decision is the cost of implementing Basel II that ranges from \$10 million for small banks to \$150 million or more for large banks.⁴ For example, Credit Suisse First Boston estimated that the initial costs of complying with Basel II would range from \$52 million to \$75 million, plus substantial costs for maintaining the systems.⁵

Stock market and debt market values are important too. Some bankers whose stocks are actively traded believe that they must choose the Advanced IRB approach if they want to be considered major league players by equity analysts and shareholders. Otherwise, they will be considered minor league players, and it could adversely affect the price of their stocks. The issue of whether a bank is a major league player appears to be of greater concern to equity analysts than to credit rating agencies.

Different Methods of Calculating Credit Risk Give Different Capital Requirements

Large banks will probably select the Advanced IRB method for calculating risk weighted assets because it gives them the greatest potential for reducing the amount capital that they must allocate for credit risk. Thus, a bank using the Advanced IRB method for calculating risk may have lower capital requirements for a loan than a bank using the 1988 Basel Accord standards. By way of illustration, consider a \$100 commercial loan with a 1-year maturity. An FDIC study by French, Stark, Cave, and Feid (2003) revealed that under the Standard Approach – which is similar to the 1988 Basel Accord standards, the loan has a 100% risk weight and the capital charge is \$8. Under the Advanced IRB approach, if the loan has an initial S&P rating of “A+,” a 10% loss given default (LGD), and a 0.3 probability of default (PD), it would have a 1.72 risk weight that equates to a capital charge of \$0.14 ($\$8 \times 0.0172 = \0.1376).

The LGD, PD and EAD used in the Advanced IRB method to evaluate a particular loan may vary from bank to bank depending on the underlying assumptions, judgments, quality and quantity of the data, and the models they use. It is possible that some banks using the Advanced IRB method may understate the risks to minimize the initial risk capital required in order to price a loan below their competitors. Even if such banks don’t “game” the system, the Advanced IRB typically produces lower capital requirements. To the extent that capital is taken into account in pricing loans, this creates an uneven playing field for the 7,800+ banks using the 1988 Basel Accord standard.

Real Estate

Real estate loans are singled out because they constitute a larger percentage of the loan portfolios of the larger regional banks than of the largest banks in our system. The risk weights assigned by Basel II to real estate loans

⁴ Petrou (2003).

⁵ Ervin (2003).

appear to be excessive in light of the changes that have occurred in that industry. The past and the present are discussed below.

An FDIC study, *History of the Eighties* (1997, Vol. 1), found that real estate loans were the main cause of losses at failed and surviving banks in the U.S. in the 1980s and early 1990s. An International Monetary Fund study by Lindgren, Garcia, and Saal (1996) found that real estate loans contributed to banking sector problems in Finland, France, Japan, Malaysia, Norway, Spain, and Sweden. A World Bank study by Sheng (1996) identified real estate losses with banking problems in Argentina, Chile, Columbia, Ghana, Yugoslavia, and elsewhere. Finally, Gup (1998), studying international banking crises, identified real estate loans as contributing to more bank failures than any other category of loans. The bottom line is that real estate lending can be risky. Why?

The 1985-1991 Period

In order to answer that question for real estate loans in the U.S., we examine one of the worst periods in banking history, and then contrast it to 2002. As shown in Table 2, 1,260 FDIC-insured commercial banks failed during the 1985-1992 period. During this period, real estate loans expressed as a percentage of net loans and leases increased from 27% to 44%.

In order to examine the failed banks in greater detail, we focus on 1991.⁶ Table 3 shows that most of the banks that failed were small: 69% had assets of less than \$100 million and 23% had assets \$100 million to \$1 billion. Stated otherwise, 92% of the banks that failed were small, community banks. Table 3 also reveals that most of the failed banks were located in the Northeast and Southwest.

Bad real estate loans were a major factor in many of the failures. Figure 1 shows a map of troubled real estate loans by state in 1991. The darkest color on the map depicts states with 8% or more troubled real estate assets. They are located primarily in the Southwest and Northeast. Banks located in Texas, Connecticut, and Massachusetts accounted for the greatest concentration of failures. Other parts of the country fared better.

