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## **China's Opening to the World: What Does It Mean for U.S. Banks?** (page 1)

by *Valentine V. Craig*

China has agreed to open its financial system to full foreign competition in December 2006. What does this financial opening mean for foreign banks? This article examines in detail the abundant opportunities and significant risks of entry into the Chinese market for U.S. banks.

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# China's Opening to the World: What Does It Mean for U.S. Banks?

by *Valentine V. Craig\**

China has agreed to open its financial system to full foreign competition in December 2006 in accordance with its commitments to the World Trade Organization (WTO). In regard to banking, it has committed to remove all geographic, client, and nonprudential restrictions on foreign banks. What does this financial opening mean for foreign banks? This article examines in detail the opportunities and risks of entry into the Chinese market for U.S. banks.

China, with 1.3 billion people, is a huge market, and it has been growing rapidly since the early 1980s with no end in sight. This growth has produced abundant opportunities in China for financial services providers. The article begins with a review of recent statistics on Chinese growth and prosperity. It then appraises the competitive landscape for U. S. banks in China, examining the Chinese capital markets, the official Chinese banks, the informal Chinese banks, and foreign banks currently operating in China. The article then looks at the specific opportunities opening up in China in retail, commercial and investment banking.

Doing business in China is not without risk. There are economic, political and demographic

trouble spots in the economy that could affect businesses operating in China. The article examines these risks. It discusses fears of an overheating market, possible protectionism by those countries to which it exports its goods, rising economic inequality in the country, and China's rapidly aging population. It then proceeds to look at the risks arising from an uncertain regulatory environment and a large unwieldy government bureaucracy. Corporate governance is generally not good, and the article reviews problems with corruption and lack of transparency in Chinese businesses, focusing particularly on Chinese banks. It then appraises the systems for ensuring a safe return of capital, concentrating on the adequacy of China's bankruptcy laws, the enforcement of contracts and legal judgments, the adequacy of its credit infrastructure, the availability of crucial personnel, and the government's commitment to open competition.

The article ends with a summary of the analysis and concluding remarks.

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### An Overview of China's Economy and Financial System

China's economy has grown tremendously over the past 20 years, as recent economic statistics make clear. This has created a demand for capital by private businesses in China, which the official domestic providers of capital—the Chinese capital markets and Chinese banks—beset with problems and focused on state-owned businesses, have not been able to satisfy. However, the government has been working to make the markets and banks more efficient and competitive and to combat fraud within them, and has made some progress. Additionally, many of the illegal “gray market” banks are currently a competitive force, and foreign banks have doubled their asset size in China over the past several years.

### Recent Economic Statistics

Since the beginning of China's open door policy in 1978, it is estimated that per capita income has increased seven times; 400 million people have risen from extreme poverty; and a middle class of approximately 100 million people has developed. *The Economist* credits China with “probably the most dramatic burst of wealth creation in human history.”<sup>1</sup> Recent economic statistics reveal just how tremendous China's economic growth has been.<sup>2</sup>

China's gross domestic product (GDP) reportedly grew 9.5 percent in 2004, following 9.3 percent (revised) growth in 2003.<sup>3</sup> The growth in these two years followed average annual growth in the 1980s of 9.3 percent, and between 1991 and 2003 of 9.7 percent. Industrial capacity grew strongly in 2004, with industrial businesses' value-added increasing 11.4 percent over the previous year. The sale of consumer goods increased 13.3 percent. Exports were up 35.4 percent and imports up 36 percent, with the nation reporting a trade surplus of U.S. \$32 billion for 2004. Furthermore, the WTO reports that China replaced Japan as the world's third-largest exporter in 2004.<sup>4</sup>

Although many of the Chinese people are poor, their financial situation is improving. Real per capita growth rates of disposable income for both urban and rural households in 2004 were the highest they have been since 1997: 7.7 percent for urban households and 6.8 percent for rural households.<sup>5</sup> And as mentioned, approximately 100 million Chinese are considered middle class and middle income. The urban unemployment rate is a low 4.2 percent—0.1 percent less than in 2003. While inflation has increased (it increased 3.9 percent in 2004, following a 1.2 percent increase in 2003), it is quite moderate given the tremendous growth of the economy. Additionally, the Chinese people are great savers, saving over 40 percent of GDP. Reported savings of households increased over 15 percent in 2004.

### Capital Markets

There are two stock exchanges in mainland China—the Shanghai and Shenzhen exchanges. They are generally considered undeveloped and corrupt. However, the government has been working to improve the corporate governance of these exchanges. There is a large government bond market, but the corporate bond market is insignificant.

<sup>1</sup> *The Economist* (2004d), 11.

<sup>2</sup> Some analysts believe that growth has not been as great as officially reported because of suspect data. Official Chinese economic statistics, although improving, are generally considered unreliable. The World Bank estimates that China overstated its growth between 1978 and 1995 by 1.2 percent a year; the OECD believes the overstatement was 3.8 percent between 1986 through 1995 (Lardy 2002). Unlike most developed countries, China does not seasonally adjust its statistics, and the lack of seasonal adjustment can distort recent activity. Other analysts question the accuracy of the raw data themselves. *Business Report* (2004) suggests that economic figures should be viewed as “highly manipulated political statements” rather than hard numbers. Even trade statistics are not considered reliable. The *New York Times* (2004) reports that some companies exaggerate exports to claim tax credits, and others underreport imports to avoid customs duties. Despite all these qualifications, however, there is general agreement that China's economy has grown tremendously over the past two decades, although less than officially reported.

<sup>3</sup> National Bureau of Statistics of China (2005).

<sup>4</sup> World Trade Organization (2005).

<sup>5</sup> World Bank (2005).

**Stock Exchanges.** The two stock exchanges were formed in 1991 and 1992 primarily to fund the government's bailout of failing state-owned enterprises. Currently there are approximately 1,300 predominately state-owned enterprises listed on the two exchanges with a combined total market value of \$400 billion. In most countries, companies with the best prospects typically launch IPOs, but as the Chinese government—rather than independent underwriters—is responsible for deciding which companies to list in China, until very recently, these companies were—with a few exceptions—failing state-owned enterprises.

To maintain control of these state-owned assets, the government issued two general types of securities—state-owned shares or legal-person shares, which are not allowed to trade, and tradable shares. Approximately two-thirds of the shares of listed firms are the former. With so many shares not permitted to trade, the market is very illiquid. Fear of the state-owned shares being dumped on the market has reportedly kept share prices low despite the booming economy and has discouraged the development of derivative and corporate bond markets.

The exchanges offer A-shares and B-shares. A-shares are denominated in renminbi (or yuan), the Chinese currency, and are available for sale only to Chinese nationals; B-shares are foreign currency denominated, and foreigners are allowed to purchase them.

Domestic companies can also list in Hong Kong (“H” shares or “Red Chips”). This exchange and the companies it lists are generally considered better than those on the mainland. However, the Hong Kong exchange has some governance issues, according to shareholder activists.<sup>6</sup>

Some domestic companies also list overseas. The best-performing state-owned enterprises and private companies, in addition to listing in Hong Kong, list overseas on the New York, NASDAQ, or Singapore exchanges.

The mainland Chinese stock markets have had serious problems with corruption, cronyism and

lack of transparency. *Euromoney* describes these markets as “mired in corruption, dominated by moribund companies and manipulated by government and speculators alike.”<sup>7</sup> Corruption extends beyond the exchanges to include listed companies. The China Securities Regulatory Commission (CSRC), which regulates the securities market, reported in 2004 that 10 percent of its listed companies had doctored their books.

Improvements are being made: the CSRC has recently taken steps to improve the functioning of the two exchanges. It is in the process of ending the differential treatment of its A-shares and B-shares. Additionally, foreigners can now apply to buy the state-owned shares, albeit with significant restrictions, and more private companies are being allowed to list. On May 1, 2005, the government announced a pilot program under which it would begin to sell a small number of state-owned shares in a controlled way to avoid any disturbance in the markets. The expectation is that this will alleviate the depressed value of the listings and make the market more liquid.

The CSRC is also tackling corruption. It is investigating related-party transactions to stop the prevalent practice of shifting assets from listed companies to their unlisted state-owned parents. It plans to examine all related-party transactions where the price of assets bought or sold deviates more than 20 percent from an independent appraisal. Additionally, the CSRC has been monitoring brokerages for malfeasance and in 2004 it seized control of the fifth largest broker for corruption and mismanagement.<sup>8</sup>

**Bond Markets.** The government bond market is large. But although a great number of government bonds are issued,<sup>9</sup> the four largest Chinese banks typically buy 60 to 70 percent of any treasury issue, effectively setting the bond's price. Doubt about the true value of the debt has

<sup>6</sup> Wehrfritz (2005).

<sup>7</sup> Leahy (2004), 92.

<sup>8</sup> *Economist* (2004b), 19.

<sup>9</sup> At the end of 2004 there were approximately \$127 billion in treasury bills outstanding, and \$268 billion in one- to ten-year notes and bonds outstanding (*The Standard* [2004]).

encouraged a buy-and-hold market, and this illiquidity deprives companies of favored instruments for hedging short-term risk.

The corporate bond market is tiny.

### *Chinese Banks*

The Chinese banking system is very large because of its preeminent role in financial intermediation, the large economy, the high level of household savings, and restrictions on overseas investments.<sup>10</sup> It is predominantly state-owned. Given the very weak capital markets in China, the banking system provides an estimated 80 percent to 90-plus percent of all business funding. In early 2005, total bank loans to government-owned and private businesses represented approximately 160 percent of Chinese GDP, up from 120 percent in 2000.<sup>11</sup> Consumer loans, a relatively new development in China, constituted approximately 10 percent of all outstanding bank loans in early 2005. Of these consumer loans, mortgages accounted for approximately 90 percent.<sup>12</sup>

There are four big state-owned commercial banks, established originally to fund large state-owned enterprises. There are, in addition, 12 joint-stock commercial banks (JSCBs) owned by local governments, domestic investors, or foreign investors; an estimated 35,000 rural credit cooperatives; three policy banks, which focus specifically on economic development; over 100 city commercial banks, which are restricted to doing business in their base city only; and numerous rural commercial banks, urban credit cooperatives, and finance companies.

The big four banks are the Industrial & Commercial Bank of China (ICBC), China Construction Bank (CCB), Bank of China, and Agricultural Bank of China. At the end of 2001, collectively they employed 1.4 million people and had 116,000 branches across China. Although the big four banks represent the largest banking bloc in China, with almost two-thirds of total deposits in September 2003, the JSCBs have been taking

market share from them. In September 2003, the share of deposits held by the big four had declined to 64.9 percent from 68.3 percent in March 2002, whereas the share held by the JSCBs had increased to 14.7 percent from 12 percent over the same period.<sup>13</sup>

The rural credit cooperatives accounted for approximately 12 percent of deposits in September 2003. These cooperatives are responsible for providing credit to small factories, farms, and households in smaller cities and rural areas. The government-owned policy banks (China Export and Import Bank, China Development Bank, and Agricultural Development Bank of China), the city commercial banks, foreign banks, rural commercial banks, urban credit cooperatives, and finance companies collectively accounted for the remaining (approximately) 8 percent of deposits in September 2003.

The country's central bank, the People's Bank of China, is in charge of monetary policy. One of its powers is to set interest rates on deposits and loans. The China Bank Regulatory Commission (CBRC), established in April 2003, regulates and supervises all banks.

**Problems with the Banks.** The original mission of Chinese banks was to act as a government-directed funding source for state-owned enterprises. The banks continue to lend primarily to these dying state-owned businesses, ignoring the growing vibrant private businesses in their midst. The big four state-owned banks in particular were used by the Chinese government as instruments to implement government development policy. They had little or no discretion as to borrowers or loan terms. Borrowers were approved by the government, which set identical loan rates for every borrower regardless of risk. These conditions did not support a market-oriented lending approach:

<sup>10</sup> Prasad (2004).

<sup>11</sup> *Business Week* (2005).

<sup>12</sup> *The Economist* (2005f).

<sup>13</sup> *Ibid.*

credit analysis and risk management, for instance, were unnecessary and not performed.

The political interference, along with corruption and lack of modern management skills, has resulted in high levels of nonperforming loans in Chinese banks. (This is covered in greater detail in the section below entitled "A Look at the Risks.") Standard and Poor's (S&P) estimated in September 2003 that approximately 45 percent of bank loans were bad. In 2005, on the basis of substantial government assistance to the banking industry, it lowered its estimate to approximately 31 percent, or approximately \$700 billion in bad loans.<sup>14</sup>

Other analysts are less optimistic and believe that the banks made a substantial number of additional bad loans through early 2004, before a government crackdown on lending began. For instance, bank lending increased 56 percent in 2003 over the previous year, with much of this new lending directed to funding state-owned businesses and infrastructure improvements at the government's behest. Banks also started aggressive lending to consumers at this time. Consumer loans now constitute 10 percent of outstanding bank loans. While it is too soon to estimate the full extent of new bad loans made during this time, the state National Audit Office warned in June 2004 that it was beginning to see widespread consumer loan problems. Auto loans are of particular concern. Volkswagen of China reported that 5 percent of auto loans in Beijing are in default. Other reports suggest that approximately 50 percent of car loans are overdue.<sup>15</sup>

Official government figures for nonperforming loans are lower than the figures from other sources. The government estimates nonperforming loans at the end of 2004 at approximately 13 percent of total loans.

**Recent Banking Reform.** The Chinese government is trying to resolve the banks' financial problems before national treatment is afforded to foreign banks in December 2006. The government's approach is multifaceted: it has given the

banks more discretion in their lending decisions; has tried to help the banks maintain their deposit base against the inroads of "gray-market" banking; has provided massive cash injections to rid the banks of bad loans; is working to improve corporate governance at the banks, including clamping down on corruption within the banks; and is trying to attract foreign investment to the banks, hoping that foreign involvement will spur local banks to acquire Western management practices, expertise, and capital.

Greater discretion in lending decisions was recently granted to introduce banks to the concept of risk-based lending. In January 2004, the CBRC permitted banks to charge risky borrowers up to 70 percent over the benchmark lending rate. Previously they had been allowed to charge a maximum rate of up to 30 percent over the standard rate, and before that they had not been allowed to differentiate at all between borrowers in setting rates.

Additionally, to help the "official" banks maintain their deposit base in the face of the substantially higher rates on deposits being offered by the "gray-market" banks (see below), in October 2004 the central bank raised interest rates on one-year loans and on deposits by 25 basis points.<sup>16</sup>

The government has also been pressing the banks to deal with billions in bad debt before full foreign competition begins. In the late-1990s, the government tried—unsuccessfully—to resolve the banks' bad loan problem. In 1998 the government infused \$32 billion into the banks. In 1999 it purchased \$170 billion in bad loans (at book value), which it then transferred for disposal to asset management companies created for this purpose.

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<sup>14</sup> As a means of comparison, at the height of the U.S. savings and loan crisis of the 1980s, nonperforming loans (defined most broadly) of U. S. thrifts never reached 5 percent of total loans of U.S. thrifts.

<sup>15</sup> *The Economist* (2005f), 73.

<sup>16</sup> However, this very small movement in rates is not considered likely to affect the deposit drain from the official banks to gray-market banks.

The CBRC is also working to improve corporate governance at the banks, with particular emphasis on uncovering and preventing corruption. (Corruption is widespread at the banks, and is discussed in greater detail in a later section). The CBRC issued new regulations in early 2005 requiring banks to monitor senior management and board members through internal monitoring and independent external auditors and to establish internationally accepted risk management controls. To deal with widespread rural bank fraud, the CBRC is planning to restructure and consolidate the 35,000 rural credit cooperatives into a more manageable 2,000 institutions by 2007.<sup>17</sup> The CBRC has also begun to publicly report corruption uncovered at the banks.

Finally, the government has been encouraging foreign banks to take minority positions in Chinese banks. To make the big four banks more attractive to foreign investors, the government bailed out two of them in December 2003 and a third bank the following year. Bailed out were the Bank of China, which the government plans to list in Hong Kong, and CCB, which the government plans to list in New York and Hong Kong. The two banks together were estimated to be more than \$65 billion in debt; each received a direct infusion of \$22.5 billion to bring its capital above the minimum set by the Bank for International Settlements and to lower its nonperforming loans. The government then made a \$15 billion capital infusion into ICBC (the nation's biggest bank, with 20,000 branch offices and 400,000 employees),<sup>18</sup> intending to list it in 2006. The remaining big-four banks, Agricultural Bank of China, and a dozen or so smaller banks are also expected to list their shares eventually. It is expected that listing will encourage foreign ownership in the banks.

**“Gray-Market” Banks.** The gray-market banks are informal or sometimes well-organized, groups of lenders/investors. These informal banks reportedly provide much of the lending to small private sector businesses that do not have the political connections to borrow from the state-owned banks.<sup>19</sup> They may consist of only a few individ-

uals—family or friends of the borrower—with a little money to invest, or they can be large sophisticated lending cooperatives organized by rich entrepreneurs in search of higher yields. Annual interest rates on loans made by gray-market banks range from 8 to 20 percent, providing returns to investors substantially above the 2.25 percent official bank deposit rate. Consequently, the gray-market banks compete with the state-owned banks for deposits.<sup>20</sup>

Some of these informal banks are quite large and highly efficient, competitive lenders, providing millions of dollars in structured financing to private businesses. Some of them reportedly borrow the money for their lending from the big four banks and then re-lend it to private borrowers at the higher rates.<sup>21</sup> Defaults are rare due to the personal nature of the lending. Although illegal (organizing a gray-market bank is a capital offense), they are widespread and are generally tolerated by the government. In fact, they are so widespread that the CBRC has reportedly begun to informally monitor prevailing gray-market lending rates.<sup>22</sup> The government has also bailed them out on occasion when they have failed.

### **Foreign Banks**<sup>23</sup>

At the end of 2004, there were 62 foreign banks with over 200 branches operating in China with restricted licenses.<sup>24</sup> Many of these banks had also invested in joint ventures with Chinese banks. In April 2005, foreign banks accounted

<sup>17</sup> *BNA's Banking Report* (2004).

<sup>18</sup> *New York Times* (2005).

<sup>19</sup> Bradsher (2004).

<sup>20</sup> Real interest rates on deposits at the official banks are negative because of low interest rates (raised from 2 percent to 2.25 percent in October 2004) and inflation of 3.9 percent in 2004. [Bradsher (2004)].

<sup>21</sup> *Business Week* (2004).

<sup>22</sup> *Ibid.*

<sup>23</sup> In reporting on the activity of individual foreign banks in China, the author relies upon publicly available information—for the most part, news reports or bank press releases. The activities of some very active foreign banks may be overlooked and others overstated depending upon the extent of public coverage of their activities.

