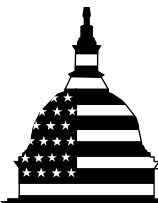


January 2013

FINANCIAL
INSTITUTIONS

Causes and
Consequences of
Recent Bank Failures



G A O

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Why GAO Did This Study

Between January 2008 and December 2011—a period of economic downturn in the United States—414 insured U.S. banks failed. Of these, 85 percent or 353 had less than \$1 billion in assets. These small banks often specialize in small business lending and are associated with local community development and philanthropy. These small bank failures have raised questions about the contributing factors in the states with the most failures, including the possible role of local market conditions and the application of fair value accounting under U.S. accounting standards. As required by Pub. L. No. 112-88, this report discusses (1) the factors that contributed to the bank failures in states with the most failed institutions between 2008 and 2011 and what role, if any, fair value accounting played in these failures, (2) the use of shared loss agreements in resolving troubled banks, and (3) the effect of recent bank failures on local communities. GAO analyzed call report data, reviewed inspectors general reports on individual bank failures, conducted econometric modeling, and interviewed officials from federal and state banking regulators, banking associations, and banks, and market experts. GAO also coordinated with the FDIC Inspector General on its study.

GAO is not making any recommendations at this time. GAO plans to continue to monitor the progress of the ongoing activities of the accounting standardsetters to address concerns with the loan loss provisioning model. The Board of Governors of the Federal Reserve System, the FDIC, and the Office of the Comptroller of the Currency provided technical comments that GAO incorporated as appropriate.

View [GAO-13-71](#). For more information, contact Lawrence Evans Jr., at (202) 512-4802 or Evansl@gao.gov.

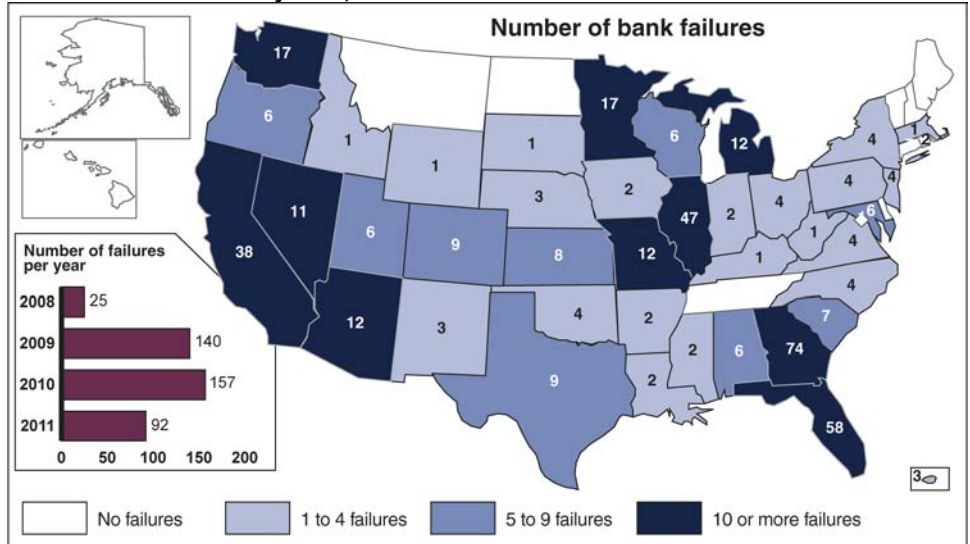
FINANCIAL INSTITUTIONS

Causes and Consequences of Recent Bank Failures

What GAO Found

Ten states concentrated in the western, midwestern, and southeastern United States—all areas where the housing market had experienced strong growth in the prior decade—experienced 10 or more commercial bank or thrift (bank) failures between 2008 and 2011 (see below). The failures of the smaller banks (those with less than \$1 billion in assets) in these states were largely driven by credit losses on commercial real estate (CRE) loans. The failed banks also had often pursued aggressive growth strategies using nontraditional, riskier funding sources and exhibited weak underwriting and credit administration practices. The rapid growth of CRE portfolios led to high concentrations that increased the banks' exposure to the sustained real estate and economic downturn that began in 2007. GAO's econometric model revealed that CRE concentrations and the use of brokered deposits, a funding source carrying higher risk than core deposits, were associated with an increased likelihood of failure for banks across all states during the period. Several state regulatory and community banking

Number of Bank Failures by State, 2008-2011



Source: GAO analysis of FDIC data; Map Resources (map).

association officials told GAO that in some cases, the losses failed banks incurred on their CRE loans were caused by declines in the value of the underlying collateral of impaired, collateral-dependent loans. However, data are not publicly available that indicate the extent to which loan losses were driven by such declines in collateral values. Fair value accounting also has been cited as a potential contributor to bank failures, but between 2007 and 2011 fair value accounting losses in general did not appear to be a major contributor, as over two-thirds of small failed banks' assets were not subject to fair value accounting. The Department of the Treasury and the Financial Stability Forum's Working Group on Loss Provisioning have observed that the current accounting model for estimating credit losses is based on historical loss rates, which were low in the prefinancial crisis years. They said that earlier recognition of loan losses could

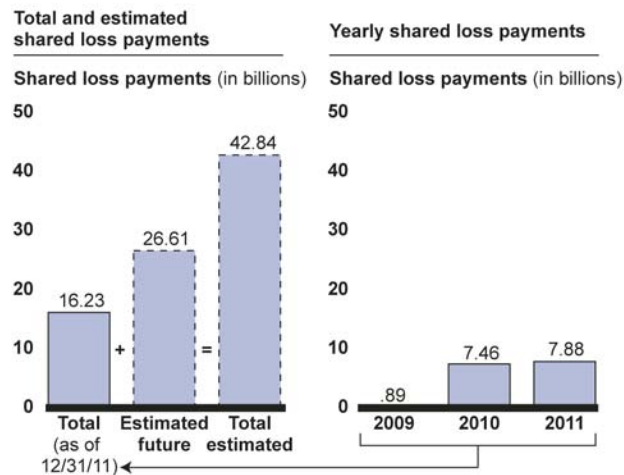
have potentially lessened the impact of the crisis, when banks had to recognize the losses through a sudden series of provisions to the loan loss allowance, thus reducing earnings and regulatory capital. The Financial Accounting Standards Board has issued a proposal for public comment for a loan loss provisioning model that is more forward-looking and focuses on expected losses, which would result in banks establishing earlier recognition of loan losses for the loans they underwrite and could incentivize prudent risk management practices. Moreover, it should help address the cycle of losses and failures that emerged in the recent crisis as banks were forced to increase loan loss allowances and raise capital when they were least able to do so.