The map in Figure 1 and the data in Tables 3 provide unique insights. The real estate problems were highly concentrated in selected states. Because small banks serve their local communities, they were impacted the most by downturns in their real estate markets in the sense that they could not diversify their real estate loan risk. The same was true for the larger banks that failed. However, the composition of loans and charge-offs rates of loans differed substantially between small and large banks (see Table 5).

In the early 1990s, bank operations were restricted geographically. It was not until 1994 that the Riegle-Neal Interstate Branching Efficiency Act was passed that allowed interstate bank acquisitions.

In 1991, commercial and industrial loans accounted for 27% of total loans and leases and real estate loans accounted for about 43%. However, as shown in Table 4 – FDIC Assets in Liquidation, C&I loans exceeded real estate loans.

⁶ 1991 was selected because the data were complete and consistent in the sources cited in Tables 2-5. Data for 1992 was not consistent.

This suggests that commercial loans also contributed significantly to bank failures, and that bad real estate loans were not the sole cause.

Table 2
FDIC Insured Bank Failures, Deposits, and Real Estate Loans

Year	Bank Failures (1,260)	Bank Deposits at Failed Banks \$ bill. (\$180)	Total Real Estate Loans at all banks \$ bill.	Net Loans and Leases \$ bill	Real Estate loans/net Loans and Leases %
1992	120	\$41	\$868	\$1,977	43.9%
1991	124	54	851	1,998	42.6
1990	168	15	830	2,055	40.4
1989	206	24	762	2,004	38.0
1988	200	25	675	1,886	35.8
1987	184	6	600	1,779	33.7
1986	138	7	515	1,728	29.8
1985	120	8	439	1,608	27.3

Annual Report 2002, FDIC, p. 111; FDIC, "Real Estate Loans," Table CB12, <http://www2fdic.gov/hsob/hsobRpt.asp>.

Table 3
1991 Failed Banks by Asset Size and Location

Bank Asset Size	1991 Failed Banks
Greater than \$10 billion	2 (1%)
\$1 billion - \$10 billion	9 (7%)
\$100 million - \$1 billion	28 (23%)
Less than \$100 million	85 (69%)
Total	124 100%
Northeast	45 (36%)
Southwest	38 (31%)

"Banks Failures and Assistance," 1991, FDIC, <http://www.fdic.gov/bank/historical/bank/1991/index.html>

Table 4
1991 FDIC End of Year Assets in Liquidation

Asset Type	Book Value (\$ billions)
Commercial Loans	\$15.3
Mortgage Loans	12.8
Other Loans	1.4
Real Estate Owned	6.0
Judgments	1.9
Securities	0.3
Other Assets	5.6
Total	\$43.3