<sup>24</sup> Foreign banks additionally had established over 200 representative offices in China by mid-2004.



for approximately 3 percent of total assets in the banking system, more than twice the 1.3 percent of total assets these banks held in September 2003.<sup>25</sup> HSBC Holdings and Standard Chartered, both headquartered in the United Kingdom, and Citibank, a U.S. bank, are considered the major international banks in China, having built a strong renminbi business.<sup>26</sup> Netherlands-based ING Bank also has a large presence, and Bank of America in June 2005 made the largest investment to date in a Chinese bank, purchasing 9 percent of CCB for \$3 billion dollars.

**Branches of Foreign Banks.** Foreign banks in China currently operate under licenses that restrict them to specific clients and to certain geographical areas. They are permitted to provide financial services in nonlocal currencies to foreign firms in 18 cities, including Beijing. The CBRC reported that at the end of 2004, foreign banks had 18 percent market share of loans made in foreign currency. Additionally, by the end of 2004, 105 foreign branches had received local currency (called renminbi or yuan) licenses, permitting them to collect deposits and make loans in renminbi in these same 18 cities. Of the 105 foreign branches with renminbi licenses, 61 have been permitted to provide renminbi services to Chinese firms in addition to foreign firms.<sup>27</sup> A major exclusion for these foreign branches is that they are not permitted to provide consumer services to Chinese individuals.

In addition to client and geographical restrictions, the government has also used stringent licensing requirements to discourage the growth of foreign bank branches. Until recently, foreign banks were required to wait a year between branch openings in a city, and to maintain high minimum capital levels. In 2004, the government did away with the year's wait and cut the minimum capital requirement for new branches. Foreign bankers claim that the lowered capital requirement still represents a barrier to entry in smaller cities.

**Foreign Joint Ventures.** Despite the many problems of domestic banks, many foreign banks have also purchased minority positions in domestic

banks to avoid existing client, geographic and branching restrictions and to obtain access to the domestic banks' extensive branch systems. The government currently permits up to a total of 24.9 percent foreign stake in any one domestic bank (19.9 percent by any one foreign entity). The government has also provided incentives to encourage foreign minority interest in Chinese banks. A significant incentive has been a lower tax for foreign businesses than for domestic businesses.

In certain cases the government has also permitted significant concessions to foreign investors in Chinese banks. For example, Newbridge Capital, a U.S. private equity firm, recently bought 18 percent of Shenzhen Development Bank, a joint stock bank, and was permitted to appoint a majority of the board, ceding control of a Chinese bank to a foreign entity for the first time. And American Express was recently able to negotiate an agreement with Industrial & Commercial Bank of China under which the bank assumed all risk for the joint American Express card the two firms issued.

One of the largest foreign investments in a Chinese bank is HSBC Holdings' 19.9 percent share of Bank of Communications (BoCom), China's fifth largest bank, which HSBC purchased for \$1.75 billion. HSBC was able to negotiate government assistance and some protections. The government bailed out BoCom before the acquisition: BoCom's current reported level of nonperforming loans is 3.4 percent. Its agreement also permitted HSBC to appoint two of the eight seats on BoCom's board of directors, which is expected to assure some level of control.<sup>28</sup> Additionally, PriceWaterhouseCooper is reorganizing BoCom's risk management and accounting systems and Goldman Sachs is restructuring BoCom in preparation for its public listing.

<sup>25</sup> International Monetary Fund (2005).

<sup>26</sup> Dolven et al. (2004).

<sup>27</sup> *China Daily* (2004).

<sup>28</sup> Dolven et al. (2004).

### A Look at Financial Opportunities

The demand for financial services in China is huge and growing. Foreign bank interest in China speaks to the attractiveness of this market. A rising standard of living has sparked a growing demand by Chinese consumers for financial services, opening up opportunities for banks in wealth management, credit cards, mortgage loans, auto loans and other consumer loans. Economic growth has also produced a growing demand from private businesses for commercial and investment banking services. Emergent opportunities for foreign banks include providing loans to smaller businesses, deposit-taking, risk management services, debt and equity underwriting, mergers and acquisitions, brokerage, asset management, and disposal of bad loans.

#### **Opportunities: Retail Banking**

Some foreign banks view retail banking as a tremendous opportunity due to growing consumer demand and limited domestic competition. Chinese consumers are off-limits to foreign banks until December 2006, which has prompted some foreign banks to take minority positions in Chinese banks to prepare for this financial opening.

Although personal financial services account for an insignificant percentage of the earnings for China's banks—3 percent in 2003—this represents a huge increase over the past few years.<sup>29</sup> And, with a new middle class of approximately 100 million consumers, the demand for credit cards, mortgage loans, and automobile loans is expected to increase further. McKinsey, a business consulting group, is projecting a compound annual growth rate for personal financial services in China of 31 percent through 2013.<sup>30</sup> McKinsey considers two segments of the population attractive targets: the affluent, the top 2 percent of banking customers who currently account for over half of retail banking profits in China, and the “mass-affluent,” the 18 percent of Chinese bank customers who are responsible for most of the remaining profits.<sup>31</sup>

Existing competition is weak. The personnel and technology of Chinese banks generally do not meet international standards and the local banks typically have not made customer service a priority.<sup>32</sup> Additionally, recent forays into consumer lending by Chinese banks have been generally unsuccessful. A lack of experience in consumer lending, inadequate systems for sharing financial information, falsified financial documents and other fraud by borrowers, and difficulties in foreclosing and gaining title to collateral have produced a number of bad consumer loans. (This is covered in greater detail in a later section on risks.)

As described, many large foreign banks, anxious to get a head start in consumer banking before the opening, have allied themselves with Chinese banks to offer wealth management; credit cards; and mortgage, auto, and other consumer loans. Many foreign banks have found city banks especially attractive investments. Restricted to operating in a single city, city banks often have close customer relationships. Additionally, there are 34 cities in China with more than one million inhabitants, so city banks can provide substantial penetration. The CBRC has also said that it may eventually allow city banks to expand into other areas of China.

**Wealth Management.** Chinese banks are permitted to sell mutual funds and to provide custody services to bank customers, but not to manage funds themselves. However, in February 2005 the CBRC initiated a pilot program under which banks would be permitted to launch funds on their own or with partners. Firewalls between a commercial bank's banking operations and its fund management business are required.<sup>33</sup> The central bank is expected to approve bank mutual funds at the end of September 2005.

<sup>29</sup> *BNA's Banking Report* (2004) reports that consumer loans increased from \$17 billion in 1997 to \$200 billion in 2004.

<sup>30</sup> Von Emlah and Wang (2004).

<sup>31</sup> *Ibid.*

<sup>32</sup> *BNA's Banking Report* (2004).

<sup>33</sup> *China View* (2004).

Fund sales have been a significant recent area of growth for some Chinese banks. In particular, CCB, the second largest bank in China, has been active in this area. CCB has 136 million active retail accounts and 14,500 branches across China. It reports that through March 2004 it sold 26 different mutual funds to investors with a sales volume of approximately \$3.74 billion.<sup>34</sup> As mentioned, Bank of America recently purchased 9 percent of CCB to access its tremendous network and capabilities.

ING Bank of the Netherlands and the International Finance Corp (World Bank) together own 24.9 percent of the Bank of Beijing, the second largest of China's city commercial banks, which has a large and growing consumer savings base. ING plans to offer wealth management services and insurance to these consumers through its venture partner. ING has stakes in five other Chinese banks and is engaged in joint ventures with Chinese firms in fund management and insurance as well.<sup>35</sup>

**Credit Cards.** At the end of 2004, credit cards accounted for 3 percent of consumer purchases in China. American Express (AMEX) expects that penetration will eventually match Hong Kong's 20 percent rate.<sup>36</sup> McKinsey believes foreign banks have a special advantage in credit cards because of a traditional Chinese unwillingness to lend without collateral and domestic banks' lack of marketing and risk assessment skills.

Foreign banks have begun to move into the credit card area through investments in domestic banks. For instance, Citibank purchased 5 percent of Shanghai Pudong Development Bank, the ninth largest commercial bank in China, with 270 branches in major cities.<sup>37</sup> The joint venture recently began to offer Chinese consumers international credit cards, denominated in renminbi within the country and in U.S. dollars outside of China. The card carries Citibank's logo. HSBC has partnered with the Bank of Shanghai, of which it owns 8 percent, to offer credit cards. AMEX, with ICBC, recently launched the country's first dual-currency American Express Card.

Beginning in 2005, the government began to allow renminbi-currency credit cards to be used outside of China. They can be used in South Korea, Singapore, and Thailand; transactions related to gambling, interbank transactions, and capital-account items are prohibited.

**Mortgage Loans, Auto Loans, and Other Consumer Loans.** Over five million new homes were built during the past five years in China.<sup>38</sup> During the next decade economic growth is expected to provide home ownership opportunities for hundreds of millions of Chinese. KGI, a securities firm, reports that the number of mortgages grew at an annual compound rate of 115 percent between 1998 and 2004.<sup>39</sup> As noted above, mortgages account for 90 percent of outstanding consumer loans of \$242 billion.

China is currently the world's third-largest car market (after the United States and Japan), and some analysts expect it to overtake the United States (number one) by 2015. Demand for cars in China increased 56 percent in 2002 and 75 percent in 2003 before falling to a 15 percent growth rate in 2004, as the government tightened bank lending. Approximately 30 percent of autos were financed by loans in 2003; the figure dropped to 10 percent in 2004 in response to the tightened lending.

The demand for consumer goods of all types has increased dramatically in China, and not just in the large cities. More than half of the consumption of many consumer goods has occurred in the nation's smaller cities and rural areas. HSBC has positioned itself to take advantage of this growing demand. Its investment in BoCom, described earlier, provides HSBC—through BoCom's 2700 branches—with access to 139 cities in China and massive consumer lending opportunities.

<sup>34</sup> Lafferty Limited (2005).

<sup>35</sup> *The Economist Intelligence Unit Ltd.* (2005d).

<sup>36</sup> *Forbes.com* (2004).

<sup>37</sup> *BBC News* (2003).

<sup>38</sup> Woetzel (2004).

<sup>39</sup> *The Economist* (2005f), 73.

### ***Opportunities: Commercial and Investment Banking***

Foreign banks are currently providing commercial and investment banking services for foreign businesses operating in China, and have begun to provide limited financial services for Chinese businesses, as permitted.

Foreign businesses in China include multinational businesses, such as Volkswagen, which produces cars for the domestic Chinese market, and other multinationals, such as Wal-Mart and General Electric, that are export-driven. Most foreign businesses operating in China are smaller, export-driven, mostly Asian-owned businesses; these businesses represent higher-margin lending opportunities than the multinationals. Small and medium-sized Chinese businesses, starved for financing at a reasonable cost by the state-owned banks, also provide commercial and investment banking opportunities.

Smaller private businesses present particularly attractive commercial and investment banking opportunities in China. These growing businesses provide opportunities in risk-based lending and corporate deposit-taking; equity and debt underwriting, trade financing, merger and acquisition assistance, brokerage services, and asset management. There are also opportunities for foreign banks in disposing of the huge amount of bad loans held by Chinese banks and asset management companies.

**Risk-based Loans and Deposit-taking.** Private businesses in China account for approximately 60 percent of China's GDP and 70 percent of employment. As mentioned earlier, ignored by the state-owned banks, they are often forced to pay interest rates of as much as 8 to 20 percent or more for loans from gray-market lenders, if they are able to get them at all. This market continues to be underserved. McKinsey estimates that total bank revenues from loans to small and medium-sized businesses in China could exceed \$25 billion by 2010; in 2002, they accounted for less than \$10 billion.<sup>40</sup> HSBC Holdings, in particular, has

focused on lending to smaller companies in China.<sup>41</sup>

McKinsey also sees corporate deposit taking as an attractive area of business for foreign banks. McKinsey estimates that deposits are likely to grow at approximately 18 percent annually through 2010, generating more than \$20 billion to banks by 2010.<sup>42</sup>

**Risk Management Services.** In March 2004, the government introduced rules permitting foreign banks to trade derivatives directly with Chinese businesses. The new legislation allows for asset-related derivatives in credit, fixed income, foreign exchange, and hedging. ABN AMRO estimates revenue from interest rate derivatives at approximately \$500 million a year and increasing, and plans to expand its derivatives business from foreign-currency hedging to interest rate swaps and to commodity and equity derivatives.<sup>43</sup> By the end of 2004, ten banks had received licenses to trade derivatives.

**Debt and Equity Underwriting, Trade Financing, and Mergers and Acquisitions.** A recent study by Mercer Oliver Wyman (a global financial services and risk management firm), in conjunction with Morgan Stanley and UBS AG, estimates that earnings from fees for investment banking services in non-Japanese Asia for 2004 were approximately \$5 billion, an increase of 30 percent over 2003. *Bloomberg News* reports that the market for debt underwriting in non-Japanese Asia doubled in the past five years and that Citigroup was market leader in debt underwriting in 2004 in this region.<sup>44</sup>

With the government planning to launch IPOs of state-owned banks and other state-owned enterprises, equity underwriting is expected to grow substantially. Increasing numbers of private Chi-

<sup>40</sup> Bowers et al. (2003), 11.

<sup>41</sup> Dolven et al. (2004).

<sup>42</sup> Bowers et al. (2003), 10.

<sup>43</sup> Baglote and Ng (2004).

<sup>44</sup> *Bloomberg News* (2004).

nese businesses are also expected to go public and to issue debt. McKinsey projects that revenues from underwriting equity and debt should grow at a compound annual rate of 13 percent to \$2 billion by 2010, with half of this increase coming from medium and small businesses. Citigroup and Credit Suisse First Boston are active in underwriting IPOs. There are also opportunities in debt underwriting of private businesses: Morgan Stanley has been especially active in underwriting high-yield issues.

Businesses also need trade financing. McKinsey projects that bank revenues from trade financing could reach \$5 to \$10 billion by 2010. HSBC Holdings, in particular, has built a very successful trade financing network for its small corporate clients.<sup>45</sup> McKinsey also is projecting that merger and acquisition revenues will grow by 30 percent a year, reaching \$400 million in fees by the end of the decade.<sup>46</sup>

**Brokerage and Asset Management.** Opportunities in providing brokerage services are opening. Half of China's 130 domestic brokerages are classified "at risk" and would find it difficult to provide significant competition to foreign brokers. However, China's WTO commitments in regard to securities operations are less than its commercial banking commitments. Foreign firms will not be permitted to trade A-shares, which have accounted for the vast majority of Chinese securities firms' revenues.<sup>47</sup> Foreign investment banks are also limited to owning a 33 percent share of domestic securities firms, a limitation that is not slated to change under the WTO agreement.<sup>48</sup> However, in December 2004 the government approved a joint venture between Goldman Sachs and a local securities firm under which Goldman was granted effective control. The joint venture is permitted to trade shares on domestic markets.

Asset management opportunities in China are discussed in the previous section on wealth management. As in brokerage, foreign ownership restrictions on asset management firms are to continue, with the maximum ownership by a foreign firm restricted to the 49 percent that was approved in December 2004. In April 2005,

UBS purchased 49 percent of China Dragon Fund Management, a medium-sized Chinese mutual fund.

**Disposal of Bad Loans.** China is the world's second-largest bad-loan market (after Japan).<sup>49</sup> S&P estimates that there are approximately \$700 billion in bad loans in China; other analysts suggest a higher figure. As mentioned, the government has been pressuring the state-owned banks to dispose of bad loans in preparation for their IPOs, and it has created four asset management companies to dispose of the loans. Through the end of 2004, the companies had sold only one-third of the \$230 billion in bad loans acquired from the banks since 1999.

Some foreign banks have shown interest in this area. Citigroup purchased over 16 percent of Silver Grant International, a real estate affiliate of China Cinda Asset Management, one of the four asset management companies. Credit Suisse First Boston has also been active in this market, recently purchasing a 2.4 billion yuan (\$290 million) package of distressed loans from China Orient Asset Management Corporation, another of the four asset management companies.

### A Look at the Risks

Although the exploding Chinese economy may be the envy of the world, there are potential economic, political and demographic problems. Major areas of concern are that the economy might be overheating, that countries on which China relies to buy its exports may become protectionist, that growing economic inequality could produce internal strife, and that the rapid aging of the population may create economic difficulties.

<sup>45</sup> Dolven et al. (2004).

<sup>46</sup> Bowers et al. (2003).

<sup>47</sup> Lardy (2002), 72.

<sup>48</sup> McGregor and Guerrero (2004).

<sup>49</sup> Pesek (2004).

Other significant problems exist as well. The regulatory environment is uncertain, and a large unwieldy government bureaucracy continues to play a crucial role in many areas of business operation. Local party officials and local government officials are powerful and often corrupt and obstructionist. Within the banks themselves, corruption is widespread. The operations of Chinese businesses, including the banks, lack transparency. The legal system lacks impartiality, and it is generally accepted that judges continue to be influenced by party and government leaders and bribery. Bankruptcy laws are inadequate; enforcement of contracts and legal judgments is unreliable; there is an inadequate credit infrastructure and not enough trained personnel in law, accounting, and risk management; and the government's commitment to an open economic system is not always apparent.

The *Economist Intelligence Unit* awards China a rating of B for macroeconomic risk and B for financial risk. It rates China D for political stability risk, D for labor market risk, D for government effectiveness risk, and D for legal and regulatory risk.<sup>50</sup>

### **Cause for Concern: An Overheating Economy?**

As described above, China's growth since the early 1980s has been phenomenal. Much of this growth is investment-based: gross fixed investment constituted 45 percent of China's GDP in 2004. This high level of investment has resulted in overbuilding and excess capacity in some sectors. The government has responded by trying to stop this overbuilding so that business profitability remains strong and the banks are not engulfed with new nonperforming loans. Rising inflation is also a concern: if increasing investment-led demand for workers and materials results in inflation, it is feared that the value of savings will be eaten away, interest rates will increase, and the gains in the standard of living that many Chinese have attained in recent years will be pushed back. This could very well create political as well as economic reverberations. Another significant

source of worry is China's very low level of energy efficiency. According to the official Xinhua news agency, China consumes 4.3 times the amount of energy that the United States consumes in producing \$10,000 in GDP.<sup>51</sup> China is a net importer of energy, whose cost has risen significantly. This lack of energy efficiency has both inflationary and competitive implications.<sup>52</sup>

To cool the economy, beginning in the spring of 2004, the government put curbs on new lending and investment activity. Smaller banks were forbidden to undertake new lending, requirements for investments were tightened, and new price controls were instituted. Companies were required to use more of their own capital and less debt; and provincial governments were directed to carefully review all investments in steel, aluminum, cement, and real estate and—if inflation rose—to cap price increases in electricity and transportation.