The Federal Deposit Insurance Corporation (FDIC) used shared loss agreements to help resolve failed banks at the least cost during the recent financial crisis. Under a shared loss agreement, FDIC absorbs a portion of the loss on specified assets of a failed bank that are purchased by an acquiring bank. FDIC officials, state bank regulators, community banking associations, and acquiring banks of failed institutions GAO interviewed said that shared loss agreements helped to attract potential bidders for failed banks during the financial crisis. Bank officials that acquired failed banks confirmed that they would not have purchased them without FDIC's shared loss agreements because of uncertainty of the market and valuation of assets. FDIC said the benefits of shared loss agreements included reductions in its immediate cash needs, less disruption to failed bank customers, and the movement of assets quickly into the private sector. During 2008-2011, FDIC resolved 281 of 414 failures using shared loss agreements on assets purchased by the acquiring bank. As of December 31, 2011, Deposit Insurance Fund (DIF) receiverships made shared loss payments totaling \$16.2 billion. In addition,

DIF receiverships are estimated to pay an additional \$26.6 billion over the duration of the shared loss agreements, resulting in total estimated lifetime losses of \$42.8 billion (see figure). By comparing the estimated cost of the shared loss agreements to the estimated cost of directly liquidating the failed banks' assets, FDIC estimates that the use of shared loss agreements saved the DIF over \$40 billion. While total estimated lifetime losses of the shared loss agreements may not change, the timing of the losses may change and payments from shared loss agreements may increase as the terms of the agreements mature. FDIC officials stated that the acquiring banks are monitored for compliance with the terms and conditions of the shared loss agreements. FDIC is issuing guidance to the acquiring banks reminding them of these terms to prevent increased shared loss payments as these agreements approach maturity.

The acquisitions of failed banks by healthy banks appears to have mitigated the potentially negative effects of bank failures on communities, although the focus of local lending and philanthropy may have shifted. First, while bank failures and failed bank acquisitions can have an impact on market concentration—an indicator of the extent to which banks in the market can exercise market power, such as raising prices or reducing availability of some products and services—GAO found only a limited number of metropolitan areas and rural counties were likely to have become significantly more concentrated. The lack of increases in concentration was because in many instances, the failed banks were acquired by out-of-market institutions. Second, GAO's econometric analysis of call report data from 2006 through 2011 found that failing small banks extended progressively less net credit as they approached failure, and that acquiring banks generally increased net credit after the acquisition. However, acquiring bank and existing peer bank officials GAO interviewed noted that in the wake of the bank failures, underwriting standards had tightened and thus credit was generally more available for small business owners who had good credit histories and strong financials than those that did not. Third, officials from regulators, banking associations, and banks GAO spoke with said that involvement in local philanthropy declined as small banks approached failure but generally increased after acquisition. Yet, these acquiring banks may not focus on the same philanthropic activities as did the failed banks. Finally, GAO econometrically analyzed the relationships among bank failures, income, unemployment, and real estate prices for all states and the District of Columbia (states) for the 1994 through 2011 period and found that bank failures in a state were more likely to affect its real estate sector than its labor market or broader economy.

Estimated Lifetime Losses and Yearly Shared Loss Payments, 2008-2011



Source: GAO analysis of FDIC data.

Contents

Letter		1
	Background	6
	Bank Failures Were Largely Related to Nonperforming Real Estate Loans but Also Highlight Impact of Impairment Accounting and Loan Loss Provisioning	17
	FDIC Used Shared Loss Agreements to Attract Bidders at Least Cost to the Deposit Insurance Fund	39
	Impact of Bank Failures on Local Communities Was Mixed	43
	Agency Comments	55
Appendix I	Objectives, Scope and Methodology	57
Appendix II	FDIC Resolution Methods for Failed Institutions and the Least Cost Test Process	65
Appendix III	GAO Analysis of Bank Characteristics and the Likelihood of Failure	69
Appendix IV	Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures	73
Appendix V	Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures	103
Appendix VI	Analysis of HFI Loans Compared to HFS Loans of Large Banks	133
Appendix VII	GAO Analysis of Net Credit Extended by Failing Banks and Acquiring Banks	139

Appendix VIII	GAO Analysis of the Effect of Bank Failures on State Economic Conditions	144
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Appendix IX	GAO Contacts and Staff Acknowledgments	148
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Tables

Table 1: Bank Failures in States with 10 or More Failures by Asset Size, 2008-2011	8
Table 2: Numbers, Asset Size, and Percentage of Banks and Failed Banks in the 10 States by Size, as of 2007Q4 and 2008-2011	11
Table 3: Impact of Bank Failures and Failed Bank Acquisitions on Market Concentration, 2007-2012	47
Table 4: Summary of Relationships among Bank Failures, Personal Income, Unemployment, and Real Estate Prices in U.S. States, 1994-2011	55
Table 5: Bank Characteristics Associated with the Likelihood of Failure, 2008-2011	71
Table 6: HFI Loans as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	76
Table 7: Trading Assets as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	77
Table 8: Nontrading Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	78
Table 9: Nonfinancial Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	79
Table 10: Trading Liabilities Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	80
Table 11: HTM Securities as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	81
Table 12: AFS Securities as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	82
Table 13: HFS Loans as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	83
Table 14: OREO Assets as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011	84