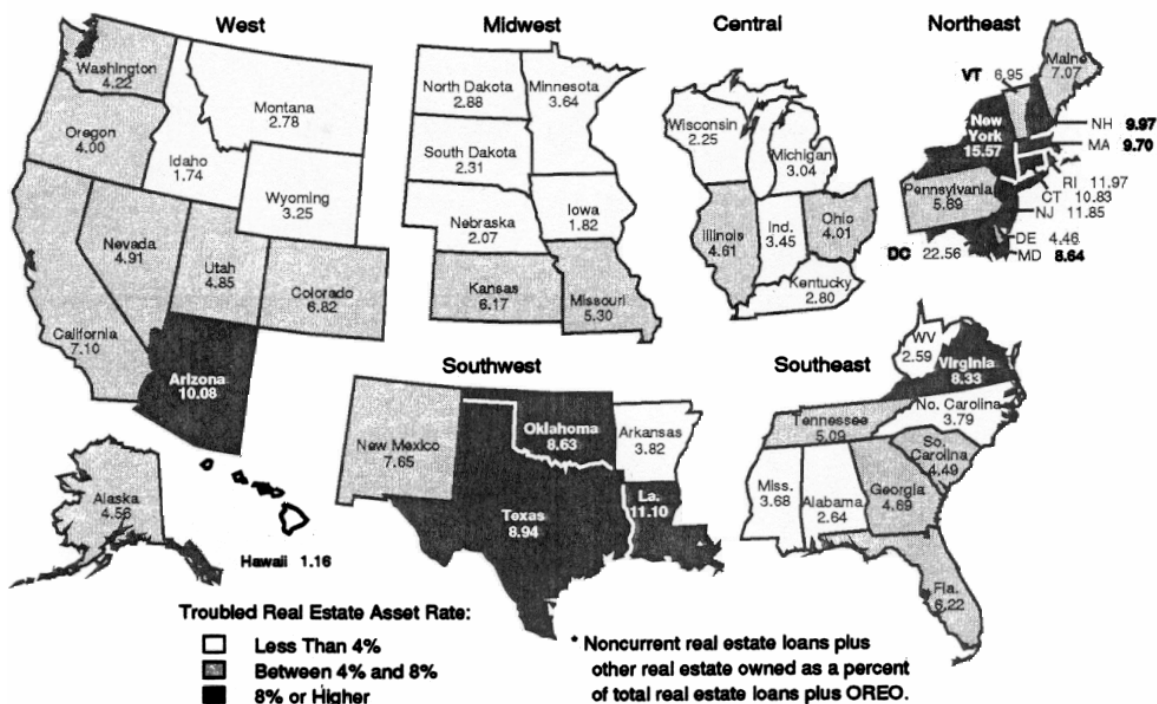
Managing the Crisis: The FDIC and RTC Experience, 1998. Table 15-4.

Table 5
Percent of Real Estate Loans Charged Off (Net), Yearend 1991

	All Banks	Assets Less than \$100 million	Assets \$100 million – \$1 billion	Assets \$1-10 Billion	Assets Greater than \$10 billion
All Real Estate Loans	0.98%	0.26	0.45	1.02	1.54
Construction & development	3.02	0.45	1.43	3.12	4.38
Commercial	1.24	0.40	0.62	1.18	2.21
Multifamily residential	2.01	0.51	0.56	1.58	3.75
1-4 Family	0.20	0.18	0.18	0.28	0.14
Home equity lines of credit	0.14	0.27	0.11	0.15	0.10

Source: *The FDIC Quarterly Banking Profile, Fourth Quarter, 1991, page 4.*

Figure 1⁷
Troubled Real Estate Asset Rates By State
December 31, 1991



Real Estate Lending 2002

The dynamics of real estate lending have changed dramatically as a result of deregulation and changes in technology.

Geographic Diversification: As a result of the previously mentioned Riegle-Neal Act, and other laws deregulating banking activities, such as Gramm-Leach-Bliley, large banks today enjoy geographic and product diversification that allows them to limit their loan risk in specific markets. No longer is a bank limited to one city or one state. It can expand throughout the United States to obtain an optimal allocation of its loan portfolio.

Securitization: Securitization of loans benefits both the sellers and the buyers. The sellers can reduce their balance sheet risks and increase their fee income. Fannie Mae, for example, buys home mortgages and mortgage related products from banks and other financial institutions. Fannie Mae also guarantees some mortgage products. The buyers can diversify their loan portfolios by buying loans from different geographic areas, and with different degrees of risk.

Derivatives: Derivatives are widely used by about 400 banks to hedge interest rate and credit risks.⁸ The *Fannie Mae 2002 Annual Report*⁹ does an

⁷ The FDIC Quarterly Banking Profile, Fourth Quarter, 1991, Chart F.