These cooling efforts apparently had some effect. Whereas the annualized increase in the investment in fixed assets in the first quarter of 2004 had been more than 40 percent, the increase for the whole of 2004 was 25.8 percent (following a 23.9 percent annual increase in 2003). But as mentioned, gross fixed investment still constituted 45 percent of GDP in 2004.

Government efforts to slow bank lending were not completely successful either, as local officials proved adept at “sneaking” projects by the central government. Whereas credit growth declined to a 9.3 percent increase in 2004 compared with the previous year's growth rate of 19.2 percent, the CBRC reported that Chinese banks made over \$70 billion in unapproved loans in 2004, up 70 percent over the amount of the previous year.<sup>53</sup>

<sup>50</sup> *The Economist Intelligence Unit* (2005c).

<sup>51</sup> *The Economist Intelligence Unit* (2005b).

<sup>52</sup> This inefficient use of energy also contributes to significant environmental pollution.

<sup>53</sup> *Economist* (2005a).

The International Monetary Fund (IMF [2005]) cautions that to maintain control over its rapidly growing economy, China still needs to rein in its investment, raise interest rates, and loosen its currency. The IMF continues to be concerned about the quality of investment in China, and suggests that investment needs to be better targeted. Furthermore, although the IMF considers current inflation low given the extraordinary growth in the economy—inflation was 3.9 percent in 2004—it sees some evidence of more widespread “cost-push” pressures, especially in wages and electricity. Other analysts are concerned by the booming real estate market in certain parts of the country.

### ***Cause for Concern: Protectionism?***

In 2003, China's exports to the United States exceeded its imports by a ratio of 8 to 1. Its trade surplus with the United States that year was \$124 billion—the largest bilateral trade imbalance in history.<sup>54</sup> The next year the trade surplus increased to \$160 billion. However, China's global trade surplus in 2004 was only \$32 billion, for its high level of global imports—\$561 billion in goods—largely offset its global exports of \$593 billion. Until the end of 2004, China's textile exports were limited by an agreed upon cap with other nations. Following the expiration of the cap, China increased its textile exports dramatically—by 29 percent in the first quarter of 2005. China is now the world's largest exporter of clothing, with 28 percent of world market share.<sup>55</sup> The magnitude of Chinese exports has caused consternation in the United States, the European Union, and other countries, and raises the specter of protectionism. As an export-dependent nation, China's economy would be seriously derailed by U.S. or E.U. protectionism.

China recently succumbed to pressure from the United States and other countries to raise the value of its currency. The yuan had been pegged at approximately 8.28 to the U.S. dollar for the past decade. The United States accused China of engaging in unfair trade by keeping its currency at an artificially low level against the dollar, making

its exports less expensive. In July 2005, China changed the dollar peg to a peg against an unidentified basket of currencies, and at the same time allowed a 2.1 percent upward revaluation of its currency against the dollar. It also promised additional gradual movements over time. This revaluation is small and unlikely to have much effect on its exports or to satisfy its critics for long. The serious nonperforming-loan problem of Chinese banks, however, makes it extremely difficult for the government to respond to its foreign critics and to revalue its currency in a significant way. It is feared that a significant revaluation could result in increased bankruptcies and a deluge of new nonperforming loans, leading to serious economic turmoil and possibly a financial crisis.

### ***Cause for Concern: Growing Economic Inequality***

In China over 800 million people, or approximately 60 percent of the total population, continue to live in rural areas. The World Bank reports that although hundreds of millions of Chinese people have risen from absolute poverty over the past two decades and the illiteracy rate has decreased by more than half (from 37 percent in 1978 to 17 percent in 1999), great poverty still exists in China, especially in rural areas. The bank reports that over 200 million mostly rural Chinese still live on less than \$1.00 a day and lack access to clean water, arable land, and adequate education and health services.<sup>56</sup> Credible unemployment estimates for those living in the countryside are hard to come by, but *The Economist* estimates that as many as 150 million rural Chinese are unemployed.<sup>57</sup>

As mentioned, official 2004 Chinese statistics report that both urban and rural households experienced the highest growth rates in per capita disposable income since 1997. (The real growth rate

<sup>54</sup> Thompson (2004).

<sup>55</sup> *Channelnewsasia.com* (2005).

<sup>56</sup> World Bank (2003).

<sup>57</sup> *The Economist* (2004d).

for urban households was 7.7 per cent, and for rural households 6.8 percent.) However, this growth was from very different bases in the two cases. According to official statistics, for city dwellers in 2004 the average per capita disposable income was 9,422 yuan (\$1,138 at the official 2004 exchange rate), compared with 2,936 yuan (\$355)—less than one-third the income of urban households—for rural households.<sup>58</sup> Also, much of the growth in income for rural areas in 2004 was attributed to high grain production and high grain prices, both of which are unlikely to be sustainable, and to reductions in taxes and fees—reductions that have contributed to a further decline in the availability of decent education and health services for rural poor people.<sup>59</sup>

In sum, there exists a real divide in China's standard of living between those who live in cities and those who live in rural areas. This inequality produces political and economic friction. The government has been doing a number of things to help the rural poor: it is requiring more provinces to eliminate the farm tax, directing that 70 per cent of additional provincial expenditures on health and education go to rural areas, and increasing farm subsidies and government investment in agriculture.<sup>60</sup> Even so, economic inequality remains a growing problem.

### ***Cause for Concern: An Aging Population***

China's population is probably aging faster than that of any country in history as a result of the nation's one-child policy. Asian Demographics, a demographic research firm, describes China's population trend as "a demographic earthquake."<sup>61</sup> It estimates that the growth of the under-40 age bracket may have already peaked in China, and is forecasting a decline of one-third—or 250 million people—in that bracket over the next 20 years. By 2024 three-quarters of Chinese households may be childless.

This rapid aging carries with it not only all the problems that arise when there are fewer people to care for an aging population, but also the corresponding negative effect on domestic consumer

demand. Based on this projected population decline, Asian Demographics forecasts annual increases in GDP in China of 4.8 percent over the next ten years and less than 4 percent thereafter, far below the 7-8 percent growth rate that many foreign investors are assuming—or the 7 percent annual growth rate that the government feels necessary to solve its rural unemployment problem. According to the firm, most marketers are not factoring this lower growth into their long-term plans.<sup>62</sup>

### ***Bureaucratic Delay and Political Interference***

The Chinese government is more involved in business operations than most foreign banks are accustomed. And, the government bureaucracy in China remains unwieldy and opaque. Despite reforms enacted in response to foreign complaints about the bureaucratic process—reforms such as expedited licensing—long delays caused by bureaucratic overlap remain a problem. Lone Star Funds, a global investment firm, closed its Beijing office recently because of a lack of product (bad loans) due to the long delay in getting the necessary approvals from the overlapping government offices responsible for these transactions.<sup>63</sup> Citigroup had to wait for almost a year for approval of its offer to buy 1.096 billion yuan in nonperforming loans—loans that the government was anxious to sell. However, in October 2004 the government announced expedited sales of nonperforming loans—for foreign buyers only.

Businesses contend not only with an overlapping national government bureaucracy, but also with local (at the village, town, city, county and provincial levels) government officials as well as local party officials. Local governments in China have exercised a great deal of power since the imperial days, and local government officials and

<sup>58</sup> National Bureau of Statistics of China (2005).

<sup>59</sup> *Economist Intelligence Unit* (2005a).

<sup>60</sup> *Economist Intelligence Unit* (2005a).

<sup>61</sup> *The Economist* (2005b), 74.

<sup>62</sup> *Ibid.*

<sup>63</sup> Pesek (2004).



local party officials continue to have a great deal of influence on what happens in their villages, towns, cities, and provinces. Their commitment to a market economy is also sometimes questionable. (The commitment of the national government is discussed below.)

Local political interference in banks has been especially widespread. Branch managers have historically had closer relationships with local government officials than with their bank superiors, and were rewarded more on the basis of loyalty to party and local officials than on the basis of market results.<sup>64</sup> Until very recently, for all intents and purposes, bank branches were under the rule of local officials, who set bank salaries, guaranteed loans, and even were involved in decisions on where the children of bank employees went to school.<sup>65</sup> Local officials guaranteed loans and recommended branch managers, and branches routinely disregarded risk and return to promote public purposes at the direction of party and local government officials. Political interference in lending decisions reportedly has lessened as the government has encouraged banks to adopt international banking practices, but it remains a force.

### **Problems with Corporate Governance**

Corruption continues to be a problem in China, although there have been real improvements here as well. Transparency International, a global corruption-monitoring group, rated China 2.16 in 1995 (a rating beneath 3.0 indicates rampant corruption). In 2005, the ranking improved to 3.4, placing China solidly in the middle in terms of corruption—71st out of 146 countries.<sup>66</sup> Corruption has been especially a problem within the banks, and this must be an important consideration for a foreign bank deciding whether to compete in China through an equity position in a domestic bank and, if so, how to structure any such relationship.

Corruption is considered to be especially prevalent in remote branches and rural institutions: private businesses have complained that in order to borrow from rural banks and credit coopera-

tives, they are typically forced to bribe lenders with kickbacks of 10 to 15 percent of the loan value.<sup>67</sup> The rural credit cooperatives are reportedly riddled with fraud and controlled by local government officials.

Corruption appears to be a problem not just in rural banks or remote branches but also in the big four banks. The central bank recently reported that 40,000 CCB employees and 18,000 Bank of China employees had been disciplined for misappropriating funds and making unauthorized loans.<sup>68</sup> Additionally, the chairman of CCB was forced to resign in March 2005 for taking bribes. Significantly, CCB had been considered the cleanest of the big four banks. The CBRC also recently announced that it had charged dozens of government officials and bankers at ICBC with attempting to steal almost \$1 billion from the bank. Earlier, the CBRC reported that the director of a branch of ICBC had disappeared with \$120 million of the bank's money.

*The Washington Post* reports that there is also significant corruption and cronyism in the four asset management companies created by the government to dispose of the banks' bad loans. The management companies are staffed with many of the same bankers who made the bad loans in the first place; and not surprisingly, the corruption and self-dealing have continued. The government audit office recently reported that it had uncovered 38 cases of embezzlement and fraud at the four companies, involving more than \$800 million.<sup>69</sup>

These government disclosures of corruption can be viewed two ways, however. As mentioned earlier, the CBRC is making a strong effort to improve corporate governance at the banks, and many commentators see these public announcements of fraud as positive signs—as proof that

<sup>64</sup> *The Economist* (2004b).

<sup>65</sup> *The Wall Street Journal* (2004).

<sup>66</sup> *The Economist* (2005c).

<sup>67</sup> *The Economist* (2004a).

<sup>68</sup> Although the big four banks employ a total of 1.4 million people, these numbers are still very significant.

<sup>69</sup> *Washington Post* (2005).

auditing and centralized management reforms are detecting fraud and that the government is serious about stopping it.

The level of transparency in businesses, including Chinese banks, is also not good. Of particular concern, the accuracy of bank financial statements is questionable. Although HSBC has taken a minority position in many Chinese banks, its Asia chairman has cautioned that outside investors in Chinese banks need to be extremely careful, for they have found bank financial statements to be unreliable and the banks uncontrollable.<sup>70</sup> Some of the problem may be that the banks themselves do not keep track of operating data. McKinsey reports that one state-owned bank had to spend a month reviewing records and interviewing personnel to arrive at an estimate of its losses and recoveries from defaulted loans.<sup>71</sup> International accounting standards are only used on the small number of publicly listed businesses.

### **Poor Systems for Ensuring the Return of Capital**

China has poor systems<sup>72</sup> to ensure the safe return of capital. Its current laws and foreclosure procedures are ineffective, and creditors have few rights. The judicial system is considered biased and corrupted by local officials and bribery. Enforcement of contracts and of legal judgments is problematic. The credit infrastructure is inadequate, and there are shortages of trained personnel in crucial management areas. The commitment of the government to a market economy is not always clear.

**Inadequacy of Bankruptcy Laws.** China lacks effective bankruptcy laws and foreclosure procedures. The bankruptcy law enacted in 1986 has been described as incomplete, inconsistent, and opaque.<sup>73</sup> It required criminal fraud investigations in the case of bankrupt companies, and liquidation was the only way to resolve bankruptcy. The law gave creditors few rights and was ineffective in enforcing contractual obligations. With the government acting as shareholder, arbiter, and creditor, there was also an inherent conflict of

interest.<sup>74</sup> The government was responsible for approving bankruptcy petitions and appointing liquidators (often local government officials).

A new bankruptcy law has been pending for a decade and is expected to be enacted sometime in 2005. The current version of the proposed law has many of the elements of U.S. law and is expected to conform to WTO requirements. It would apply uniformly to both state-owned and private enterprises, with some exceptions. A court rather than the government would rule on bankruptcy petitions. Liquidation of the assets of the bankrupt entity would be the responsibility of an administrator selected by the court rather than by the government, and the administrator would be supervised by a committee of creditors who would have the right to approach the court to replace the administrator. The current version of the proposed law also recognizes that businesses may fail for a variety of reasons other than criminal mismanagement, and it is similar to Chapter 11 proceedings in U.S. law in that it would allow for corporate reorganization under a bankruptcy court's advisement, with the approval of major creditors. Security interests would be honored (that is, collateral would be sold to satisfy the debt).<sup>75</sup> The draft law provides an exemption period for some state-owned enterprises.

**Failure to Enforce Contracts.** China has severe problems with the enforcement of contracts and legal judgments. The *China Law and Governance Review* (2004) finds that China's courts lack the "authority and stature" to enforce their decisions, especially when other branches of the government, or government officials, are parties to the case. The *Review* estimates that approximately 30 to 60 percent of legal judgments in China are enforced. Because local protectionism is an important factor in the enforcement of judg-

<sup>70</sup> *The Economist* (2005d).

<sup>71</sup> Desvaux et al. (2004).

<sup>72</sup> The term "systems" is used in a broad sense to include all the mechanisms necessary for the smooth functioning of a capitalistic system, i.e., laws, procedures, infrastructure, and personnel.

<sup>73</sup> Fisher (2005).

<sup>74</sup> Bayron (2005).

<sup>75</sup> Fisher (2005).

ments, this number can drop to 10 percent in areas outside the geographical jurisdiction of the court. The enforcement of legal judgments of all kinds is problematic—whether the issue is compensation for damages, repayment of debt, or enforcement of property rights. Enforcement of a judgment is often a “contest of influence or power.”<sup>76</sup>

Commercial and economic judgments are especially difficult to enforce. The *China Law and Governance Review* reports that during the first half of 2003, there were twice as many unexecuted civil and economic judgments in Beijing as executed judgments. Most of these unexecuted judgments were for either bank loan defaults or real estate judgments. A third major category of unexecuted judgments was wages: as of 2003, migrant workers in China were owed approximately \$12.5 billion in unpaid wages.

**Inadequacy of a Credit Infrastructure and Trained Personnel.** An additional systemic problem is the inadequacy of the credit infrastructure and a lack of crucial personnel. As mentioned above, Chinese statistics, including trade statistics, are not considered trustworthy. China also does not have a highly functioning credit culture or highly functioning credit systems. Only the relatively few public businesses use international accounting standards. Systems for uncovering and discouraging fraud are inadequate: external auditing, and internal control systems are undeveloped, and business transparency is not typical. Personal income statements are easily misrepresented, credit-rating services are immature, banks do not have easy access to other banks' data to check on unreported debt or default histories, and the foreclosure process, as described earlier, is in flux.<sup>77</sup> Few channels for risk shifting exist because the government has not permitted the securitization of loans.<sup>78</sup> The markets are illiquid and lack good risk-hedging instruments. Consequently, as mentioned earlier, Chinese banks have begun to experience serious problems with many of the consumer loans they have made, especially auto loans, in a large part due to the inability of

the banks to substantiate consumer information and to repossess property.

Regarding personnel, despite the abundance of unskilled labor in many parts of China, unskilled labor is in short supply in the south of the country, and skilled labor is even harder to find. In addition, insufficient local personnel are available for top and middle level management. *The Economist* believes that although for most firms production in China remains cost-effective, a growing shortage of executives requires that substantial time be directed away from sales to human resources, with the result that growth may be slowed. Businesses in China complain about not being able to find personnel with “creativity . . . an aptitude for risk-taking and . . . an ability to manage in everything from human resources and accounting to sales, distribution, branding and project-management.”<sup>79</sup>

**Uncertainty about the Government's Commitment to Open Competition.** It is not always clear how committed the government (even the national government) is to free competition. The Chinese media recently reported a statement by the Vice-Chairman of the CBRC—subsequently disavowed—that after 2006 China might continue to limit the expansion of foreign banks to protect local banks from excessive competition. He stated that the government might restrict foreign banks to the poorer western areas of China and that foreigners might be forbidden to invest in more than two local banks. The Vice-Chairman defended his position by emphasizing that foreign banks held only 3 percent of the assets of the banking system but had a 12 percent share of the market in Shanghai, the business capital of China.<sup>80</sup> As noted, this statement was later disavowed.

<sup>76</sup> *China Law and Governance Review* (2004).

<sup>77</sup> *The Economist* (2004c).

<sup>78</sup> *The Economist* (2005f).

<sup>79</sup> *The Economist* (2005e), 60.

<sup>80</sup> *Financial Times* (2005).

### Concluding Remarks

China presents great opportunities as well as great risks—a combination that each foreign bank must weigh for itself. The opportunities include a booming market of 1.3 billion people, many of whom are rising to middle-class status; stagnant competition from the local capital markets and banks; and emergent opportunities for banks in retail, commercial, and investment banking.

The risks are also substantial. There are risks of an overheating economy, of rising protectionism in those countries which buy China's products, of growing economic inequality in a non-democratic society, and problems associated with a rapidly aging population. Additionally, there is a slow moving bureaucracy; government interference in business operations at both the national and the local level; and poor corporate governance, including corruption and lack of transparency. The legal system in China, in its current form, cannot be relied on to protect creditor rights. Moreover, the degree of government commitment to an open market is not always clear.

There have been improvements, however, and when (if) the new bankruptcy law is enacted, banks will have more protection. The Chinese banks in particular, with their massive portfolios of bad loans, should benefit and become both more competitive and more attractive as investments. The business of buying and selling non-performing loans should also benefit. However, enactment of the bankruptcy law alone will not solve the bad loan problem. The law will have to be enforced, and enforcement requires unbiased courts, a government willing to remain neutral, harmonization of this law with other laws, and a cadre of legal and business professionals.