Table 15: YTD and Accumulated OCI as a Percentage of Equity Capital	102
Table 16: HFI Loans as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	106
Table 17: Trading Assets as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	107
Table 18: Nontrading Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	108
Table 19: Nonfinancial Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	109
Table 20: Liabilities Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	109
Table 21: HTM Securities as a Percentage of Total Assets for Failed Thrifts, 2007-2011	110
Table 22: AFS Securities as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	111
Table 23: HFS Loans as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	112
Table 24: OREO Assets as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011	113
Table 25: Estimated Effect of Bank Characteristics on Net Credit, 2006-2011	140
Table 26: Estimated Net Credit Extended by Failing, Acquiring, and Nonfailing, Nonacquiring Banks, 2008-2011	142
Table 27: Granger Causality Tests for Personal Income, Unemployment, House Price, and Failed Bank Deposit Equations, 1994-2011	146

Figures

Figure 1: Number of Bank Failures by State, 2008-2011	7
Figure 2: Quarterly Average CRE and ADC Loan Balances as a Percentage of Total Loan Balances at Failed and Open Small Banks in the 10 States, 2001-2011	19
Figure 3: Credit Losses as a Percentage of Net Interest Income for Small Failed Commercial Banks and Small Open Commercial Banks in All States, 2008-2011	29
Figure 4: FDIC's Resolution Methods, 2008-2011	40
Figure 5: Shared Loss Agreements Entered into by Year, 2008-2011	42

Figure 6: Estimated Lifetime Losses and Yearly Shared Loss Payments, 2008-2011	43
Figure 7: Estimated Net Credit Extended by Failing, Acquiring, and Nonfailing, Nonacquiring Banks, 2008-2011	50
Figure 8: FDIC's Least Cost Test Process	66
Figure 9: Nonperforming Loans as a Percentage of Total Loans for Small Failed and Open Commercial Banks, 2007-2011	85
Figure 10: Income Categories as a Percentage of Net Interest Income for Small Failed Commercial Banks, 2007-2011	86
Figure 11: Income Categories as Percentage of Net Interest Income for Small Open Commercial Banks, 2008-2011	88
Figure 12: Nonperforming Loans as a Percentage of Total Loans for Medium-Size Commercial Banks, 2007-2011	89
Figure 13: Income Categories as a Percentage of Net Interest Income for Medium-size Failed Commercial Banks, 2007-2011	90
Figure 14: Income Categories as a Percentage of Net Interest Income for Open Medium-size Banks, 2008-2011	91
Figure 15: Nonperforming Loans as a Percentage of Total Loans for Large Failed Commercial Banks, 2007-2011	92
Figure 16: Income Categories as a Percentage of Net Interest Income for United Commercial Bank, 2007-2009	93
Figure 17: Income Categories as a Percentage of Net Interest Income for Colonial National Bank, 2007-2009	95
Figure 18: Income Categories as a Percentage of Net Interest Income for Westernbank, 2007-2010	97
Figure 19: OTTI Losses on HTM and AFS Debt Securities as a Percentage of Net Interest Income for Failed Banks	99
Figure 20: Goodwill and Other Intangible Expenses as a Percentage of Equity Capital (Failed Banks), 2007-2011	100
Figure 21: Goodwill and Other Intangible Expenses as a Percentage of Equity Capital (Open Banks), 2008-2011	101
Figure 22: Nonperforming Loans as a Percentage of Total Loans for Small Failed Thrifts, 2007-2011	114
Figure 23: Income Categories as a Percentage of Net Interest Income for Small Failed Thrifts, 2007-2011	115
Figure 24: Income Categories as a Percentage of Net Interest Income for Small Open Thrifts, 2007-2011	116
Figure 25: Nonperforming Loans as a Percent of Total Loans for Medium-Size Failed Thrifts, 2007-2011	117
Figure 26: Income Categories as a Percentage of Net Interest Income for Medium-size Failed Thrifts, 2007-2011	118

Figure 27: Income Categories as a Percentage of Net Interest Income for Medium-Size Open Thrifts, 2007-2011	119
Figure 28: Nonperforming Loans as a Percent age of Total Loans for Large Failed Thrifts, 2007-2009	120
Figure 29: Income Categories as a Percentage of Net Interest Income for Large Failed Thrifts, 2007-2009	121
Figure 30: Income Categories as a Percentage of Net Interest Income for Large Open Thrifts, 2007-2011	122
Figure 31: IndyMac Income Categories as a Percentage of Net Interest Income, 2007-2008	124
Figure 32: Downey Income Categories as a Percent of Net Interest Income, 2007-2008	125
Figure 33: Washington Mutual Income Categories as a Percentage of Net Interest Income, 2007-2008	127
Figure 34: AmTrust Income Categories as a Percentage of Net Interest Income, 2007-2009	128
Figure 35: BankUnited Income Categories as a Percentage of Net Interest Income, 2007-2009	130
Figure 36: Guaranty Income Categories as a Percentage of Net Interest Income, 2007-2009	131
Figure 37: Amtrust Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets	134
Figure 38: IndyMac Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets	135
Figure 39: WaMu Volume of HFI Loans Compared to HFS Loans as a Percent age of Total Assets	136
Figure 40: Downey Volume of HFI Loans compared to HFS Loans as a Percentage of Total Assets	137
Figure 41: UCB Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets	138

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United States Government Accountability Office
Washington, DC 20548

January 3, 2013

The Honorable Tim Johnson
Chairman
The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable Spencer Bachus
Chairman
The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives

Between January 2008 and December 2011, 414 insured U.S. commercial banks and thrifts (banks) failed.¹ Of these, 85 percent (353), were small banks with less than \$1 billion in assets. These small banks tend to be community banks that are depository institutions, with a relatively limited geographic scope of operations and often specialize in, among other things, providing credit to local small businesses. Community banks are also associated with local community development, leadership, and philanthropy.