⁸ "OCC Bank Derivatives Report, Third Quarter 2002," December 2002.

outstanding job explaining how this Government Sponsored Enterprise (GSE) uses derivatives to hedge interest rate and credit risk. Table 6, from Fannie Mae's 2002 Annual Report, illustrates the type of instruments used, what they are hedging, and the purposes of the hedged transactions. The annual report of Fannie Mae should be read by all real estate lenders to gain insights about how to mitigate the risks associated with such loans.¹⁰

Table 6
Fannie Mae's Use of Derivatives

TABLE 24: PRIMARY TYPES OF DERIVATIVES USED		
Derivative Hedging Instrument	Hedged Item	Purpose of the Hedge Transaction
Pay-fixed, receive-variable interest-rate swap	Variable-rate debt Anticipated issuance of debt	To protect against an increase in interest rates by converting the debt's variable rate to a fixed rate.
Receive-fixed, pay-variable interest-rate swap	Noncallable fixed-rate debt	To protect against a decline in interest rates. Converts the debt's fixed rate to a variable rate.
Basis swap or spread-lock	Variable-rate assets and liabilities	To "lock-in" or preserve the spread between variable-rate, interest-earning assets and variable-rate, interest-bearing liabilities.
Pay-fixed swaption	Variable-rate debt	To protect against an increase in interest rates by having an option to convert floating-rate debt to a fixed rate.
Caps	Variable-rate debt	To protect against an increase in interest rates by providing a limit on the interest cost on our debt in a rising rate environment.
Receive-fixed swaption	Noncallable fixed-rate debt	To protect against a decline in interest rates by having an option to convert fixed-rate debt to floating-rate debt.
Foreign currency swaps	Foreign currency-denominated debt	To protect against fluctuations in exchange rates on non-U.S. dollar-denominated debt by converting the interest expense and principal payment on foreign-denominated debt to U.S. dollar-denominated debt.

Loan-to-Value (LTV) Ratios: The *Fannie Mae 2002 Annual Report* (page 71) states that "LTV ratio is a strong predictor of credit performance. The likelihood of default and the gross severity of a loss in the event of a default are lower as the LTV ratio decreases, all other factors held equal." This is true for both residential and commercial real estate.

The average loan to price ratio on new single family homes in the U.S. in 2002 was 77.8%, not much different from the 75.0% in 1991.¹¹ Data are not available for commercial and other real estate LTVs. Nevertheless, the same principal applies – high LTVs are associated with high risk.

Credit Scores: In recent years, credit scores developed by Fair Isaac & Co. (FICO scores) have become widely used as an indicator of credit quality for retail borrowers.¹² The FICO scores range from 150 to 950. Scores below 620

⁹ See pages 61-63 in the *Fannie Mae 2002 Annual Report*.

¹⁰ Also see Poole (2003) for a discussion of the GSEs role in the housing markets and financial stability.

¹¹ *Federal Reserve Bulletin*, May 2003, A 32; U.S. Department of Commerce, *Statistical Abstract of the United States, 1993*, Table 811.

¹² For additional information, see www.myfico.com.

are considered subprime. The higher the score the better, and the less likely the chance of default.

Bank Failures and Loans Charged-Off in 2002: Ten FDIC insured banks failed in 2002, the largest number of bank failures since 1994. The failures reflected slow economic growth and problems with subprime lending. The data presented in Table 7 shows the loans that were charged off in 2002. Notice that all real estate loans had a charge-off rate of 0.15%, while C&I loans and loans to individuals had charge-off rates of 1.76% and 3.34% respectively.

This may suggest that the real estate market has suffered less than the other markets. It also may suggest that the real estate lenders have taken advantage of the risk mitigation techniques described above. In either case, it appears that real estate today is not as risky as it was during the 1985-1992 period. Accordingly, the Basel II risk weights for real estate need to be adjusted to level the playing field.

Finally, it is interesting to note that Fannie Mae and Freddie Mac, whose portfolios consist primarily of single-family and multifamily mortgage products, are required to hold far less regulatory capital (about 3%) than commercial banks (about 8%). However, the risk weight for home mortgages in the Basel II Standard approach could be as low as 40%. That risk weight translates into a regulatory capital charge of 3.2% ($40\% \times 8\% = 3.2\%$). The capital charge under the IRB Approach could range from 7.2% to 21.5% depending on the assumptions made about the probability of default (PD) and the loss given default (LGD).¹³

Both Fannie and Freddie make the point that the U.S. government does not guarantee their debts. Nevertheless, the capital markets seem willing to accept their low capital ratios. This suggests that the capital markets consider their real estate lending to be relatively low risk because of their portfolio management techniques they use.