Each foreign bank must decide for itself whether the opportunities of doing business in China outweigh the risks. Banks that have decided to enter this market must also decide whether to enter independently or as a partner with a Chinese bank. Because of a history of government-directed lending, political interference, corruption, and

lack of modern management skills and systems, many Chinese banks are badly functioning institutions that are kept alive by government assistance.

The lack of transparency of Chinese banks also makes them uncertain investments. Skepticism about the health of bank portfolios is widespread, even after massive bailouts. Nicholas Lardy, a renowned China expert at the Institute for International Economics, doubts the value of recent bank bailouts, suspecting that these massive infusions of government capital are too little and too soon—a waste of money until basic market reforms are made within the banks. His estimate of the amount of money needed to bail out the entire banking system is approximately 30 percent of China's GDP over the next several years.<sup>81</sup>

Potential investors in China must recognize the corporate governance problems, including corruption and the lack of transparency in Chinese businesses, including the banks, and must negotiate significant protections. They need to be very careful in their investments and seek out relationships that either provide them with substantial control or otherwise limit their risk. As we have seen, the Chinese government and Chinese businesses have shown themselves willing to craft special arrangements that provide some protection for foreign investors. However, competitive forces can obviate even standard protections. For example, in the area of debt underwriting, local Chinese firms have resisted strict covenants typical of junk bond issues, and with the strong demand for Chinese debt, there is concern that a race to the bottom could begin with underwriters agreeing to do away with standard investor protections.<sup>82</sup> Such actions would be dangerous given the conditions described in this article.

<sup>81</sup> *The Economist* (2004b).

<sup>82</sup> Leahy (2005).

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# Overview of Recent Developments in the Credit Card Industry

by Douglas Akers, Jay Golter, Brian Lamm, and Martha Solt\*

Since the 1980s, Visa U.S.A. (Visa) and MasterCard International (MasterCard), the bank-controlled credit card associations that together account for approximately 70 percent of today's credit card market, have been able to control the use of and access to their networks to the advantage of their bank members. Recently, however, the credit card industry has been changing:<sup>1</sup> some merchants are now large enough to exert their own leverage, legal defeats have impeded the ability of credit card associations to control the market, and some participants have developed new arrangements and alliances that may be a prelude to further changes in the industry. This article surveys recent developments in an industry that is facing new competitive dynamics.

The article begins by describing the formation of the payment card industry and then its structure. The article continues by explaining the functioning of credit card networks: the various kinds of network models, and the significance of interchange fees in the most complex model. Next discussed are recent industry-altering litigation involving Visa and MasterCard, and significant aftereffects of the litigation. The article concludes by noting the main challenges facing the industry today.

## The Formation of the Credit Card Industry

Although merchant credit may be as old as civilization, the present-day credit card industry in the United States originated in the nineteenth century. In the early 1800s, merchants and financial intermediaries provided credit for agricultural and durable goods, and by the early 1900s, major U.S. hotels and department stores issued paper identification cards to their most valued customers. When a customer presented such a card to a clerk at the issuing establishment, the customer's creditworthiness and status were instantly established. The cards enabled merchants to cement the loyalty of their top customers, and the cardholders benefited by being able to obtain goods and services using preestablished lines of credit. Generally these cards were useful only at one location or within a limited geographic area—an area where local merchants accepted competitors' cards as proof of a customer's creditworthiness.

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<sup>1</sup> The term "credit card industry" as used in this article refers to the four major payment card networks: Visa, MasterCard, American Express, and Discover. In addition, Diners Club is a very small participant.

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In 1949, Diners Club established the first general-purpose charge card,<sup>2</sup> enabling its cardholders to purchase goods and services from many different merchants in what soon became a nationwide network. The Diners Club card was meant for high-end customers and was designed to be used for entertainment and travel expenses. Diners Club charged merchants who accepted the card 7 percent of each transaction. Merchants found that accepting Diners Club cards brought more customers who spent more freely. The Diners Club program proved successful, and in the following decade it spawned many imitators.

In the late 1950s, Bank of America, located on the West Coast, began the first general purpose credit card (as opposed to charge card) program. At that time, banking laws placed severe geographic restrictions on individual banks. Virtually no banks were able to operate across state lines, and additional restrictions existed within many states. Yet for a credit card program to be able to compete with Diners Club, a national presence would be important. To increase the number of consumers carrying the card and to reach retailers outside of Bank of America's area of operation, therefore, other banks were given the opportunity to license Bank of America's credit card. At first Bank of America operated this network internally. As the network grew, the complexity of interchange—the movement of paper sales slips and settlement payments between member banks—became hard to manage. Furthermore, the more active bank licensees wanted more control over the network's policy making and operational implementation. To accommodate these needs, Bank of America spun off its credit card operations into a separate entity that evolved into the Visa network of today.

In 1966, in the wake of Bank of America's success, a competing network of banks issuing a rival card was established. This effort evolved over time into what is now the MasterCard network. In addition, firms that were not constrained by interstate banking restrictions formed card networks on the single-issuer model (the model established by Diners Club, in which many merchants accept payments on a card with a single issuer; see the discussion of

figure 2). For instance, the American Express Company (American Express) introduced its charge card system in 1958, and Sears, Roebuck and Co. (Sears) established the Discover Card credit card in 1986.<sup>3</sup>

Among the challenges each of these networks faced was bringing together large numbers of cardholders with large numbers of merchants who accepted the cards as payment. Achieving a sufficiently large network was hard, partly because merchants, especially larger retailers, were reluctant to honor credit cards that would compete with their own store-branded credit cards. Some smaller merchants, however, viewed general-purpose credit cards as a way they could compete with larger merchants for customers.<sup>4</sup> Merchants of all sizes were averse to having fees imposed on them by the credit card network.

Currently the U.S. credit card industry is a mature market. Today credit cards are widely held by consumers: in 2001 an estimated 76 percent of families had some type of credit card.<sup>5</sup> Recent estimates suggest that among all households with incomes over \$30,000, 92 percent hold at least one card,<sup>6</sup> and the average for all households is 6.3 credit cards.<sup>7</sup> Credit cards are also widely accepted by merchants, and with the recent addition of fast-food and convenience stores to the credit card networks, credit card payments are now processed at nearly all retail establishments.

<sup>2</sup>The holder of a charge card, unlike the holder of a credit card, must pay the monthly statement balance in full.

<sup>3</sup>Whereas American Express processes all of its credit- and charge-card activity through the American Express Bank, a wholly owned subsidiary it has held for nearly 100 years, Discover processes all of its card-related transactions through Greenwood Trust, a wholly owned subsidiary of Discover's parent company, Morgan Stanley Dean Witter & Co. (In order to process the Discover Card transactions, Sears, Roebuck and Co. purchased Greenwood Trust through its Allstate Enterprises subsidiary in 1985 and converted it to a nonbank bank. Morgan Stanley purchased the bank, along with Dean Witter and Discover, in 1997.)

<sup>4</sup>For more information on the history of credit cards, see Evans and Schmalensee (2005) and Mandell (1990).

<sup>5</sup>Aizcorbe, Kennickell, and Moore (2003). This is the most recent data on this topic from the Federal Reserve Board.

<sup>6</sup>Gould (2004).

<sup>7</sup>Day and Mayer (2005).

## The Structure of the Credit Card Industry

As noted above, the general-purpose card market is dominated by Visa and MasterCard, two bank-controlled card associations. Table 1 shows the U.S. market share of the top four card networks, with Visa and MasterCard together holding about 70 percent of the market share.

Table 1

| <b>Total U.S. Transaction Volume</b>                                  |  |                                  |
|---|--|----------------------------------|
| Fiscal Year Ending September 30, 2004                                 |  |                                  |
| <b>Card Network</b>   | <b>Purchases and Cash Advances (\$ billions)</b> | <b>Market Share (percentage)</b> |
| Visa  | \$526.87   | 39.8                             |
| MasterCard  | 399.90   | 30.2                             |
| American Express  | 304.80   | 23.0                             |
| Discover Card   | 93.67  | 7.0                              |
| <b>Total</b>  | <b>\$1,325.24</b>                                | <b>100.0</b>                     |
| <i>Source: The Nilson Report, Issues 825 and 826, HSN Consultants</i> |  |                                  |

The four major card networks have a variety of corporate structures. Visa is a nonstock for-profit membership corporation that as of 2004 was owned by approximately 14,000 financial-institution members from around the world.<sup>8</sup> Until 2003 MasterCard was a nonstock not-for-profit membership association, but then it converted to a private-share corporation known as MasterCard Inc., with the association's principal members becoming its shareholders. MasterCard has more than 23,000 members (including the members of MasterCard's debit network).<sup>9</sup> The Board of Directors of Visa is elected by the member banks with voting rights based primarily on transaction volume.<sup>10</sup> Control of the Visa and MasterCard card associations is roughly proportional to the transaction volume of member issuing banks. American Express is an independent financial services corporation, and Discover Financial Services (Discover) is now a subsidiary of investment bank Morgan Stanley Dean Witter & Co. (Morgan Stanley).<sup>11</sup>

The issuance of credit cards is concentrated among five banks (table 2). Further concentration will result from two acquisitions announced in June 2005: Bank of America is acquiring the holding company MBNA Corporation, including its sub-

siary MBNA America Bank, NA (MBNA), a monoline credit card bank,<sup>12</sup> and Washington Mutual, Inc. (Washington Mutual) is acquiring Provident Financial Corporation, including its Provident National Bank (Provident), another monoline credit card bank. The implications of these transactions are addressed below.

Table 2

| <b>Top Bank Credit Card Issuers</b> |                      |                                   |   |
|-------------------------------------|----------------------|-----------------------------------|---|
| 2004                                |                      |                                   |   |
| <b>Rank</b>                         | <b>Bank Name</b>     | <b>Outstandings (\$ millions)</b> | <b>Number of Active Accounts (in thousands)</b> |
| 1                                   | JP Morgan Chase      | \$134,700                         | 42,966  |
| 2                                   | Citigroup            | 115,950                           | 47,880  |
| 3                                   | MBNA America         | 82,118                            | 21,199  |
| 4                                   | Bank of America      | 61,093                            | 18,773  |
| 5                                   | Capital One          | 53,024                            | 24,429  |
| 6                                   | HSBC Bank            | 19,670                            | 13,870  |
| 7                                   | Provident            | 18,536                            | 8,726   |
| 8                                   | Wells Fargo          | 13,455                            | 2,789   |
| 9                                   | U.S. Bancorp         | 10,578                            | 4,056   |
| 10                                  | USAA Federal Savings | 7,104                             | 1,956   |
|                                     | <b>Total</b>         | <b>\$516,228</b>                  | <b>186,644</b>                                  |
| <i>Source: American Banker</i>      |                      |                                   |   |

In the industry today, debit cards are a fast-growing product line. Debit transactions reached a record \$15.6 billion in 2003 (see table 3). Debit cards are essentially ATM cards that can be used on Visa, MasterCard, or other networks as well as at ATM machines. The amount of a payment made using a debit card is immediately withdrawn from the cardholder's checking account, with the result that, for the card issuer, both the opportunity to earn interest on revolving balances and any inherent credit risk are eliminated.

The ability to use the Visa and MasterCard networks to post debit transactions was developed in the 1970s, but not until the 1990s was there a sig-

<sup>8</sup> Visa U.S.A. Inc. (2005).

<sup>9</sup> MasterCard International (2005).

<sup>10</sup> Evans and Schmalensee (2005).

<sup>11</sup> See Note 3. Whether Discover will remain a subsidiary of Morgan Stanley is uncertain as of this writing and is discussed more fully below.

<sup>12</sup> A monoline bank engages primarily in only one line of business.

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Table 3

| <b>Annual Number of Noncash Payments</b><br>2000 and 2003 |  |  |  |
|---|--|--|--|
|   | <b>2000<br/>Estimate<br/>(\$ billions)</b> | <b>2003<br/>Estimate<br/>(\$ billions)</b> | <b>Compound<br/>Annual<br/>Growth Rate<br/>(percent)</b> |
| Check   | \$41.9                                     | \$36.7                                     | 4.3  |
| Credit Card   | 15.6                                       | 19.0                                       | 6.7  |
| ACH   | 6.2  | 9.1  | 13.4   |
| Offline Debit   | 5.3  | 10.3                                       | 24.9   |
| Online Debit  | 3.0  | 5.3  | 21.0   |
| Electronic Benefits Transfer                              | 0.5  | 0.8  | 15.4   |
| <b>Total Noncash Payments</b>                             | <b>\$72.5</b>                              | <b>\$81.2</b>                              | <b>3.8</b>   |
| <i>Source: Federal Reserve System</i>                     |  |  |  |

nificant volume of transactions in these systems. If a merchant has a personal identification number (PIN) entry keypad at its sales location, the transaction is routed much the way an ATM transaction is. In the absence of a keypad, the merchant can have the customer sign a transaction authorization. These transactions then travel through the payment systems much as a credit card transaction does (except that the cardholder's bank will be informed of the transaction immediately and will be able to hold the customer's funds until settlement is completed). The differing fees charged to merchants for transacting PIN debits and signature debits became the basis for an important lawsuit that is described more fully below.

Control of debit card transaction processing is mostly in the hands of banks. In Germany, however, half of all debit transactions are processed via a merchant-controlled debit card system by piggy-backing on the low-cost Automated Clearinghouse network, and the system has no interchange fees. In the United States, Debitman Card Inc. has been working on such an effort for PIN-based debit transactions.<sup>13</sup>

### The Functioning of Credit Card Networks: Models and Interchange Fees

The most complex form of credit card network is the one with the greatest number of participants: the multi-issuer card model. The cards in a multi-issuer network represent a complex form of two-

sided markets whereby merchants are more willing to accept cards that have many cardholders, and cardholders want cards that are accepted at many establishments. The payment network benefits the merchant and the buyer jointly and entails joint costs, and it must price its service so that it gets—and keeps—the two sides participating in the network.<sup>14</sup> It does this largely by setting interchange fees at levels that will maintain balance in the incentive structures of issuing banks (banks that issue credit cards) and acquiring banks (banks that service merchants and process their credit card transactions).<sup>15</sup> Interchange fees are collected by issuing banks when they send payments for purchases to acquiring banks.

### Network Models

Figures 1 through 3 illustrate the increasing complexity of a credit card network as more parties participate. Figure 1 illustrates the simplest bilateral model, where information and funds flow between a merchant and a cardholding customer when the merchant extends credit. On a monthly basis, the merchant will present a bill to the cardholder listing all transactions for the month. The cardholder then remits payment.

Figure 2 illustrates the single-issuer model, which has a more complex closed-loop card-association system in which many merchants accept payments on a card with a single issuer. In this system, the merchant sends information about each purchase, including the customer account number, the transaction amount, and verification to the card issuer. With modern telecommunications and data processing technology, these steps are usually completed at the point of sale. The card issuer pays the merchant and sends a monthly statement to the cardholder listing all transactions which occurred during the statement period. The customer then pays the balance due, in whole or in part, based on the credit terms that were extended to the card-

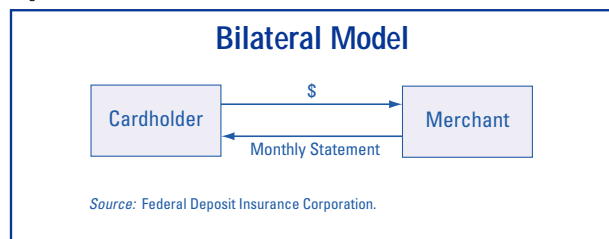
<sup>13</sup> FinanceTech (2004).

<sup>14</sup> Evans (2002).

<sup>15</sup> Schmalensee (2001).

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Figure 1



holder by the issuer. This description applies to the original Diners Club model and, until very recently, to the Discover Card and American Express models (which have now converted to the multiple-card-issuer model, see figure 3).

Finally, figure 3 provides a basic illustration of the most complex model, the model with one card association, many cardholders, many merchants, and multiple banks. In this model, the card association (or network) plays an important role by imposing rules for issuing cards, clearing and settling transactions, advertising and promoting the brand, authorizing transactions, assessing fees, and allocating revenues among transaction participants. Further, each participant in the credit card transaction has an incentive for participating in the network.<sup>16</sup> Figure 3 shows the typical flow of information and funds for a sample \$100 credit card purchase. The process begins when the cardholder presents the credit card to the merchant to purchase a good or service. The merchant transmits to the acquiring bank the cardholder's account number and the amount of the transaction. The acquiring bank forwards this information to the card association network requesting authorization for the transaction. The card association forwards the authorization request to the issuing bank. The issuing bank responds with its authorization or denial through the network to the acquiring bank and then to the merchant. If approved, the issuing bank also sends to the acquiring bank, via the network, the transaction amount less an interchange fee.<sup>17</sup> The interchange fee is established by the card association. The example illustrated in figure 3 shows \$98.00 (\$100.00 purchase price minus 200 basis point interchange fee) flowing from the issuing bank, though the network, to the acquiring bank. The acquiring bank, after subtracting its own service

Figure 2

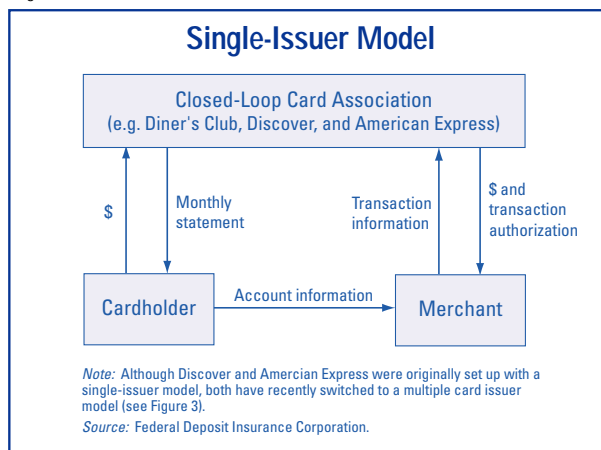
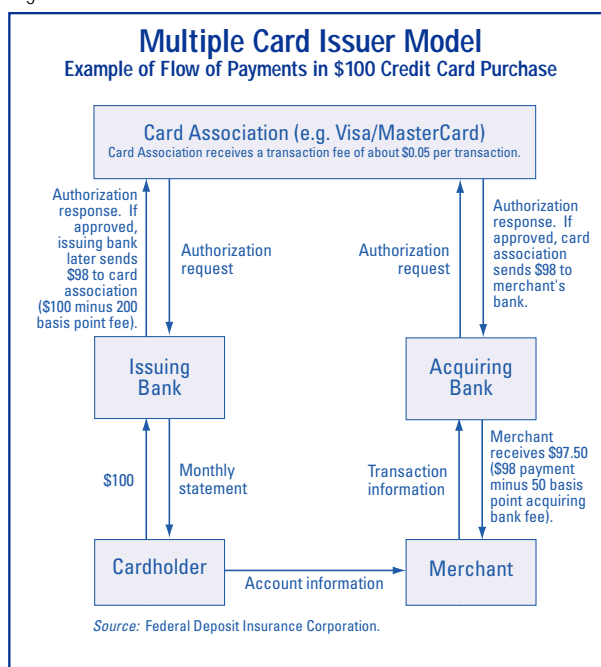


Figure 3



fee, passes the payment on to the merchant.<sup>18</sup> In figure 3, the merchant receives \$97.50 (\$98.00

<sup>16</sup> See also figure 4.