These bank failures, which were concentrated in certain parts of the United States and occurred against the backdrop of the worst financial crisis since the Great Depression, raised a number of concerns. First, the number and proportion of failed banks varied across states, prompting questions about the role local market conditions and related economic factors played, particularly in those areas with the largest numbers of failures. Further, in an era of declining asset values and rising mortgage delinquencies, concerns have also been raised that the failures may have been due to losses recognized from the application of fair value

¹In this report, we refer to both these types of financial institutions as banks unless otherwise indicated. Commercial banks accept deposits, make business loans, and offer related services. They serve individuals but focus primarily on servicing and making loans to businesses. Thrifts accept deposits and make loans, particularly for home mortgages. No banks failed in 2005 or 2006, and only three failed in 2007.

accounting under U.S. generally accepted accounting principles (GAAP).² According to its critics, fair value accounting may have contributed to some bank failures by requiring the reduction of the book value of assets (write-downs) such as investments in mortgage-backed securities to abnormally low market prices, lowering earnings and depleting the banks' regulatory capital.³ These critics thought that the write-downs were based on values in inactive or illiquid markets and did not specifically reflect the underlying value of the assets.⁴ Moreover, they maintain that the write-downs created a procyclical effect in that they caused banks to sell assets in an attempt to boost regulatory capital, putting further downward pressure on market prices and triggering further write downs and depletion of capital. The large number of small bank failures has also raised concerns about the potential effect on the communities where the banks were located, particularly in terms of credit availability, income and employment, and philanthropic activity.

The Federal Deposit Insurance Corporation (FDIC) is required to resolve a bank failure in a manner that results in the least cost to the Deposit Insurance Fund (DIF).⁵ The DIF is funded by assessments levied on insured banks and savings associations and is used to cover all deposit accounts at insured institutions, such as checking and savings accounts, up to the insurance limit. FDIC resolved most bank failures during 2008 through 2011 by facilitating their acquisitions by other banks and often by including a shared loss agreement, under which FDIC absorbed a portion of the loss on specified assets purchased by the acquiring bank.

In light of the questions raised about the recent failures, particularly those of small banks, and the potential costs to the DIF, Congress has required

²Fair value accounting is a financial reporting approach that requires or permits financial institutions to measure and report on an ongoing basis certain financial assets and liabilities at the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

³Regulatory capital can be measured as total capital or tier 1 capital. Total capital consists of the sum of tier 1 and tier 2 capital. Tier 1 capital consists primarily of equity capital and retained earnings (the profits a bank has earned but has not paid out to shareholders in the form of dividends). Tier 2 capital includes subordinated debt, a portion of loan loss allowances, and certain other instruments.

⁴An inactive or illiquid market is one in which observable inputs such as quoted prices are not available due to infrequent transactions.

⁵12 U.S.C. § 1823(c)(4).

us to conduct a study of recent bank failures in states with 10 or more failures.⁶ Accordingly, the objectives of our report are to discuss

(1) the factors that contributed to the failure of banks in states with 10 or more failures between 2008 and 2011, including the extent to which losses related to fair value accounting treatment affected the regulatory capital positions of failed banks;

(2) market factors that affected FDIC's choice of resolution method, or the amount of FDIC coverage offered on the shared loss agreements, and the costs that the DIF incurred as a result of these shared loss agreements; and

(3) the effect of recent small bank failures on local communities.

To address the factors that contributed to the recent bank failures, we analyzed data from FDIC's Historical Statistics on Banking—Failures and Assistance Transactions database, and Statistics on Depository Institutions as well as call report and thrift financial report data. In doing so, we reviewed information from FDIC on the policies and procedures it used to ensure that the data were complete and accurate and determined them to be reliable for our purposes. We reviewed material loss reviews (MLRs), failed bank reviews (FBR), and in-depth reviews (IDR) issued by the inspectors general (IG) of the federal banking regulators and estimated an econometric model to investigate bank characteristics that

⁶Pub. L. No. 112-88, § 3, 125 Stat. 1899, 1902 (2012). As part of this act, the FDIC Inspector General (IG) must also conduct a separate study on the impact of bank failures.

may have contributed to failure.⁷ In addition, we analyzed call reports and thrift financial report data for failed and open commercial banks and thrifts to identify and compare trends in the use of fair value accounting. We also interviewed officials from federal banking regulators, state banking regulators, national and state banking organizations, and market experts and had two accounting experts, a former comptroller general and a professor of accountancy, review a draft of the report. To identify the costs the DIF has incurred to date under shared loss agreements, we obtained and analyzed FDIC loss payment information and the estimate of lifetime losses that FDIC develops for each failed institution. We determined that these estimates were sufficiently reliable. Also, we interviewed FDIC officials and reviewed and summarized FDIC policies and procedures for determining that shared loss agreements were the least costly method for resolving bank failures compared to other available resolution methods during this time period. We interviewed federal and state banking regulators, national and state banking associations, and market experts. We also conducted a cluster sampling of 10 failed small banks in three states and interviewed officials from acquiring and peer banks of these failed banks.

To address the effect of small bank failures on local communities, we estimated the change in market concentration from bank failures and

⁷Section 38(k) of the Federal Deposit Insurance Act (FDI Act) requires that the inspector general of the appropriate federal banking agency complete an MLR of the agency's supervision of a failed institution when the projected loss to the DIF is material to, among other things, ascertain why the institution's problems resulted in a material loss to the DIF. 12 U.S.C. § 1831o(k). Prior to the enactment of the Dodd-Frank Wall Street and Consumer Protection Act (Dodd-Frank Act) on July 21, 2010, the FDI Act defined a material loss to the DIF as the greater of \$25 million or 2 percent of the institution's total assets. The Dodd-Frank Act amended the FDI Act to define a material loss to the DIF for the period January 1, 2010, to December 31, 2011, as an estimated loss in excess of \$200 million; for the period January 1, 2012, to December 31, 2013, as an estimated loss in excess of \$150 million; and on or after January 1, 2014, as an estimated loss in excess of \$50 million. Pub. L. No. 111-203, § 987. The Dodd-Frank Act also created new reporting requirements—the failed bank review, or FBR—for failures that resulted in losses below the “material loss” threshold. The Inspector General, every six months, shall conduct FBRs to determine the grounds identified by the federal banking agency or state bank supervisor for appointing FDIC as receiver, and whether any “unusual circumstances” exist that might warrant an IDR of the loss. If an in-depth review is warranted, the Inspector General must prepare the IDR consistent with the requirements of an MLR.

acquisitions of failed banks using data from 2007 through 2012.⁸ We measured market concentration using the Herfindahl-Hirschman Index (HHI), which is equal to the sum of the squared market shares of banks in a market.⁹ We analyzed the impact of bank failures on the availability of credit using 2006 through 2011 call report data to estimate changes in the size of a bank's loan portfolio in the quarters leading up to failure for failed banks and in the quarters following acquisition of a failed bank (for acquiring banks).¹⁰ We conducted an econometric modeling exercise designed to assess the relationship between bank failures and overall economic conditions in a state. Specifically we analyzed the relationship between bank failures, income, unemployment, and real estate prices for U.S. states and the District of Columbia, using data from 1994 through 2011.¹¹ We interviewed federal and state banking regulators, national and state community banking organizations, market experts and officials from acquiring banks and peer banks of the failed banks that were part of our cluster sample. Appendix I provides a more detailed description of our scope and methodology.