CONCLUSIONS

The main point made here is that Basel II creates an uneven playing field for the large, but not the largest banks in the U.S. Bank regulators will require our largest banks to use the costly and complex Advanced IRB approach to comply with Basel II. Some of the other large banks believe that if they don't use that approach, it will have adverse consequences in the capital markets. If they want to be considered in the same league as the largest banks, they will have to comply with the same standards. And in this post-Enron, WorldCom, HealthSouth period of accounting skullduggery, stock analysts and investors will want to know which Basel II approach banks are using. The Securities and Exchange Commission Reg FD (Fair Disclosure) requires companies that disclose material nonpublic information to disseminate it broadly. Therefore, there is little doubt that all banks that are active in the capital markets should state in their annual reports which IRB method they use.

Another major point is that our largest banks are not as heavily invested in real estate loans as the large banks. For example, commercial real estate

¹³ "Basel Briefing 5" (May 2003), p. 22.

accounts for less than 2% of the loans at Citibank and J.P. Morgan Chase while it accounts for more than 20% of the loans at Colonial and Regions banks. The fact that the Basel II risk weights on commercial real estate loans is 150% or higher means that banks holding such loans may need more than the required 8% minimum capital to make and hold such loans. One implication of this is that banks with adequate or excess capital will make such loans. Another possibility is that the bank will issue more capital. A third implication is that, banks may get out of that business because of the high capital charges.

As a corollary, we should ask if the high capital charges on real estate are necessary. The answer is yes, and no. There is no doubt that highly concentrated loan portfolios consisting of high LTV real estate loans are very risky. That was the case in the late 1980s and early 1990s in the U.S. and it still may be the case in some foreign countries. However, in the U.S. today, real estate loan portfolios can be diversified geographically and by products, hedged with derivatives, and have less risk by having lower LTVs and higher FICO scores. These techniques will make future real estate bubbles less of a threat to financial stability than they were in the past. Fannie Mae and Freddie Mac provide examples of how such techniques can be used. In such cases, the Basel II capital risk weights are excessive.

One final thought concerning the statistical methodology of the Advanced IRB approach that permits each bank to have different capital charges for the same type of loan. As previously noted, the capital charge for home mortgages can range from 7.2% to 21.5% or more depending on the assumptions made about the probability of default (PD) and the loss given default (LGD).¹⁴ Simply stated, the IRB methodology depends too much on past data to predict future losses. Looking at the real estate problems of the 1980s in Texas and Massachusetts to predict future real estate bubbles in the 21st century is analogous to driving down a steep, winding mountain road by only looking out the back window. A crash is inevitable.

Because the risk management techniques used today are dynamic, the data and the new and existing variables in the IRB models need to be updated constantly. This is a costly and time consuming process. A bank that can afford to develop models that are advantageous to them will probably have the lowest capital charges, and a competitive advantage. Stated otherwise, once again there will be competitive inequality in bank capital. Recall that ensuring competitive equality was one of the two reasons given for enacting the 1988 Basel Capital Accord.

¹⁴ "Basel Briefing 5" (May 2003), p. 22.

Table 7
Total Loans and Percentage Charged-Off, 2002

	\$ Billions	Percentage of Total Loans and Leases	Percentage of Loans Charged-Off
Total Loans and leases	\$4,163.4	100%	1.11%
All real estate loans	2,068.0	49.7	0.15
Construction and development	207.4	5.0	0.17
Commercial real estate	555.8	13.3	0.15
Multifamily residential	71.9	1.7	0.07
Home equity loans	214.6	5.2	0.19
1-4 Family	945.9	22.7	0.14
Commercial and Industrial	912.0	21.9	1.76
Loans to Individuals	703.6	16.9	3.34
Credit card loans	275.8	6.6	6.38
Other loans to Individuals	427.8	10.3	1.46
Other loans and leases	479.8	11.5	0.58

Source: *Quarterly Banking Profile*, Fourth Quarter, 2002, Washington, D.C., Federal Deposit Insurance Corporation, 2003, Table V-A.

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