<sup>17</sup> Funds flow between the card association and participating banks, not on a transaction-by-transaction basis but on a batch basis, several times per day, with the card association effecting settlement among the participating banks by determining each of their net positions in order to balance the system.

<sup>18</sup> The Acquiring Bank sets its own fee which is deducted from the merchant payment. That fee must be high enough to cover the cost of the interchange fee and the Acquiring Bank's own expenses for the transaction. Interchange fees amount to a large portion of the fees charged to merchants by Acquiring Banks, and changes in interchange fees in the past have led to roughly equal changes in fees charged to merchants. See Schmalensee (2001).

minus a 50 basis point fee).<sup>19</sup>

Acquiring banks can outsource these functions. One such company that provides outsourcing services is First Data Corporation which handles over 50 percent of all MasterCard and Visa transactions processed at the point of sale.<sup>20</sup> The profit margins for servicing merchant processing of credit card payments are thin,<sup>21</sup> and the competition is based on discount fees, support services, and the handling of chargebacks (which are the reversals of charges). The issuing bank bills the cardholder for the full amount of the purchase and receives payment from the cardholder. The card association receives a small fee, usually around \$0.05, for each transaction.

Figure 4 lists the costs and benefits to each type of participant in the credit card industry. In order to benefit from economies of scale, the card associations must construct rules that balance each party's needs so that large numbers of participants of each type choose to join (and stay in) the network. Over time, the dynamics among the various parties may change, with the result that network policies may need to be reassessed.

### **Interchange Fees**

Interchange fees are set by the card associations and in 2004 were a source of some \$25 billion in revenue to card issuers.<sup>22</sup> At the same time, interchange fees are a source of irritation to merchants and can be among the largest and largest-growing costs of doing business for many retailers.<sup>23</sup> A standard interchange fee is around 200 basis points, plus \$0.10 per transaction, but many transactions have lower fees and some have higher fees. Large merchants can negotiate directly with the card association for very low interchange fees, but these fees are not publicly circulated.

The pricing structure of interchange fees is complex. The specific interchange fee depends on the card association, the type and size of merchant, the type of card, and the type of transaction. Merchants that sell low-margin items—for example, convenience stores, supermarkets, and warehouse clubs—have lower rates. Hotels and car rental

establishments have higher rates. Newer premium credit cards that offer more rewards have high rates. Credit card transactions have higher rates than signature debit card transactions, whose rates are higher than PIN debit card transactions. Sales transacted over the telephone or Internet have higher interchange rates, ostensibly to compensate for the greater risk of fraud associated with transactions that are not conducted in person.

There is considerable friction among network participants over the issue of interchange fees, and card associations are being challenged on the structure and application of those fees. Merchants increasingly view interchange fees as an unnecessary and growing cost over which they have no control. Furthermore, banks are now issuing credit cards with even higher interchange fees. Merchants are unable to refuse transactions made with these cards. Therefore, merchants perceive issuing banks as earning revenue at their expense, with no added value to merchants. Merchants pass on the costs of interchange fees to their customers, who are largely unaware of this cost.

Among other factors, the interchange fee structure that favors large merchants over smaller ones is inspiring merchants to challenge the interchange system more actively. Early in 2005, merchants formed a trade association for the purpose of changing interchange fees.<sup>24</sup> In addition, Visa and MasterCard will be defending the interchange arrangement anew from litigation filed in June 2005 by a group of smaller merchants.<sup>25</sup>

Despite merchant discontent, card issuers have incentives to maintain or increase interchange fees. Issuers are marketing credit cards with reward or loyalty programs that encourage greater card use and reinforce customer loyalty to the brand. An estimated 12 to 24 percent of cards held by con-

<sup>19</sup> Chakravorti (2003) presents a fuller description of the participants in the credit card industry and of the costs and benefits to each.

<sup>20</sup> Kissane and Duca (2005).

<sup>21</sup> Wong (2004a).

<sup>22</sup> Aite Group (2005).

<sup>23</sup> Wilke and Sidel (2005).

<sup>24</sup> Digital Transactions (2005) and American Banker Online (2005).

<sup>25</sup> Kuykendall and Lindemayer (2005).

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Figure 4

| <b>Benefits and Costs for Participants in the Credit Card Industry</b> |   |  |  |
|--|---|--|--|
| Type of Participant  | Function  | Benefits   | Costs  |
| Cardholder   | <ul style="list-style-type: none"> <li>● Purchases goods and services</li> </ul>  | <ul style="list-style-type: none"> <li>● Convenience of making purchases without carrying cash</li> <li>● Ability to time payments to match cash flows</li> <li>● Access to credit</li> <li>● Access to float</li> <li>● Use of bonus features</li> </ul>        | <ul style="list-style-type: none"> <li>● Interest rates and fees</li> <li>● Difficulty managing credit</li> </ul>  |
| Merchants  | <ul style="list-style-type: none"> <li>● Sells goods and services</li> </ul>  | <ul style="list-style-type: none"> <li>● Access to large number of consumers</li> <li>● Ability to sell to consumer needing credit without carrying credit risk</li> <li>● Guaranty of payment</li> </ul>  | <ul style="list-style-type: none"> <li>● Need to pay interchange fees on sales to cardholders</li> <li>● Loss of private credit accounts (customer loyalty, marketing information, interest income)</li> </ul> |
| Issuing Bank   | <ul style="list-style-type: none"> <li>● Collects payments from cardholders</li> <li>● Extends credit to cardholders</li> <li>● Distributes cards</li> <li>● Finances receivables</li> <li>● Authorizes transactions</li> </ul> | <ul style="list-style-type: none"> <li>● Ability to collect on interest rate spreads</li> <li>● Ability to collect fees from cardholders</li> <li>● Ability to share in interchange fees from merchants</li> <li>● Ability to cross-sell to consumers</li> </ul> | <ul style="list-style-type: none"> <li>● Operational costs</li> <li>● Fraud risk</li> <li>● Credit risk</li> </ul>   |
| Acquiring Bank   | <ul style="list-style-type: none"> <li>● Issues payments to merchant</li> <li>● Routes information enabling authorization, billing, and payment to merchant</li> </ul>  | <ul style="list-style-type: none"> <li>● Shares in interchange fees from merchants</li> </ul>  | <ul style="list-style-type: none"> <li>● Operational costs</li> <li>● Some fraud risk</li> </ul>   |
| Card Association   | <ul style="list-style-type: none"> <li>● Promotes the brand</li> <li>● Establishes rules, standards and protocols governing participation in network</li> <li>● Sets interchange fee structure</li> </ul>                       | <ul style="list-style-type: none"> <li>● Collects transaction fees</li> <li>● Collects assessment fees</li> </ul>  | <ul style="list-style-type: none"> <li>● Marketing costs</li> <li>● Cost of fraud reduction programs</li> <li>● Operational costs of maintaining network</li> </ul>  |

*Source:* Federal Deposit Insurance Corporation

sumers have rewards associated with them,<sup>26</sup> and in 2003 an estimated 60 percent of credit card spending was attributed to cards with rewards.<sup>27</sup> Card issuers are funding these increasingly popular reward programs through interchange fees.

Outside the United States, Visa and MasterCard have come under additional pressures to reduce interchange fees. Regulators in Australia, the European Union, Israel, and the United Kingdom, among others, have reviewed the effects of interchange fees on competition. Overseas, Visa and MasterCard have been pressured to reduce these fees.<sup>28</sup>

### Significant Litigation against Visa and MasterCard and Its Aftereffects

As indicated above, when Visa and MasterCard were building their dominant credit card networks, they imposed exclusionary rules and restrictions on other parties to credit card transactions. In two cases, whose outcomes are described in this section, merchants and the U.S. Department of Justice (DOJ) successfully challenged some of these practices. The decisions in the two cases<sup>29</sup> weakened some barriers to competition and reduced the control exercised by the card associations, thus influencing the future of the credit card industry. In fact, the aftereffects of the decisions have already begun appearing.

<sup>26</sup>The lower estimate is from Swartz et al. (2004), and the higher estimate is from Wong (2004b).

<sup>27</sup>Wong (2004b).

<sup>28</sup>These efforts are criticized by Swartz et al. (2004) for not considering the benefits to all parties of payment card usage, and by Schmalensee (2001) for not considering the proper role of interchange fees.

<sup>29</sup>They are: *United States v. VISA U.S.A., Inc.*, 163 F.Supp.2d 322 (S.D.N.Y., 2001) (original decision), with final decision in *United States v. VISA U.S.A., Inc.*, 344 F.3d 229 (2d Cir. 2003) and *In re VISA Check/Mastermoney Antitrust Litigation*, 287 F.Supp.2d 503 (E.D.N.Y. 2003) (original decision), with final decision in *Wal-Mart Stores, Inc. v. VISA U.S.A., Inc.*, 396 F.3d 96 (2d Cir. 2005). The second case is commonly known as the 'Honor-All-Cards' case.

### *Successful Legal Challenges*

One case dealt with restrictions on banks' ability to issue cards that competed with Visa and MasterCard. The other related to a requirement forcing merchants to accept all types of MasterCard and Visa payment cards regardless of the fees associated with those transactions.

The decision in the first case prohibited Visa and MasterCard from banning member banks from issuing cards on rival networks. This litigation ended in October 2004, when the U.S. Supreme Court refused to hear an appeal of the case. The case began in October 1998 when the DOJ claimed that Visa and MasterCard, by not allowing their member banks to issue credit cards on other networks (including American Express and Discover Card), were limiting competition in the credit card market and therefore violating the Sherman Antitrust Act.<sup>30</sup>

The second case illustrated merchants' unwillingness to accept conditions and costs unilaterally imposed on them by the card associations. Some of the largest U.S. merchants—including Wal-Mart Stores Inc. (Wal-Mart), Sears, and Safeway Inc.—joined forces to battle rules imposed on them by MasterCard and Visa. These rules required the merchants to accept for payment any card that had the Visa or MasterCard logo. Merchants challenged the "Honor All Cards" rule because certain types of cards—namely, signature debit cards—had significantly higher processing fees than PIN debit cards, and merchants had no role in establishing these fees. Merchants argued that fees should be established in some proportion to the risks that the transaction poses to the network. As part of a 2003 settlement, Visa and MasterCard agreed to: pay retailers collectively \$3 billion over ten years, temporarily reduce debit card fees, permanently change the "Honor All Cards" policy as it relates to debit cards, and establish lower transaction fees.<sup>31</sup> The settlement did not address requirements for merchants to accept premium credit cards.<sup>32</sup>

The primary significance of these cases is that merchants have become a much stronger bargaining

partner in negotiations over the responsibilities and fees associated with credit card transactions. Merchants are no longer likely to tolerate quietly what they view as uncompetitive practices or unreasonable fees imposed on them by the card associations. One can assume, therefore, that the long and costly battle with Visa and MasterCard has not ended. Because sizeable segments of the merchants' customer base will want to use credit cards for payment, retailers will continue to have difficulty refusing to accept them, but by pursuing alliances with Visa and MasterCard's competitors and by encouraging their customers to use cards with lower merchant fees, merchants may find it easier to win cost concessions.

### *The Aftereffects: Recent Business Alliances and Developments*

Already, merchants' freedom to refuse certain higher-fee cards and banks' freedom to issue any type of credit card have generated new alliances in the reinvigorated credit card industry. Some important deals have since taken place in the wake of the resolution of these cases. It remains to be seen how successful these new partnerships will be.

American Express cards, marketed mostly to wealthy customers on the basis of the cards' superior rewards program, are now offered by banks that were previously prohibited from offering those cards. In January 2004, MBNA became the first major issuer of Visa and MasterCard in the United States to offer American Express as an option to its

<sup>30</sup> After the final disposition of this case, both American Express and Discover filed lawsuits against Visa and MasterCard for unspecified damages.

<sup>31</sup> On April 30, 2003, MasterCard settled the dispute. Terms of the settlement included agreements to (1) pay retailers about \$1 billion over ten years, (2) reduce the debit card fees it charges retailers, (3) change its "Honor All Cards" policy beginning in January 2004 by giving retailers the choice of accepting either online or offline debit cards, and (4) establish a separate interchange rate for its debit transactions (previously it had blended credit and debit transactions into a single interchange rate), reducing the interchange rate for its debit transactions by at least one-third. Visa's settlement agreement contained similar terms, some of which were that Visa would (1) pay retailers \$2 billion over ten years starting in 2004; (2) modify its "Honor All Cards" rule so that beginning in 2004 merchants may accept Visa check card only, Visa credit card only, or both; and (3) lower its fees for certain types of merchants.

<sup>32</sup> Premium cards are a type of credit card typically targeted to more affluent customers that have more rewards and higher interchange fees.



customers;<sup>33</sup> Citigroup Inc. followed suit in December 2004,<sup>34</sup> and USAA Federal Savings Bank in May 2005.<sup>35</sup> In addition, a dual-branded American Express and Visa card (a charge card for American Express, a credit card for Visa) that provides a consolidated rewards program is anticipated to be offered by UBS in late 2005.<sup>36</sup>

Another dual-branded card was announced by MasterCard and the much smaller Diners Club. Diners Club will reissue its cards to include the MasterCard number and to carry both the Diners Club and MasterCard brand marks, with the cards processed as MasterCard transactions in North America but continuing to receive the much superior Diners Club rewards. This deal creates more transactions on the MasterCard system enabling greater economies of scale. It also may bring additional cardholders and merchants into the MasterCard system.<sup>37</sup> Diners Club and its cardholders benefit because the card now will be accepted at almost three times as many merchants.<sup>38</sup>

Discover also announced some potentially important deals. In January 2005, Discover announced plans with Wal-Mart and GE Consumer Finance (a unit of General Electric Company) to launch a new credit card on the Discover network.<sup>39</sup> Wal-Mart will benefit from this arrangement because the arrangement is structured in a way that enables the merchant to avoid paying interchange fees on any transactions made on that card on the merchant's own premises. GE Consumer Finance, the issuer for many large retailers' private credit cards, will issue the card—the first time that an entity other than Discover has issued one of Discover's cards. Should the Wal-Mart–Discover Card product prove successful, Discover may be able to persuade other stores to create similar products, thereby extending the size of its cardholder base. However, this arrangement will not provide Discover with much revenue on card transactions.

Earlier, in November 2004, Discover acquired the Pulse EFT Association for \$311 million. Pulse is the third-largest PIN debit network in the country and had been owned by the more than 4,000 financial institutions that were its members, with

90 million debit cardholders.<sup>40</sup> Discover's acquisition of Pulse provided Discover not only with a debit product but also possibly with a greater opportunity to market its credit card product to Pulse's member financial institutions or directly to their customers.

Consolidation among credit card issuers has increased. During a four-month period in 2005, the three largest monoline credit card banks—MBNA,<sup>41</sup> Capital One Financial Corporation (Capital One),<sup>42</sup> and Provident<sup>43</sup> (the third, fifth, and seventh largest credit card issuers, respectively)—all announced transactions that signaled significant changes in the structure of credit card issuers. MBNA is being acquired by Bank of America, and Provident is being acquired by Washington Mutual. In a mirror image of these transactions, Capital One is purchasing Hibernia Corporation, the holding company for a regional bank.

These transactions will affect the structure of the credit card issuer market. Bank of America now will become the largest issuer. Upon completion of each of these deals, the largest ten issuers will control 90 percent of the market. Greater concentration among card issuers also means that a smaller number of banks will control the card associations.

<sup>33</sup> American Express (2004a).

<sup>34</sup> American Express (2004b).

<sup>35</sup> American Express (2005b).

<sup>36</sup> American Express (2005a).

<sup>37</sup> Diners Club (2004) and MasterCard Inc. (2004).

<sup>38</sup> Lieber (2005).

<sup>39</sup> Wal-Mart (2005).

<sup>40</sup> Discover Financial (2004).

<sup>41</sup> Bank of America (2005).

<sup>42</sup> Capital One (2005).

<sup>43</sup> Washington Mutual (2005).

### Conclusion: Challenges Facing the U.S. Credit Card Industry Today

The challenges facing the U.S. credit card industry are substantial. The largest U.S. merchants are now better able to negotiate lower interchange rates from all networks and may pressure other participants in the credit card transaction to lower costs. They could also develop innovative arrangements to retain a greater portion of the revenue stream. Additionally, other merchants are attempting to replicate these efforts. If successful, these developments could lead to a decline in pricing flexibility for the interchange rate structure on which the multiple card issuer networks are based.

At the same time, Visa and MasterCard's smaller competitors—Discover (the smallest of the major card networks) and American Express—are facing challenges of their own. As noted above, Discover has made moves that may give it access to the debit card market and opportunities to increase its cardholder base; alliances with other large retailers eager to reduce interchange fees may follow. Hindering Discover's efforts are lack of an international presence, limitations associated with its less affluent customer base, and its small number of cardholders and merchants. The future of Discover is largely dependent upon the objectives of its parent company. Management of Discover's parent company, Morgan Stanley, and decisions about Discover's continuing corporate relationship with Morgan Stanley have been uncertain since early 2005, impeding Discover's ability to develop and execute a clear business strategy for its own future.

American Express has made progress in increasing its cardholder base.<sup>44</sup> However, it is facing new competition for its higher net worth customers from MasterCard's World and Visa's Signature programs, both of which offer higher rewards than their traditional programs. The World and Signature programs charge interchange rates that are lower than those of American Express but higher than the two card associations' other programs.<sup>45</sup> American Express may therefore find it hard to maintain high fees, at least with some larger mer-

chants. Finally, greater numbers of consumers are expecting rewards with their card use.