We conducted this performance audit from February 2012 to December 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to

⁸Market concentration is an indicator of the extent to which firms in a market can exercise power by raising prices, reducing output, diminishing innovation, or otherwise harming customers as a result of reduced competitiveness. A key variable used in this analysis, deposits in bank branches, is available annually as of June 30 of each year, so we used observations for 12-month periods starting on June 30 of each year from 2007 through 2011 to cover the period from 2008 to 2011. Data on bank failures for the first half of 2012 are used to create observations on the 12-month period beginning on June 30, 2011.

⁹The HHI is one of the measures of market concentration that government agencies, including Department of Justice (DOJ) and Federal Trade Commission (FTC), use to enforce U.S. antitrust laws. DOJ and FTC often calculate the HHI as the first step in providing insight into potentially anticompetitive conditions in an industry. However, the HHI is a function of firms' market shares, and market shares may not fully reflect the competitive significance of firms in the market. Thus, DOJ and FTC use the HHI in combination with other evidence of competitive effects when evaluating market concentration.

¹⁰We used data for 2006 through 2011 to analyze data on banks that failed in 2008 through 2011 up to 8 quarters prior to their failures.

¹¹We used data for the longest time period for which data on personal income, unemployment, real estate prices, and deposits in failed banks for U.S. states and the District of Columbia are all available.

obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives.

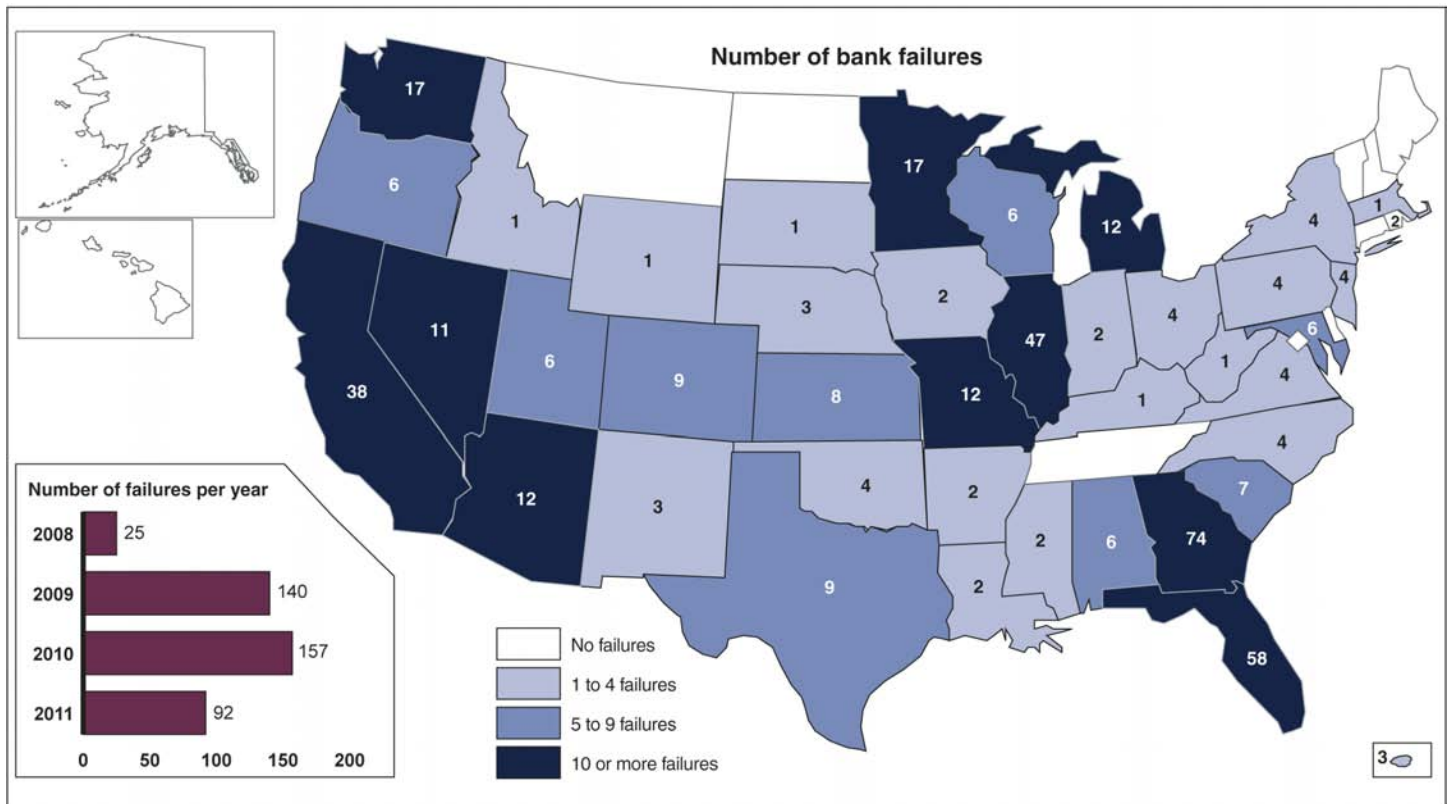
Background

A bank failure is the closing of a bank by a federal or state banking regulatory agency. One indicator of a bank's health is its relative level of regulatory capital, which cushions banks against losses from nonpayment of loans and other losses on assets. Regulators require banks to maintain certain minimum capital requirements to help ensure the safety and soundness of the banking system and generally expect banks to hold capital above these minimums at levels commensurate with their risks. Federal law generally requires federal banking regulators to close a bank that has become critically undercapitalized within a 90-day period.¹²

As figure 1 shows, 10 states experienced 10 or more bank failures between 2008 through 2011: Arizona, California, Florida, Georgia, Illinois, Michigan, Minnesota, Missouri, Nevada, and Washington, with the most failures occurring in California, Florida, Georgia, and Illinois. Together, failures in these 10 states comprised 298 of the 414 bank failures (72 percent) across all states during this time period.

¹²Section 38 of the FDI Act requires federal banking regulators to classify banks into one of five capital categories and take increasingly severe actions, known as prompt corrective action, as a bank's capital level deteriorates. 12 U.S.C. § 1831o. A bank is declared critically undercapitalized if its tangible equity is equal to or less than 2 percent of its total assets. Tangible equity is equal to the amount of Tier 1 capital plus outstanding cumulative perpetual preferred stock minus all intangible assets not previously deducted, except certain purchased mortgage-servicing rights.

Figure 1: Number of Bank Failures by State, 2008-2011



Source: GAO analysis of FDIC data; Map Resources (map).

Within these 10 states, 86 percent (257) of the failed banks were small institutions with assets of less than \$1 billion at the time of failure, and 52 percent (155), had assets of less than \$250 million (see table 1). Twelve percent (36) were of medium-size banks with more than \$1 billion but less than \$10 billion in assets, and 2 percent (5) were large banks with assets of more than \$10 billion at the time of failure.

Table 1: Bank Failures in States with 10 or More Failures by Asset Size, 2008-2011

State	Small banks (less than \$1 billion)	Medium-size banks (more than \$1 billion but less than \$10 billion)	Large banks (more than \$10 billion)	Total
Arizona	12	0	0	12
California	21	14	3	38
Florida	53	4	1	58
Georgia	69	5	0	74
Illinois	40	7	0	47
Michigan	11	1	0	12
Minnesota	17	0	0	17
Missouri	12	0	0	12
Nevada	7	3	1	11
Washington	15	2	0	17
Total	257	36	5	298

Source: GAO analysis of FDIC data.

Small Banks and Community Lending

Small banks—those with less than \$1 billion in assets—tend to differ from larger banks in their relationships with customers. Large banks are more likely to engage in what is called transactional banking, which focuses on the provision of highly standardized products that require little human input to manage and are underwritten using “hard” statistical information. Small banks are more likely to engage in what is known as relationship banking, which involves more one-on-one interaction with customers. In relationship banking, banks consider not only hard information in the underwriting process, but also “soft” information that is not readily available or quantifiable and is acquired primarily by working with the banking customer. Using this banking model, small banks may be able to extend credit to customers such as small business owners who might not be considered for a loan from a larger bank.¹³

¹³Although no commonly accepted definition of a community bank exists, the term often is associated with smaller banks (e.g., under \$1 billion in assets) that provide relationship banking services to the local community. For the purposes of this report, we use the term “small” banks and “community” banks interchangeably.

As we have previously reported, small banks tend to have a larger portion of small business loans in their portfolios than larger banks.¹⁴ The Board of Governors of the Federal Reserve System (Federal Reserve) reported that in 2011, banks with assets of \$250 million or less accounted for 66.8 percent of all banking organizations but only 4.0 percent of all banking assets. Moreover, they held 13.7 percent of all small business loans (business loans equal to or less than \$1 million) and 13.9 percent of business microloans (business loans equal to or less than \$100,000).¹⁵ In part because of competitive pressures, small banks have increasingly moved toward providing commercial real estate (CRE) loans rather than other types of credit. During the last decade, large banks and other financial institutions increased their market share for consumer loans, credit cards, and residential mortgages. Over the same period, small banks shifted their focus to CRE lending, an area in which they had a competitive advantage, according to market observers. Market observers have noted that small banks generally know their local CRE markets better than larger banks and are well positioned to gather specific information on properties.

Regulators define CRE loans to include acquisition, development, and construction (ADC) loans that are secured by real estate to finance land development and construction, including new construction, upgrades, and rehabilitation. CRE loans also include unsecured loans to finance commercial real estate, loans secured by multifamily properties, and loans secured by nonfarm nonresidential property. ADC loans generally are considered to be the riskiest class of CRE loans due to their long development times and because they can include properties (such as housing developments or retail space in a shopping mall) that are built before having firm commitments from buyers or lessees. In addition, by the time the construction phase is completed, market demand may have fallen, putting downward pressure on sales prices or rents, making this type of loan more volatile.

¹⁴See GAO, *Troubled Asset Relief Program: Status of Programs and Implementation of GAO recommendations*, [GAO-11-74](#) (Washington, D.C.: Jan. 12, 2011).

¹⁵Board of Governors of the Federal Reserve System, *Report to Congress on the Availability of Credit to Small Businesses*, (Sept. 2012). In addition, our analysis indicates that between 2007 and 2011, banks with assets of about \$1 billion or more made an average of 85-90 percent of their small business loans in markets where they had branches, and at least 95 percent of banks with assets of \$1 billion or more made at least half of their small business loans in markets where they had branches.

Financial crisis (2007-2011)

The dramatic decline in the U.S. housing market that began in 2006 precipitated a decline in the price of mortgage-related assets, particularly mortgage assets based on nonprime loans in 2007. Some financial institutions found themselves so exposed that they were threatened with failure, and some failed because they were unable to raise capital or obtain liquidity as the value of their portfolios declined. Other institutions, ranging from government-sponsored enterprises such as Fannie Mae and Freddie Mac to large securities firms, were left holding “toxic” mortgages or mortgage-related assets that became increasingly difficult to value, were illiquid, and potentially had little worth. Moreover, investors not only stopped buying private-label securities backed by mortgages but also became reluctant to buy securities backed by other types of assets. Because of uncertainty about the liquidity and solvency of financial entities, the prices banks charged each other for funds rose dramatically, and interbank lending conditions deteriorated sharply. The resulting liquidity and credit crunch made the financing on which businesses and individuals depend increasingly difficult to obtain. By late summer of 2008, the ramifications of the financial crisis ranged from the continued failure of financial institutions to increased losses of individual wealth and reduced corporate investments and further tightening of credit that would exacerbate the emerging global economic slowdown.