The industry is also facing serious challenges from credit card fraud, identity theft, and the need to secure confidential information. These challenges have always been an operational risk, but the problem has intensified now that large quantities of confidential information are maintained in Internet-accessible systems and criminals are becoming more sophisticated in obtaining and using sensitive data. Besides being a costly drain on banks, these problems have the potential to erode consumer confidence in the credit card industry. Consumers' concerns about the security of credit cards and confidential information need to be addressed. Otherwise, consumers may become reluctant to continue using credit cards as freely as they do now.<sup>46</sup>

Consumers' growing sophistication in the use of their credit cards goes beyond their greater awareness of fraud issues. An important element of the business model of credit card issuers is interest income. However, increasing numbers of cardholders—an estimated 55 percent of them—are “convenience users,” paying their balances in full each month to avoid interest charges.<sup>47</sup> On the other hand, others are having difficulty managing the use of their cards, incurring debt potentially beyond their means to repay and representing credit risk to card issuers.

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<sup>44</sup> However, it is unclear whether Bank of America, after its acquisition of MBNA, will implement MBNA's previous decision to issue American Express cards.

<sup>45</sup> Mason (2005).

<sup>46</sup> Both Visa and MasterCard have recently instituted zero-liability policies in an effort to combat these concerns. Visa states: “Use your Visa card to shop online, in a store, or anywhere, and you're protected from unauthorized use of your card or account information. With Visa's Zero Liability policy, your liability for unauthorized transactions is \$0—you pay nothing.” MasterCard states: “As a MasterCard cardholder you are not liable in the event of an unauthorized use of your U.S.-issued MasterCard card. This coverage extends to purchases made in a store, over the telephone, or online.”

<sup>47</sup> Aizcorbe, Kennickell, and Moore (2003).

## Overview of Recent Developments in the Credit Card Industry

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In short, the highly competitive credit card industry is in flux. Credit card associations, controlled by a diminishing number of large card issuers, are caught between cardholders seeking greater rewards and merchants trying to lower the cost of accepting payments. At the same time, the card

associations are not only incurring increasing expenses because of fraud and fraud prevention but they are also bearing the costs of recent and pending litigation. For decades it was not hard to envision what the credit card industry would look like five years into the future. This is no longer true.

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# A Moving-Average Formula for Calculating Deposit Insurance Assessments

by Panos Konstas\*

Current deposit insurance assessment policy is largely a product of three laws passed by Congress between 1989 and 1996: the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA), the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), and the Deposit Insurance Funds Act of 1996 (DIFA).<sup>1</sup> FIRREA chiefly addressed the financial crisis facing the thrift industry, but it also made fundamental changes in the deposit insurance assessment system. It renamed the FDIC's deposit insurance fund the Bank Insurance Fund (BIF), and it created the Savings Association Insurance Fund (SAIF). It also established a statutory minimum reserve ratio—called the designated reserve ratio (DRR)—of 1.25 percent for both the BIF and the SAIF. Two years after passage of FIRREA, FDICIA further changed the assessment system: it required the FDIC to (1) establish a system of risk-based deposit insurance premiums, (2) impose a minimum level of assessments on insured institutions when the reserve ratio is less than the DRR, and (3) set semiannual assessments to maintain the reserve ratio of each fund at 1.25 percent. Five years later still, DIFA enacted further changes, eliminating significant differences in the pricing of deposit insurance for BIF and SAIF members and

limiting the FDIC's ability to charge premiums when the reserve ratio is at or above the DRR.

Thus, since 1996 the BIF and the SAIF have been on a pay-as-you-go basis in relation to the ratio of each insurance fund's balance—or net worth—to its estimated insured deposits. Should insurance costs push the reserve ratio of either fund below 1.25 percent, the FDIC must either set premiums at a level that will bring the fund back to 1.25 percent within one year or set premiums at a minimum of 23 basis points and establish a plan to bring the fund back up to a 1.25 percent level within 15 years.<sup>2</sup> In either the 1-year case or the 15-year case, insurance losses greater than the interest income earned by the BIF or the SAIF will result in higher premiums for the banking indus-

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<sup>1</sup> Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Public Law 101-103; Federal Deposit Insurance Corporation Improvement Act of 1991, Public Law 102-242, and Deposit Insurance Funds Act of 1996, Public Law 104-208.

<sup>2</sup> See footnote 9.

## A Formula for Calculating Deposit Insurance Assessments

try—an event that could be a formidable problem for banks during periods of financial stress.

This article examines the level and volatility of the assessment rates that would have been imposed if the current 1.25 DRR policy had been in effect when the FDIC first began operations in 1934. Specifically, to get an idea of how high the required premiums might have been and how dramatically they might have changed from year to year, we calculated BIF assessment rates for the 1940–1995 period using current law.<sup>3</sup> The results indicate that if the current law had been in effect from 1940 to 1995, assessment rates would have swung widely during volatile times, with high assessments in some years and low or zero premiums in others, and that in general the policy would have imposed high premiums when bank profits were weak and low premiums when profits were strong.

We also examined two premium-setting schemes that contrast with the current system. The first involves deriving the applicable assessment rates to maintain the reserve ratio at 1.25 percent on the basis of a moving average of previous years' actual BIF outlays for failures and operating costs. This approach would smooth the extremes in the high assessment rates required under the current policy, thus helping the banking industry through cyclical fluctuations. However, assessment rates would still change almost yearly, and in some years assessment rebates would be needed to maintain the reserve ratio at 1.25 percent. The second scheme uses the same moving-average method, but in addition it imposes a minimum positive assessment premium in the calculation formula. The advantages of this scheme are that assessment rebates would be eliminated by definition and the yearly assessment rate would remain relatively stable over long stretches of time. But the possibility of very high premiums in some years would remain.

### The Development of the Current Assessment System

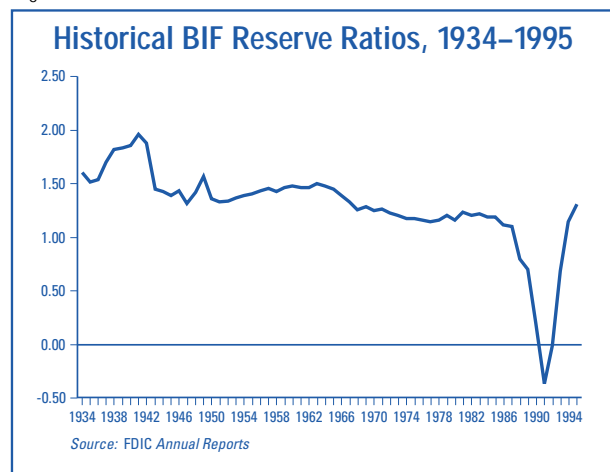
To give a fuller understanding of the current assessment system, this section discusses the history of

the reserve ratio, the premium structure, and the role played by insurance losses.

### The Reserve Ratio

Throughout the FDIC's history the reserve ratio has been noticeably stable over long periods, although the long-term trend has generally been downward. The ratio was at its highest during the first ten years of the FDIC's existence, peaking at 1.96 percent in 1941. From the mid-1940s to the late 1960s the ratio fluctuated between 1.3 and 1.5 percent, and during the 1970s and early 1980s it hovered around 1.2 percent. Then came the banking crisis of the 1980s and early 1990s. In 1989, when the 1.25 percent DRR requirement was introduced by FIRREA, the ratio of the BIF to estimated insured deposits stood at 0.70 percent (see table 1 and figure 1).

Figure 1



The main events affecting the ratio have been statutory changes in the insurance limit and insurance losses from bank failures. In 1974, when Congress raised the insurance coverage from \$20,000 to \$40,000, the ratio declined, and it declined again in 1980 when the \$40,000 limit was raised to the current \$100,000. It declined further, and the fund reserves briefly fell below zero, during the aforementioned banking crisis, during which the fund had to absorb actual and projected losses.

<sup>3</sup> Although the FDIC manages the BIF and the SAIF, the analysis here focuses only on the BIF.



## A Formula for Calculating Deposit Insurance Assessments

Table 1

| Data on the FDIC Bank Insurance Fund (Dollar Amounts in Millions) |                            |           |               |                 |                                  |                              |           |
|---|----------------------------|-----------|---------------|-----------------|----------------------------------|------------------------------|-----------|
| Year  | Estimated Insured Deposits | BIF Costs | BIF Net Worth | Assessment Base | Effective Assessment Rate (b.p.) | Effective Assessment Revenue | BIF Ratio |
| 1995  | 1,952,543                  | 484       | 25,453        | 2,429,200       | 12.4                             | 2,908                        | 1.30      |
| 1994  | 1,896,060                  | -2,259    | 21,848        | 2,496,000       | 23.6                             | 5,891                        | 1.15      |
| 1993  | 1,906,885                  | -6,791    | 13,122        | 2,370,615       | 24.4                             | 5,784                        | 0.69      |
| 1992  | 1,945,623                  | -626      | -101          | 2,429,478       | 23.0                             | 5,588                        | -0.01     |
| 1991  | 1,957,722                  | 16,862    | -7,028        | 2,428,471       | 21.3                             | 5,161                        | -0.36     |
| 1990  | 1,929,612                  | 13,003    | 4,045         | 2,379,417       | 12.0                             | 2,855                        | 0.21      |
| 1989  | 1,873,837                  | 4,346     | 13,210        | 2,262,905       | 8.3                              | 1,885                        | 0.70      |
| 1988  | 1,750,259                  | 7,588     | 14,061        | 2,128,451       | 8.3                              | 1,773                        | 0.80      |
| 1987  | 1,658,802                  | 3,271     | 18,302        | 2,036,014       | 8.3                              | 1,696                        | 1.10      |
| 1986  | 1,634,302                  | 2,964     | 18,253        | 1,821,008       | 8.3                              | 1,517                        | 1.12      |
| 1985  | 1,503,393                  | 1,958     | 17,957        | 1,720,768       | 8.3                              | 1,433                        | 1.19      |
| 1984  | 1,389,874                  | 1,999     | 16,529        | 1,586,435       | 8.0                              | 1,269                        | 1.19      |
| 1983  | 1,268,322                  | 970       | 15,429        | 1,458,463       | 7.1                              | 1,041                        | 1.22      |
| 1982  | 1,134,221                  | 1,000     | 13,771        | 1,331,212       | 7.7                              | 1,024                        | 1.21      |
| 1981  | 988,898                    | 848       | 12,246        | 1,247,299       | 7.1                              | 891                          | 1.24      |
| 1980  | 948,717                    | 84        | 11,020        | 1,142,737       | 3.7                              | 423                          | 1.16      |
| 1979  | 808,555                    | 94        | 9,793         | 1,057,623       | 3.3                              | 352                          | 1.21      |
| 1978  | 760,706                    | 149       | 8,796         | 972,509         | 3.9                              | 374                          | 1.16      |
| 1977  | 692,533                    | 114       | 7,993         | 877,911         | 3.7                              | 325                          | 1.15      |
| 1976  | 628,263                    | 212       | 7,269         | 811,645         | 3.7                              | 300                          | 1.16      |
| 1975  | 569,101                    | 98        | 6,716         | 769,868         | 3.6                              | 275                          | 1.18      |
| 1974  | 520,309                    | 159       | 6,124         | 705,162         | 4.4                              | 307                          | 1.18      |
| 1973  | 465,600                    | 108       | 5,615         | 635,534         | 3.9                              | 245                          | 1.21      |
| 1972  | 419,756                    | 60        | 5,159         | 562,785         | 3.3                              | 187                          | 1.23      |
| 1971  | 374,568                    | 60        | 4,740         | 500,840         | 3.5                              | 173                          | 1.27      |
| 1970  | 349,581                    | 46        | 4,380         | 443,337         | 3.6                              | 158                          | 1.25      |
| 1969  | 313,085                    | 35        | 4,051         | 437,215         | 3.3                              | 146                          | 1.29      |
| 1968  | 296,701                    | 29        | 3,749         | 401,561         | 3.3                              | 134                          | 1.26      |
| 1967  | 261,149                    | 27        | 3,486         | 363,866         | 3.3                              | 121                          | 1.33      |
| 1966  | 234,150                    | 20        | 3,252         | 341,297         | 3.2                              | 110                          | 1.39      |
| 1965  | 209,690                    | 23        | 3,036         | 312,725         | 3.2                              | 101                          | 1.45      |
| 1964  | 191,787                    | 18        | 2,845         | 285,954         | 3.2                              | 92                           | 1.48      |
| 1963  | 177,381                    | 15        | 2,668         | 264,826         | 3.1                              | 83                           | 1.50      |
| 1962  | 170,210                    | 14        | 2,502         | 244,178         | 3.1                              | 76                           | 1.47      |
| 1961  | 160,309                    | 15        | 2,354         | 226,771         | 3.2                              | 73                           | 1.47      |
| 1960  | 149,684                    | 13        | 2,222         | 216,567         | 3.7                              | 80                           | 1.48      |
| 1959  | 142,131                    | 12        | 2,090         | 213,926         | 3.7                              | 79                           | 1.47      |
| 1958  | 137,698                    | 12        | 1,965         | 200,240         | 3.7                              | 74                           | 1.43      |
| 1957  | 127,055                    | 10        | 1,851         | 191,236         | 3.6                              | 68                           | 1.46      |
| 1956  | 121,008                    | 9         | 1,742         | 186,675         | 3.7                              | 69                           | 1.44      |
| 1955  | 116,380                    | 9         | 1,640         | 181,873         | 3.7                              | 67                           | 1.41      |
| 1954  | 110,973                    | 8         | 1,543         | 173,109         | 3.6                              | 62                           | 1.39      |
| 1953  | 105,610                    | 7         | 1,451         | 166,507         | 3.6                              | 59                           | 1.37      |
| 1952  | 101,841                    | 8         | 1,364         | 157,263         | 3.7                              | 58                           | 1.34      |
| 1951  | 96,713                     | 7         | 1,282         | 149,220         | 3.7                              | 55                           | 1.33      |
| 1950  | 91,359                     | 8         | 1,244         | 147,539         | 3.7                              | 55                           | 1.36      |
| 1949  | 76,589                     | 6         | 1,204         | 147,299         | 8.3                              | 123                          | 1.57      |
| 1948  | 75,320                     | 7         | 1,066         | 143,217         | 8.3                              | 119                          | 1.42      |
| 1947  | 76,254                     | 10        | 1,006         | 137,335         | 8.3                              | 114                          | 1.32      |
| 1946  | 73,759                     | 10        | 1,059         | 128,451         | 8.3                              | 107                          | 1.44      |
| 1945  | 67,021                     | 9         | 929           | 112,485         | 8.3                              | 94                           | 1.39      |
| 1944  | 56,398                     | 9         | 804           | 97,119          | 8.3                              | 81                           | 1.43      |
| 1943  | 48,440                     | 10        | 703           | 84,034          | 8.3                              | 70                           | 1.45      |
| 1942  | 32,837                     | 10        | 617           | 67,827          | 8.3                              | 57                           | 1.88      |
| 1941  | 28,249                     | 10        | 554           | 61,705          | 8.3                              | 51                           | 1.96      |
| 1940  | 26,638                     | 13        | 496           | 55,462          | 8.3                              | 46                           | 1.86      |
| 1939  | 24,650                     | 16        | 453           | 48,860          | 8.3                              | 41                           | 1.84      |
| 1938  | 23,121                     | 11        | 421           | 45,978          | 8.3                              | 38                           | 1.82      |
| 1937  | 22,557                     | 12        | 383           | 46,579          | 8.3                              | 39                           | 1.70      |
| 1936  | 22,330                     | 11        | 343           | 42,737          | 8.3                              | 36                           | 1.54      |
| 1935  | 20,158                     | 11        | 306           | 13,806          | 8.3                              | 12                           | 1.52      |
| 1934  | 18,075                     | 10        | 292           |                 |                                  |                              | 1.61      |
| Mean  | 569,726                    | 762       | 5,350         | 732,805         | 6.9                              | 763                          | 1.29      |
| Std. Dev  | 662,395                    | 3,048     | 6,383         | 799,699         | 5.0                              | 1,442                        | 0.39      |

Source: FDIC Annual Reports

## A Formula for Calculating Deposit Insurance Assessments

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### *The Premium Structure*

At the same time that the reserve ratio has been trending downward, the structure of premium assessments has been evolving. Until 1989, all insured banks paid assessments at a statutory annual flat rate of 1/12 of 1 percent (0.0833 percent, or 8.33 basis points) of assessable deposits.<sup>4</sup> During periods when bank failures were rare, the fund kept growing. In 1950, the Federal Deposit Insurance Act provided for a rebate to banks of a portion of their assessments in the form of an assessment credit applied toward the amount owed in the following year. Specifically, the rebates—or assessment credits—totaled 60 percent of net assessment income (the amount of the FDIC's annual assessment income in excess of its annual administrative expenses and costs of insurance losses).<sup>5</sup> For the period 1950–1980, in every year but one these rebates reduced the effective assessment rate to less than half of the statutory rate (see table 1).

As noted above, FIRREA made several important changes in the system of assessments. It increased the statutory assessment rate to 0.12 percent in 1990 and to a minimum of 0.15 percent in 1991, and it gave the FDIC additional flexibility to adjust assessment rates and pursue reserve targets. Specifically, the FDIC would be able to increase the assessment rate up to a maximum of 0.325 percent to prevent a decrease in the ratio of the BIF to estimated insured deposits. And the FDIC would be able to set the DRR as high as 1.50 percent if that high a ratio was deemed necessary to meet a risk of substantial future losses to the BIF.<sup>6</sup> Subsequently, high actual and projected losses to the BIF caused the assessment rate for banks to increase sharply, reaching 0.23 percent (23 basis points) in 1993.

In January 1993, as required by FDICIA, the FDIC implemented a system of risk-based deposit insurance premiums. Under the system, deposit insurance assessments are based on the financial soundness of the institution and the level of risk that it poses to the deposit insurance funds.<sup>7</sup> Specifically, risk-based premiums are determined on the basis of capital and supervisory ratings: the capital rating provides an objective, numerical

standard, and the supervisory rating incorporates examination results and other risk-related information.<sup>8</sup> FDICIA required the risk-based system to charge an average annual assessment rate of 23 basis points until the BIF was recapitalized.<sup>9</sup> The original assessment schedule implemented in 1993 (shown in table 2) had a rate spread of 8 basis points: the best-rated institutions were charged 23 basis points and the riskiest institutions were charged 31 basis points. The effective or average annual assessment rate in 1993 was 0.244 percent, or 24.4 basis points.

After the BIF reserve ratio reached the DRR in mid-1995, the FDIC began to lower BIF assessment rates in order to maintain the reserve ratio at 1.25 percent. Accordingly, the average assessment rate for the second half of 1995 declined from 23.2 points (a matrix spread of 23 to 31 basis points) to 4.4 basis points (a matrix spread of 4 to 31 basis points). In 1996, the assessment rate schedule was again lowered, so that the best-rated institutions were charged nothing, and the riskiest institutions were charged 27 basis points. Because the BIF reserve ratio remains above 1.25 percent, the FDIC continues to use this rate schedule today (see table 2).

<sup>4</sup> Deposit insurance premiums are assessed against total domestic deposits (demand deposits and time and savings deposits), adjusted for items such as float.

<sup>5</sup> See Christopher (1978).

<sup>6</sup> See Konstas (1992) for details.

<sup>7</sup> FDICIA requires the FDIC to set risk-based deposit insurance rates independently for the BIF and the SAIF.

<sup>8</sup> The capital measures are consistent with the prompt corrective action requirements of FIRREA.

<sup>9</sup> Under FDICIA, when the reserve ratio of the BIF falls below 1.25 percent, as it did before May 1995, the FDIC is given two alternatives: it can impose semiannual assessment rates to generate sufficient revenue to raise the BIF ratio to the designated target within a year after such rates have been set, or it can promulgate through regulation a schedule of assessment rates (for a period of up to 15 years) that would return the fund to the designated 1.25 percent reserve goal. When the second option is selected, the FDIC is required to set assessment rates for members in accordance with a time schedule that specifies, at semiannual intervals, target reserve ratios for the BIF, culminating in attainment of the designated ratio within 15 years. Under this second option, the statute explicitly directs the FDIC to set rates that will at a minimum generate revenue equivalent to the amount generated by the assessment rate in effect on July 15, 1991 (when an assessment rate of 23 basis points applied), as long as the BIF ratio remains below 1.25 percent. Under the second option, therefore, if the reserve ratio falls below 1.25 percent, the minimum premium that can be charged to the industry for restoring the reserve ratio to the DRR is 23 basis points.

## A Formula for Calculating Deposit Insurance Assessments

Table 2

| <b>Risk-Based Deposit Insurance Rate Schedule, 1993 and 2005</b> |                           |    |    |
|--|---------------------------|----|----|
| <b>1993 (Original) Rate Matrix (basis points)</b>                |                           |    |    |
| Capital Group  | Supervisory Risk Subgroup |    |    |
|  | A                         | B  | C  |
| 1. Well capitalized  | 23                        | 26 | 29 |
| 2. Adequately capitalized  | 26                        | 29 | 30 |
| 3. Undercapitalized  | 29                        | 29 | 31 |
| <b>2005 (Current) Rate Matrix (basis points)</b>                 |                           |    |    |
| Capital Group  | Supervisory Risk Subgroup |    |    |
|  | A                         | B  | C  |
| 1. Well capitalized  | 0                         | 3  | 17 |
| 2. Adequately capitalized  | 3                         | 10 | 24 |
| 3. Undercapitalized  | 10                        | 24 | 27 |
| <i>Source: FDIC Quarterly Banking Profile.</i>                   |                           |    |    |

### Insurance Losses

Obviously, the size of the assessments that must be imposed on banks is determined largely by insurance losses, for when losses occur they are often a major expense item on the BIF's income statement. During the banking crisis of the 1980s and early 1990s, insurance losses increased dramatically. Losses through 1983 had amounted to less than \$1 billion per year, but in 1984 they more than doubled, exceeding assessment income. As a result, assessment credits were no longer feasible.<sup>10</sup> Losses rose to \$7.4 billion in 1988, and for the first time in its history the FDIC experienced a net operating loss. In 1991, estimated losses from banks that regulators had identified as either equity insolvent or likely to become equity insolvent in the foreseeable future rose to \$16.3 billion—a record high.<sup>11</sup>

The losses during this period occurred against a backdrop of premium increases for insured institutions and far-reaching deposit insurance reform legislation. These developments, coupled with a recorded BIF deficit of \$7.0 billion in 1991, raised new concerns not only about the viability of the deposit insurance system but also about the operating policies of both the FDIC and insured institutions.

### The Implications of Assessing under the Designated Reserve Ratio of 1.25 Percent

The current policy reflects two distinct types of problems. The first is reflected in the requirement that the ratio of the BIF to estimated insured deposits must be at least 1.25 percent. In fact there is no widely accepted method of determining the optimum size of the BIF, either in terms of an absolute amount or in relation to some measure of exposure. The BIF has to be sufficient to cover losses and meet cash needs. Beyond that, its proper size depends on the contingencies the BIF is expected to handle and on the public's perception of the FDIC's ability to meet its obligations under alternative economic scenarios. If the public is satisfied with the prospects for the economy and the banking industry, a 1.25 percent BIF ratio may seem entirely adequate. The same ratio, however, may look less than adequate when the economy and banks' prospects worsen.

The second type of problem is reflected in the requirement that premium assessments on banks be set at whatever amounts are necessary to keep the BIF ratio at some given level. In fact (and not surprisingly), for the banking industry high failure rates and low profits tend to occur concurrently. Thus, when higher assessment premiums are required under the current policy, they are likely to be charged when many banks are least able to afford them. The problem is, of course, compounded if the assessment revenue that must be raised in a given year must also be allocated among banks according to each bank's risk status. High-risk banks then will be subjected to higher costs when they can least afford it in terms of both their low profitability and their disadvantage compared with competitors designated as better risks. Under these conditions, a premium structure with the

<sup>10</sup> 1983 was the last year that the FDIC provided assessment credits. In 1991, FDICIA removed the FDIC's authority to provide rebates of any kind.

<sup>11</sup> However, the large number of failures forecast in 1991 did not occur, so for 1992, 1993, and 1994, loss reserves of \$1.2 billion, \$7.3 billion, and \$2.7 billion were added back into the BIF (see Federal Deposit Insurance Corporation, *Annual Report* for cited years).

## A Formula for Calculating Deposit Insurance Assessments

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flexibility to deal with the varying loss situations over time becomes a necessity.

To see the effects of the current rules, we have applied the current statutory requirement to maintain the BIF reserve ratio at the 1.25 percent DRR to annual data for the period 1940–1995. In any given year, the assessment revenue necessary to maintain the BIF at the DRR is a function of three independent variables: BIF costs (actual and anticipated failure losses plus operating expenses), growth in insured deposits, and interest earnings on the BIF portfolio. The reserve ratio is defined as the BIF's net worth as of a given date divided by the amount of estimated insured deposits at that date. The equation for the revenue for year  $t$  is

$$\begin{aligned} \text{Assessment Revenue}_t = & \text{BIF Costs}_t + \\ & 0.0125(\text{Insured Deposits}_t - \\ & \text{Insured Deposits}_{t-1}) - \\ & \text{BIF Net Worth}_{t-1}(\text{Interest Rate}_t) \end{aligned}$$

This equation shows that, for a given year, the FDIC must raise enough assessment revenue so that the combined amount of assessment revenue and investment income will prove sufficient to cover BIF costs plus the designated portion (1.25 percent) of the change in insured deposits during the year. This ensures that the BIF reserve ratio at the end of the year will remain at the 1.25 percent DRR. For the simulation, it has been assumed that all of the BIF's net worth is invested in U.S. securities, where it earns interest at the Treasury 10-year bond rate.<sup>12</sup>

The results of simulation over the 1940–1995 period are shown in table 3. As indicated on the left side of the table, the 1.25 percent ratio can be maintained only if the FDIC is able to rebate premiums in no fewer than eight years during the period. But under current law no rebates are allowed; thus the least amount of assessment that the FDIC may put into effect in any one year is zero.<sup>13</sup>

The right side of table 3 shows the results of a simulation for 1940–1995 that included no rebates and a zero minimum assessment regime. These conditions comply with the no rebate requirement,

but they also necessitate some major deviations from the 1.25 DRR target. At the end of 1994 and 1995, for example, BIF ratios would have reached over 2 percent. Note that in 1988, 1990, and 1991, this simulation results in required assessment rates that are well above those actually imposed at the time (see tables 1 and 3).

As shown in the right side of table 3, if the current 1.25 DRR policy had been implemented in 1940, the assessment rate necessary to cover losses, operating expenses, and the fraction of the change in insured deposits for that year would have amounted to 5.6 basis points. From then until the late 1980s the necessary assessment rates would have remained generally at manageable levels. After that, however, assessment rates would have skyrocketed: 32.3 basis points for 1988, 17.7 points for 1989, and 49.0 and 62.8 points for 1990 and 1991 (again, well over two-and-a-half times the actual assessment rate applied in either year). The practical effects of levying such assessments on the industry could have been severe. A 49 basis point assessment in 1990 and a 62.8 point levy in 1991, for example, would have meant accrued costs for banks equal to about 75 percent of 1990 profits and 85 percent of 1991 profits.

The current policy of maintaining the 1.25 DRR poses another problem for the banking industry besides occasional very high assessments. The policy requires the rate of assessment to change frequently and swing widely. For example, under the zero minimum assessment (or no rebate) regime, the assessment rate declines from 62.8 basis points to zero basis points between 1991 and 1992. Such volatility is a problem because changes in the assessment rate affect bank income and net inter-

<sup>12</sup>In practice, the BIF is invested in both long- and short-term Treasuries, according to FDIC investment policies. This investment structure allows the fund to maintain liquidity for resolving failed banks but still generates some income to keep the fund balance at or above the DRR.

<sup>13</sup>The FDIC's current proposals for deposit insurance reform include giving the FDIC Board authority to implement surcharges, rebates and credits as needed to maintain the reserve ratio around the 1.25 percent level. For more information, see [www.fdic.gov/news/news/speeches/chairman/spmar1705.html](http://www.fdic.gov/news/news/speeches/chairman/spmar1705.html).

## A Formula for Calculating Deposit Insurance Assessments

Table 3

| <b>Application of Present (1.25 DRR) Policy</b> (Dollar Amounts in Millions) |                                 |           |                                 |                                      |           |                                 |
|--|---------------------------------|-----------|---------------------------------|--------------------------------------|-----------|---------------------------------|
| Year   | No Assessment Minimum (Rebates) |           |                                 | Zero Assessment Minimum (No Rebates) |           |                                 |
|  | Assessment Rate (b.p.)          | BIF Ratio | Required Assessment Income (\$) | Assessment Rate (b.p.)               | BIF Ratio | Required Assessment Income (\$) |
| 1995   | -2.1                            | 1.25      | -505                            | 0.0                                  | 2.19      | 0                               |
| 1994   | -16.7                           | 1.25      | -4,161                          | 0.0                                  | 2.13      | 0                               |
| 1993   | -37.3                           | 1.25      | -8,842                          | 0.0                                  | 1.86      | 0                               |
| 1992   | -10.8                           | 1.25      | -2,617                          | 0.0                                  | 1.39      | 0                               |
| 1991   | 62.8                            | 1.25      | 15,245                          | 62.8                                 | 1.25      | 15,245                          |
| 1990   | 49.0                            | 1.25      | 11,653                          | 49.0                                 | 1.25      | 11,652                          |
| 1989   | 17.7                            | 1.25      | 4,014                           | 17.7                                 | 1.25      | 4,013                           |
| 1988   | 32.3                            | 1.25      | 6,870                           | 32.3                                 | 1.25      | 6,869                           |
| 1987   | 8.9                             | 1.25      | 1,812                           | 8.9                                  | 1.25      | 1,811                           |
| 1986   | 16.9                            | 1.25      | 3,070                           | 16.9                                 | 1.25      | 3,070                           |
| 1985   | 8.8                             | 1.25      | 1,509                           | 8.8                                  | 1.25      | 1,508                           |
| 1984   | 10.2                            | 1.25      | 1,618                           | 10.2                                 | 1.25      | 1,617                           |
| 1983   | 7.6                             | 1.25      | 1,109                           | 7.6                                  | 1.25      | 1,108                           |
| 1982   | 9.8                             | 1.25      | 1,305                           | 9.7                                  | 1.25      | 1,290                           |
| 1981   | -1.4                            | 1.25      | -176                            | 0.0                                  | 1.26      | 0                               |
| 1980   | 6.5                             | 1.25      | 743                             | 6.4                                  | 1.25      | 728                             |
| 1979   | -1.3                            | 1.25      | -139                            | 0.0                                  | 1.27      | 0                               |
| 1978   | 3.3                             | 1.25      | 318                             | 3.3                                  | 1.25      | 318                             |
| 1977   | 4.1                             | 1.25      | 363                             | 4.1                                  | 1.25      | 362                             |
| 1976   | 5.8                             | 1.25      | 470                             | 5.8                                  | 1.25      | 469                             |
| 1975   | 3.3                             | 1.25      | 253                             | 3.3                                  | 1.25      | 253                             |
| 1974   | 6.2                             | 1.25      | 436                             | 6.2                                  | 1.25      | 436                             |
| 1973   | 5.5                             | 1.25      | 351                             | 5.5                                  | 1.25      | 350                             |
| 1972   | 6.4                             | 1.25      | 361                             | 6.4                                  | 1.25      | 361                             |
| 1971   | 2.4                             | 1.25      | 122                             | 2.4                                  | 1.25      | 122                             |
| 1970   | 5.5                             | 1.25      | 244                             | 5.5                                  | 1.25      | 244                             |
| 1969   | 0.3                             | 1.25      | 13                              | 0.3                                  | 1.25      | 13                              |
| 1968   | 7.5                             | 1.25      | 302                             | 7.5                                  | 1.25      | 302                             |
| 1967   | 6.1                             | 1.25      | 223                             | 6.1                                  | 1.25      | 223                             |
| 1966   | 6.0                             | 1.25      | 204                             | 6.0                                  | 1.25      | 203                             |
| 1965   | 4.7                             | 1.25      | 146                             | 4.7                                  | 1.25      | 146                             |
| 1964   | 3.7                             | 1.25      | 106                             | 3.7                                  | 1.25      | 106                             |
| 1963   | 0.7                             | 1.25      | 20                              | 0.7                                  | 1.25      | 20                              |
| 1962   | 2.4                             | 1.25      | 58                              | 2.4                                  | 1.25      | 58                              |
| 1961   | 3.3                             | 1.25      | 75                              | 3.3                                  | 1.25      | 75                              |
| 1960   | 1.6                             | 1.25      | 36                              | 1.6                                  | 1.25      | 36                              |
| 1959   | -0.1                            | 1.25      | -3                              | 0.0                                  | 1.25      | 0                               |
| 1958   | 4.5                             | 1.25      | 90                              | 4.5                                  | 1.25      | 90                              |
| 1957   | 1.7                             | 1.25      | 33                              | 1.7                                  | 1.25      | 33                              |
| 1956   | 1.2                             | 1.25      | 22                              | 1.2                                  | 1.25      | 22                              |
| 1955   | 2.0                             | 1.25      | 36                              | 2.0                                  | 1.25      | 36                              |
| 1954   | 2.3                             | 1.25      | 39                              | 2.3                                  | 1.25      | 39                              |
| 1953   | 0.9                             | 1.25      | 14                              | 0.9                                  | 1.25      | 14                              |
| 1952   | 2.5                             | 1.25      | 40                              | 2.5                                  | 1.25      | 39                              |
| 1951   | 3.0                             | 1.25      | 44                              | 3.0                                  | 1.25      | 44                              |
| 1950   | 11.5                            | 1.25      | 170                             | 11.5                                 | 1.25      | 170                             |
| 1949   | 0.4                             | 1.25      | 6                               | 0.4                                  | 1.25      | 6                               |
| 1948   | -1.7                            | 1.25      | -24                             | 0.0                                  | 1.28      | 0                               |
| 1947   | 1.9                             | 1.25      | 26                              | 1.9                                  | 1.25      | 26                              |
| 1946   | 6.4                             | 1.25      | 82                              | 6.4                                  | 1.25      | 82                              |
| 1945   | 11.6                            | 1.25      | 131                             | 11.6                                 | 1.25      | 131                             |
| 1944   | 10.0                            | 1.25      | 97                              | 10.0                                 | 1.25      | 97                              |
| 1943   | 23.4                            | 1.25      | 197                             | 23.4                                 | 1.25      | 197                             |
| 1942   | 8.9                             | 1.25      | 61                              | 8.9                                  | 1.25      | 61                              |
| 1941   | 3.8                             | 1.25      | 24                              | 3.8                                  | 1.25      | 24                              |
| 1940   | 5.6                             | 1.25      | 31                              | 5.6                                  | 1.25      | 31                              |
| Mean   | 6.1                             | 1.25      | 674                             | 7.3                                  | 1.30      | 967                             |
| Std. Dev   | 13.2                            | 0         | 3,080                           | 11.1                                 | 0.19      | 2,678                           |

## A Formula for Calculating Deposit Insurance Assessments

est margins, much as changes in the cost for borrowed funds do.<sup>14</sup>

The two main reasons for the wide swings in the assessment rate required under the DRR are that BIF costs are highly correlated with the state of the economy (as mentioned above) and that estimating future bank failures and future BIF losses from those failures cannot be done with great precision. Under generally accepted accounting principles (GAAP), which the FDIC is required to follow, losses on bank failures projected to occur within the next year, must be recognized when these losses are “estimable and probable.” Such losses can not always be calculated accurately. In the early 1990s, when estimated failures dramatically increased, large loss reserves were charged to the fund, but when the economy rapidly improved and the projected failures did not arrive, the loss reserves had to be reversed. As a result, BIF reserves and the reserve ratio swung dramatically in the 1991–1994 period.

### The Moving-Average Alternative

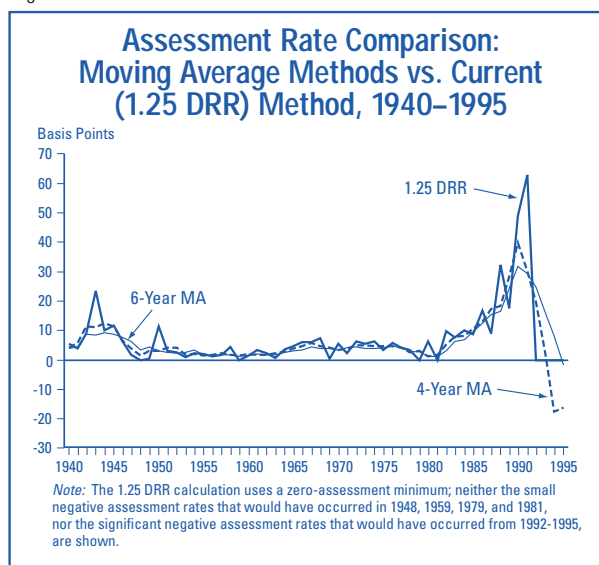
An alternative to the current assessment system is one in which the annual assessment is based on a moving average of past years’ BIF costs, including the necessary adjustment for the change in insured deposits. Unlike the current system, which raises assessment income as necessary to maintain the BIF ratio at 1.25 percent, the moving-average (MA) alternative would raise income according to a fixed formula that would allow the BIF ratio to achieve the 1.25 percent level over a span of time. Because of averaging, such a system would tend to reduce the extreme variability in annual premiums. When BIF costs were rising, banks in a given year would be assessed at a lower rate than the rate necessary to cover actual or anticipated BIF costs, and the observed BIF ratio for the year would tend to decline. This would occur when actual costs were rising, as happened during the 1980s. The reverse would be true when costs were falling: in years when actual costs were falling, as happened in 1979 and 1980, the assessment raised under the MA method would tend to exceed the BIF costs incurred.

We can simulate the MA method by using the BIF statistics contained in table 1. We derived four- and six-year moving-average calculations for assessment revenues and other data starting with 1940. For the four-year average, we determined the assessment for a given year by summing up the BIF costs (insurance losses plus operating expenses) and the insured-deposits growth factor of the previous four years, dividing the total by four, and subtracting from the quotient the amount of investment income earned by the BIF during the year. For example, to calculate the premium for 1940 we summed up the actual BIF costs and insured-deposit reserve factors (annual dollar change in insured deposits times 0.0125) for 1939, 1938, 1937, and 1936; divided the resultant total by four; and subtracted from this number the income earned on the investment of the BIF balance in 1940 (year-end 1939 BIF net worth times the interest rate for 1940).

This approach avoids most of the problems mentioned above associated with the present 1.25 DRR method. As shown in table 4 and figure 2, both the four- and the six-year MA methods produce assessment-rate and assessment-income

<sup>14</sup>From the standpoint of a bank, a 25 basis point increase in the assessment rate is the same as a one-quarter of 1 percent increase in the interest rate for deposit funds. This type of change, whether in the assessment rate or in the interest rate, makes it more costly for a bank to carry and continue refinancing long-term assets, such as home mortgages.

Figure 2



## A Formula for Calculating Deposit Insurance Assessments

Table 4

| <b>Application of Moving Average Method</b> (Dollar Amounts in Millions) |                        |           |                                 |                        |           |                                 |
|--|------------------------|-----------|---------------------------------|------------------------|-----------|---------------------------------|
| Year   | 4-year Moving Average  |           |                                 | 6-year Moving Average  |           |                                 |
|  | Assessment Rate (b.p.) | BIF Ratio | Required Assessment Income (\$) | Assessment Rate (b.p.) | BIF Ratio | Required Assessment Income (\$) |
| 1995   | -16.1                  | 1.26      | -3,913                          | -1.7                   | 1.41      | -425                            |
| 1994   | -17.5                  | 1.42      | -4,360                          | 8.2                    | 1.40      | 2,050                           |
| 1993   | 2.1                    | 1.42      | 492                             | 15.9                   | 1.09      | 3,779                           |
| 1992   | 19.7                   | 0.96      | 4,793                           | 24.9                   | 0.49      | 6,049                           |
| 1991   | 30.3                   | 0.63      | 7,365                           | 29.3                   | 0.14      | 7,122                           |
| 1990   | 39.9                   | 1.04      | 9,484                           | 31.9                   | 0.59      | 7,598                           |
| 1989   | 28.4                   | 1.16      | 6,421                           | 24.4                   | 0.83      | 5,514                           |
| 1988   | 18.3                   | 1.03      | 3,904                           | 16.6                   | 0.75      | 3,527                           |
| 1987   | 17.2                   | 1.21      | 3,499                           | 15.4                   | 0.95      | 3,138                           |
| 1986   | 12.9                   | 1.11      | 2,352                           | 12.4                   | 0.90      | 2,263                           |
| 1985   | 10.7                   | 1.16      | 1,835                           | 9.5                    | 0.95      | 1,638                           |
| 1984   | 8.3                    | 1.14      | 1,324                           | 6.8                    | 0.95      | 1,085                           |
| 1983   | 8.0                    | 1.16      | 1,161                           | 6.2                    | 0.99      | 909                             |
| 1982   | 5.3                    | 1.16      | 700                             | 3.2                    | 1.00      | 420                             |
| 1981   | 1.9                    | 1.21      | 242                             | 1.1                    | 1.08      | 139                             |
| 1980   | 1.2                    | 1.17      | 140                             | 1.3                    | 1.06      | 148                             |
| 1979   | 3.1                    | 1.24      | 327                             | 2.9                    | 1.12      | 309                             |
| 1978   | 2.5                    | 1.18      | 241                             | 2.8                    | 1.07      | 268                             |
| 1977   | 4.2                    | 1.19      | 368                             | 4.3                    | 1.07      | 379                             |
| 1976   | 4.8                    | 1.19      | 393                             | 4.6                    | 1.06      | 374                             |
| 1975   | 4.8                    | 1.20      | 369                             | 4.1                    | 1.07      | 313                             |
| 1974   | 4.6                    | 1.17      | 326                             | 3.8                    | 1.06      | 270                             |
| 1973   | 4.9                    | 1.19      | 313                             | 4.0                    | 1.08      | 254                             |
| 1972   | 5.1                    | 1.20      | 289                             | 4.4                    | 1.10      | 247                             |
| 1971   | 3.9                    | 1.21      | 195                             | 4.2                    | 1.11      | 211                             |
| 1970   | 3.3                    | 1.19      | 145                             | 3.4                    | 1.09      | 151                             |
| 1969   | 4.2                    | 1.22      | 184                             | 3.8                    | 1.11      | 167                             |
| 1968   | 4.6                    | 1.17      | 186                             | 3.9                    | 1.06      | 157                             |
| 1967   | 5.9                    | 1.20      | 216                             | 4.4                    | 1.10      | 159                             |
| 1966   | 4.8                    | 1.20      | 165                             | 3.5                    | 1.11      | 118                             |
| 1965   | 3.8                    | 1.22      | 120                             | 3.2                    | 1.14      | 100                             |
| 1964   | 2.8                    | 1.23      | 81                              | 2.5                    | 1.16      | 70                              |
| 1963   | 2.4                    | 1.24      | 64                              | 1.8                    | 1.18      | 48                              |
| 1962   | 1.9                    | 1.22      | 47                              | 1.8                    | 1.16      | 44                              |
| 1961   | 1.9                    | 1.22      | 42                              | 2.0                    | 1.17      | 46                              |
| 1960   | 2.1                    | 1.24      | 46                              | 1.6                    | 1.19      | 36                              |
| 1959   | 1.6                    | 1.23      | 33                              | 1.2                    | 1.18      | 26                              |
| 1958   | 1.8                    | 1.21      | 37                              | 1.7                    | 1.17      | 34                              |
| 1957   | 2.2                    | 1.25      | 41                              | 1.7                    | 1.20      | 33                              |
| 1956   | 1.7                    | 1.24      | 32                              | 1.5                    | 1.20      | 29                              |
| 1955   | 1.5                    | 1.23      | 28                              | 1.7                    | 1.20      | 31                              |
| 1954   | 2.0                    | 1.24      | 34                              | 3.3                    | 1.20      | 57                              |
| 1953   | 1.7                    | 1.24      | 29                              | 2.7                    | 1.18      | 44                              |
| 1952   | 4.3                    | 1.23      | 67                              | 2.4                    | 1.15      | 38                              |
| 1951   | 4.2                    | 1.20      | 62                              | 2.6                    | 1.15      | 39                              |
| 1950   | 3.2                    | 1.18      | 47                              | 3.2                    | 1.16      | 47                              |
| 1949   | 3.1                    | 1.33      | 46                              | 4.4                    | 1.30      | 66                              |
| 1948   | 1.4                    | 1.27      | 20                              | 3.5                    | 1.22      | 50                              |
| 1947   | 4.0                    | 1.22      | 54                              | 6.2                    | 1.13      | 85                              |
| 1946   | 6.6                    | 1.18      | 85                              | 7.8                    | 1.05      | 100                             |
| 1945   | 11.3                   | 1.17      | 127                             | 8.8                    | 1.00      | 99                              |
| 1944   | 12.4                   | 1.16      | 120                             | 9.2                    | 1.02      | 89                              |
| 1943   | 11.2                   | 1.10      | 94                              | 8.6                    | 1.00      | 73                              |
| 1942   | 11.5                   | 1.34      | 78                              | 8.7                    | 1.26      | 59                              |
| 1941   | 5.9                    | 1.29      | 36                              | 4.5                    | 1.26      | 28                              |
| 1940   | 4.3                    | 1.25      | 24                              | 4.0                    | 1.25      | 22                              |
| Mean   | 6.1                    | 1.19      | 7,261                           | 6.4                    | 1.07      | 888                             |
| Std. Dev   | 8.8                    | 0.11      | 213                             | 7.0                    | 0.20      | 1,809                           |

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requirements that are less extreme and vary less from year to year than the requirements produced by the 1.25 DRR method. For 1991, for example, the two MA methods produce assessment rates of 30.3 and 29.3 basis points respectively, compared with 62.8 points for the DRR method. In terms of volatility, the standard deviation of the assessment rate for the period 1940 – 1995 is reduced from 11.1 basis points for the 1.25 DRR method to 8.8 and 7.0 basis points, respectively, for the four- and six-year MA methods (see tables 3 and 4). In addition, the need for assessment rebates is nearly eliminated without a need to impose a zero-assessment constraint. Rebates are only required in 1994 and 1995 under the four-year MA method, and in 1995 under the six-year MA method.

In general, under the MA approach the BIF reserve ratio would tend to converge on a year-by-year basis around the BIF reserve ratio for the year initially chosen. For example, the BIF ratio in 1940 when our experiment was started was 1.25 percent. Over the years, both the four- and the six-year MA methods resulted in ratios that were close to 1.25 percent. The four-year MA, however, exhibited much closer convergence to the initial 1.25-percent value than the six-year MA. The mean BIF ratios for 1940-1995 were 1.19 percent for the four-year MA and 1.07 for the six-year MA. The variation around the mean for the four-year MA method was also smaller.

As emphasized above, an approach to assessments based on a MA would tend to have a counter-cyclical effect on bank income. From this perspective, if deposit insurance assessment rates were set using a MA method, the current risk-based assessment system would be improved, and the system would be easier for the FDIC to administer. Simply put, as compared with the current 1.25 DRR method, an assessment policy based on a moving average would make the assessment costs to BIF members more predictable from year to year and less of a burden during hard economic times. In

the long run, of course, costs should end up the same under both approaches.

### The Constrained Moving Average

Although the MA approach improves upon the current 1.25 DRR method in several respects, one major problem remains. Like the current 1.25 DRR method, the MA method results in highly variable assessment rates over time, which can create funding uncertainty for banks. This problem can be lessened if the MA approach is modified with an above-zero (positive) minimum constraint on assessment rates. Under this variation, the FDIC would impose the MA assessment rate only when that rate was greater than the predetermined minimum rate. If it was not, then the FDIC would charge the predetermined minimum rate.

We have incorporated a minimum constraint of 3 basis points into the four- and six-year MA formulations. This 3-basis point constraint corresponds closely to the actual minimum effective rate observed in any year during the 1934–1995 period (see table 1). The results, shown in table 5, suggest that the new approach deals effectively with the problem of changing rates—the assessment rate remains constant over long stretches of time.

In about half the years the assessment rate is the 3-basis-point minimum. In addition, the technique of the constrained MA would further reduce the variability in the assessment rate. The assessment rate standard deviations in both the four-year and six-year constrained MA formulations are lower than those of the current 1.25 DRR (no rebate) policy (see tables 3 and 5). However, the constrained MA approaches would neither alleviate problematic high assessment rates, nor mitigate the resultant cyclical problem for the industry. In these regards, the advantages seem to lie decidedly with the two unconstrained MA approaches.



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Table 5

| <b>Constrained Moving-Average Methods—<br/>3 Basis Point Assessment Minimum</b> |                           |           |                           |           |
|---|---------------------------|-----------|---------------------------|-----------|
| Year  | 4-year Moving Average     |           | 6-year Moving Average     |           |
|   | Assessment<br>Rate (b.p.) | BIF Ratio | Assessment<br>Rate (b.p.) | BIF Ratio |
| 1995  | 3.0                       | 1.85      | 3.0                       | 1.53      |
| 1994  | 3.0                       | 1.76      | 7.9                       | 1.46      |
| 1993  | 3.0                       | 1.49      | 15.6                      | 1.15      |
| 1992  | 19.4                      | 1.01      | 24.5                      | 0.55      |
| 1991  | 30.0                      | 0.67      | 28.9                      | 0.19      |
| 1990  | 39.5                      | 1.09      | 31.5                      | 0.65      |
| 1989  | 28.0                      | 1.21      | 23.9                      | 0.89      |
| 1988  | 17.9                      | 1.09      | 16.1                      | 0.82      |
| 1987  | 16.8                      | 1.26      | 14.9                      | 1.02      |
| 1986  | 12.5                      | 1.17      | 11.9                      | 0.97      |
| 1985  | 10.1                      | 1.22      | 8.8                       | 1.02      |
| 1984  | 7.6                       | 1.21      | 6.0                       | 1.03      |
| 1983  | 7.3                       | 1.24      | 5.4                       | 1.08      |
| 1982  | 4.4                       | 1.24      | 3.0                       | 1.10      |
| 1981  | 3.0                       | 1.30      | 3.0                       | 1.18      |
| 1980  | 3.0                       | 1.25      | 3.0                       | 1.14      |
| 1979  | 3.0                       | 1.29      | 3.0                       | 1.17      |
| 1978  | 3.0                       | 1.24      | 3.0                       | 1.12      |
| 1977  | 3.9                       | 1.24      | 4.0                       | 1.12      |
| 1976  | 4.5                       | 1.24      | 4.3                       | 1.12      |
| 1975  | 4.5                       | 1.26      | 3.7                       | 1.14      |
| 1974  | 4.3                       | 1.24      | 3.5                       | 1.13      |
| 1973  | 4.6                       | 1.27      | 3.6                       | 1.16      |
| 1972  | 4.8                       | 1.28      | 4.0                       | 1.18      |
| 1971  | 3.5                       | 1.31      | 3.8                       | 1.21      |
| 1970  | 3.0                       | 1.30      | 3.0                       | 1.19      |
| 1969  | 3.7                       | 1.33      | 3.3                       | 1.22      |
| 1968  | 4.2                       | 1.28      | 3.4                       | 1.18      |
| 1967  | 5.5                       | 1.34      | 3.9                       | 1.24      |
| 1966  | 4.4                       | 1.35      | 3.0                       | 1.27      |
| 1965  | 3.4                       | 1.38      | 3.0                       | 1.32      |
| 1964  | 3.0                       | 1.41      | 3.0                       | 1.35      |
| 1963  | 3.0                       | 1.43      | 3.0                       | 1.36      |
| 1962  | 3.0                       | 1.39      | 3.0                       | 1.33      |
| 1961  | 3.0                       | 1.39      | 3.0                       | 1.32      |
| 1960  | 3.0                       | 1.40      | 3.0                       | 1.33      |
| 1959  | 3.0                       | 1.38      | 3.0                       | 1.31      |
| 1958  | 3.0                       | 1.33      | 3.0                       | 1.26      |
| 1957  | 3.0                       | 1.36      | 3.0                       | 1.28      |
| 1956  | 3.0                       | 1.34      | 3.0                       | 1.26      |
| 1955  | 3.0                       | 1.31      | 3.0                       | 1.24      |
| 1954  | 3.0                       | 1.30      | 3.3                       | 1.22      |
| 1953  | 3.0                       | 1.29      | 3.0                       | 1.20      |
| 1952  | 4.2                       | 1.25      | 3.0                       | 1.17      |
| 1951  | 4.1                       | 1.23      | 3.0                       | 1.16      |
| 1950  | 3.2                       | 1.21      | 3.2                       | 1.16      |
| 1949  | 3.1                       | 1.36      | 4.4                       | 1.30      |
| 1948  | 3.0                       | 1.30      | 3.5                       | 1.22      |
| 1947  | 4.0                       | 1.22      | 6.2                       | 1.13      |
| 1946  | 6.6                       | 1.18      | 7.8                       | 1.05      |
| 1945  | 11.3                      | 1.17      | 8.8                       | 1.00      |
| 1944  | 12.4                      | 1.16      | 9.2                       | 1.02      |
| 1943  | 11.2                      | 1.10      | 8.6                       | 1.00      |
| 1942  | 11.5                      | 1.34      | 8.7                       | 1.26      |
| 1941  | 5.9                       | 1.29      | 4.5                       | 1.26      |
| 1940  | 4.3                       | 1.25      | 4.0                       | 1.25      |
| Mean  | 7.0                       | 1.28      | 6.6                       | 1.14      |
| Std. Dev  | 7.3                       | 0.16      | 6.6                       | 0.21      |

### Conclusions

The current system for setting deposit insurance rates may generate high premiums just when bank earnings are low, and thus raises questions about what level of assessments banks can absorb during a banking downturn. This level has not been established, nor has the question been put to the test since the current system was implemented. In the last banking crisis—that of the 1980s and early 1990s—the law did not require the FDIC to adhere to a pay-as-you-go policy in response to the large insurance losses. Instead Congress approved modest increases in premium rates in 1989 and 1991, the years of greatest stress to the insurance fund. Further changes introduced by FDICIA and DIFA established the current assessment policy, which requires that the BIF and the SAIF reserve ratios be maintained at the DRR and limits the ability of the FDIC to charge assessments if the reserve ratios are at or above the DRR. As a result, current assessment policy requires that deposit insurance assessments be set sufficiently high to cover costs during periods of high bank failures.

We cannot see the future, but we can look at the past. This paper has examined the level and volatility of assessment rates that would have occurred if the current 1.25 DRR policy had been put into effect when the deposit insurance system first began operations in 1934. The analysis, using data on FDIC insurance losses, deposit growth, and interest rates from 1940 through 1995, indicates that a steady 1.25 percent reserve ratio for the BIF would have meant very heavy assessment levies in some years (years when the implied annual levy would have erased almost all bank profits), followed by zero levies as the industry's condition improved. If significant banking industry losses should reappear, such high volatility in assessment requirements is not likely to be acceptable.

This article has advanced an alternative moving-average approach to the current assessment policy. This approach would not maintain the BIF at a predetermined ratio in every year, but would ensure that the BIF ratio would converge around

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the predetermined ratio over the long run. It also avoids the two major weaknesses—high volatility and potentially prohibitive assessment burdens—inherent in the current 1.25 DRR assessment policy. Because this method relies on predetermined formulas instead of behavioral economic assumptions and estimates of future failures, premium set-

ting would lie outside the realm of political influence or industry pressures. And because this method does not burden banks with oppressive premiums when they can least afford them (as the current policy does), the moving-average approach would have a beneficial counter-cyclical effect on the banking industry.

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