Bank Regulators

Federal banking regulators—FDIC, Federal Reserve, and the Office of the Comptroller of the Currency (OCC)—are responsible for supervising the activities of banks. They are also responsible for taking corrective action when the banks’ activities and overall performance present supervisory concerns or could result in financial losses to the DIF or violations of law or regulation.¹⁶ The Federal Reserve is the primary regulator for state-chartered member banks (banks authorized to do business under charters issued by states) that are members of the Federal Reserve System and for bank and thrift holding companies. OCC is the primary regulator of national banks and federal thrifts, and FDIC is the primary regulator for state-chartered nonmember banks (i.e., state-

¹⁶Until 1989, thrift deposits were federally insured by the Federal Savings and Loan Insurance Corporation (FSLIC), which was created by the National Housing Act, 48 Stat. 1246 (1934). After experiencing solvency problems in connection with the savings and loan crisis of the 1980s, FSLIC was abolished and its insurance function was transferred to FDIC by the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, Pub. L. No. 101-73, § 401, 103 Stat. 183 (1989).

chartered banks that are not members of the Federal Reserve System) and state-chartered thrifts.¹⁷ In addition, FDIC insures the deposits of all federally insured banks, generally up to \$250,000 per depositor, per insured bank. Prior to July 21, 2011, the Office of Thrift Supervision (OTS) was the primary regulator of federally and state-chartered thrifts and thrift holding companies.¹⁸ State-chartered banks are also subject to the supervision of their respective state banking regulators.

Table 2 shows the number of banks under federal supervision as of December 31, 2007, prior to the wave of bank failures, and their related level of assets. The vast majority of the 8,544 banks under supervision at that time were small banks (7,870 or 92 percent) whose assets comprised 11 percent of the total \$13 trillion in assets under supervision. Of the 7,870 small banks under supervision as of December 31, 2007, 62 percent were supervised by FDIC, 18 percent by OCC, 10 percent by the Federal Reserve, and 9 percent by OTS. During this time period, about 3.6 percent of small banks in the 10 states that were supervised by FDIC failed, followed by 3.2 percent that were supervised by the Federal Reserve, and 2.5 percent supervised by OCC and OTS.

Table 2: Numbers, Asset Size, and Percentage of Banks and Failed Banks in the 10 States by Size, as of 2007Q4 and 2008-2011

		Federal Reserve		FDIC		OCC		OTS		Total	
Number of supervised banks as of 2007Q4 (assets in billions)	All banks	878	\$1,518.20	5,205	\$2,195.13	1,635	\$7,785.23	826	\$1,551.97	8,544	\$13,050.54
	Small banks	789	\$171.92	4,909	\$871.89	1,455	\$293.47	717	\$155.37	7,870	\$1,492.65

¹⁷The responsibilities of the Federal Reserve include supervising and regulating banks and other important financial institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers.

¹⁸The Dodd-Frank Act eliminated OTS. Supervisory authority previously vested in OTS was transferred to the OCC for federal savings associations, to FDIC for state savings associations, and to the Federal Reserve for thrift holding companies and their subsidiaries, other than depository institutions. The transfer of these powers was completed on July 21, 2011, and OTS was officially dissolved 90 days later (Oct. 19, 2011).

		Federal Reserve		FDIC		OCC		OTS		Total	
Number of supervised banks that failed between 2008-2011 in the 10 states (assets in billions)	All banks	29	\$18.57	196	\$87.54	46	\$49.16	27	\$384.74	298	\$540.01
	Small banks	25	\$9.68	178	\$47.18	36	\$8.11	18	\$4.13	257	\$69.10
Percent of supervised banks in 2007Q4 that failed between 2008-2010 in the 10 states (assets in billions)	All banks	3.3%	1.2%	3.8%	4.0%	2.8%	0.6%	3.3%	24.8%	3.5%	4.1%
	Small banks	3.2%	5.6%	3.6%	5.4%	2.5%	2.8%	2.5%	2.7%	3.3%	4.6%

Source: GAO analysis of FDIC data.

Note: Small banks are defined as banks with asset under \$1 billion.

FDIC acts as the receiver of failed banks and is charged with evaluating various resolution strategies in order to facilitate the sale of assets belonging to failed depository institutions. The 1991 Federal Deposit Insurance Corporation Improvement Act (FDICIA) requires FDIC to resolve failed institutions using the least costly method to the DIF, or the least-cost transaction.¹⁹ Congress enacted FDICIA in response to the savings and loan crisis, and the law contained a number of reforms, including some designed to address criticisms that federal regulators had not taken prompt and forceful actions to minimize or prevent losses to the deposit insurance funds caused by bank failures.

FDIC Resolution Methods for Failed Institutions

FDIC is required to resolve failed institutions using the least costly method to the DIF, and FDIC evaluates various resolution strategies to identify the least costly method. FDIC primarily uses two methods to resolve failing banks and thrifts: purchase and assumption (P&A) transactions (the direct sale of a failed bank to another, healthier bank) and deposit payoffs. A P&A transaction is a resolution in which an acquiring institution purchases some or all of the assets of a failed bank

¹⁹Pub. L. No. 102-242, § 141, 105 Stat. 2236, 2273 (1991), codified at 12 U.S.C. § 1823(c)(4).

or thrift and assumes some or all of the liabilities, including all insured deposits. Some P&As include a shared loss agreement in which FDIC absorbs a portion of the loss on a specified pool of assets (such as loans), which helps maximize asset recoveries and minimize FDIC losses. FDIC executes a deposit payoff only if it does not receive a bid for a P&A transaction that meets the least cost test—the process by which FDIC selects the least costly option to the DIF. There are three types of deposit payoffs. The first is a straight deposit payoff, in which FDIC pays deposited amounts due up to the insured limits. The second type is an insured deposit transfer, which allows FDIC to transfer the insured deposits to a healthy institution to limit service interruptions for insured depositors. The third type is the creation of a new depository institution in the same community of the failed bank in order to conduct an orderly liquidation of the insured deposits, also referred to as a deposit insurance national bank (DINB).²⁰

Fair Value, Historical Cost, and Impairment Accounting

GAAP establishes the basis on which items reported on a bank's balance sheet should be measured. Currently, assets and liabilities are reflected in the balance sheet at fair value, historical cost, or another basis, such as lower-of-cost or fair value.

- Fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value accounting standards under GAAP establish a standardized framework for

²⁰See appendix II for more information on FDIC's resolution methods for failed institutions and its least cost test process.

measuring the fair value of an asset or liability.²¹ According to the Securities and Exchange Commission, fair value is most prevalently used to measure “financial” assets and liabilities, such as investment securities and derivative instruments. Fair value measurements that are required on a quarterly basis (or each reporting period) are often referred to as “recurring.” For some assets and liabilities that are measured at fair value on a recurring basis, such as securities designated for trading, unrealized gains or losses flow through the bank’s earnings in the income statement and affect regulatory capital. For certain other assets and liabilities that are measured at fair value on a recurring basis, such as securities designated as available for sale, unrealized fair value gains and losses generally do not impact earnings, and thus, generally are not included in regulatory capital calculations. Instead, these gains or losses are recorded through other comprehensive income (OCI), unless the institution determines that a decline in fair value below amortized cost constitutes an other-than-temporary impairment (OTTI) in which case the instrument is written down to its fair value, with credit losses reflected in earnings.²²

- Historical cost. Measurement using historical cost can be done in several ways, but the general concept is to record items on the

²¹In 2006, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 157, *Fair Value Measurements*, which defined fair value, established a framework for measuring fair value under GAAP, and required expanded disclosures about fair value measurements. SFAS No. 157 became effective for an entity’s first fiscal year beginning after November 15, 2007. Prior to its issuance, fair value measurement principles were not consistently defined and codified in a single accounting standard, which led to the potential for disparate fair value measurement practices under different accounting standards. SFAS No. 157 was intended to provide a single set of measurement principles to be uniformly applied for fair value measurement when GAAP requires or permits reporting entities to measure or disclose the fair value of an asset or liability. However, SFAS No. 157 did not change which assets and liabilities are subject to fair value accounting or when fair value should be applied, as other previously existing accounting standards provide the requirement or permission to measure assets and liabilities at fair value. SFAS 157 was subsequently codified as Accounting Standards Council (ASC) 820 and amended, and additional staff guidance was issued on the application of fair value accounting.

²²OCI refers to revenues, expenses, gains, and losses that are included in comprehensive income but excluded from net income. Comprehensive income is the total non-owner change in equity for a reporting period. An other-than-temporarily impaired instrument is one whose fair value has fallen below its amortized cost and its value is not expected to recover to its amortized cost through the holding period. As a result of an April 2009 change to the relevant GAAP standard, an OTTI of either a debt security classified as available-for-sale or held-to-maturity in certain circumstances is separated into the (1) credit loss amount recognized in earnings and (2) the amount related to all other factors (non-credit loss) recognized in OCI, net of applicable taxes.

balance sheet using the original amount paid or received, with adjustments when appropriate in subsequent periods for depreciation, amortization, principal pay downs, or impairment. Generally, loans that a bank holds for investment (HFI), for example, are recorded at amortized cost, net of an impairment allowance for estimated credit losses.²³ Such loans typically comprise the bulk of assets held by FDIC-insured banks.

- Loan impairment accounting: GAAP requires financial institutions to maintain an allowance for loan losses (loan loss allowance) at a level that is appropriate to cover estimated credit losses incurred as of the balance sheet date for their entire portfolio of HFI loans. Under GAAP, institutions must recognize impairment on HFI loans when credit losses are determined to be probable and reasonably estimable, that is, when, based on current information and events, it is probable that an institution will be unable to collect all amounts due (i.e., both principal and interest) according to the contractual terms of the original loan agreement. An increase in the loan loss allowance results in a charge to expenses, termed a provision for loan losses (loan loss provision), except in the case where there are recoveries of amounts previously charged off. Loan loss provisions reduce the net interest income earned as part of a bank's earnings, and regulatory capital declines.²⁴ Impairment accounting standards under GAAP set forth the measurement methods for estimating the amount of impairment attributable to individually impaired loans. Regulators generally require institutions to establish policies and procedures for determining the loan loss allowance based on GAAP requirements.²⁵ Under GAAP, credit losses for an individually impaired loan are measured based on the present value of expected future cash flows discounted at the loan's effective interest rate (the contractual interest

²³Essentially, amortized cost is outstanding principal adjusted for any charge offs, deferred fees or costs, and unamortized discount or premium.

²⁴Net interest income is the difference between the interest income recognized on earning assets and the interest expense on deposits and other borrowed funds. Increases in the loan loss allowance for credit losses on nonperforming loans are charged to the bank's expenses on the income statement, thus reducing its net interest income. Reductions in a bank's income are reflected in its earnings, which are included in retained earnings, a component of regulatory capital.

²⁵Section 121 of FDICIA requires that the accounting principles used for regulatory reporting should be no less stringent than GAAP in order to facilitate prompt corrective action to resolve failed banks at the least cost to the DIF.

rate adjusted for any net deferred loan fees or costs, premium, or discount existing at the origination or acquisition of the loan), except that as a practical expedient, impairment may be measured based on the loan's observable market price, or, if the loan is a collateral-dependent loan, the fair value of the collateral.²⁶ GAAP requires the impairment measurement to be based on the fair value of collateral when foreclosure is probable.

Loan Classifications

In examinations, federal banking examiners review a sample of loans and banks' internal ratings of loans to determine the adequacy of credit risk administration and identify loans that have a higher degree of risk of nonpayment. As part of this review, examiners determine which loans are considered "pass," due to their having a lower risk of nonpayment, as well as those that are adversely "classified" because they have a higher risk of nonpayment. There are three adverse classification categories used by the federal banking regulators: "substandard", "doubtful", and "loss". Loans subject to adverse classifications plus the internal ratings that banks apply to their loan portfolios are incorporated into how each bank calculates its loan loss allowance. Therefore, an increase in the amount of loans adversely classified substandard or doubtful typically results in a bank's updating its loan loss allowance estimates to reflect the increased risk in those loans. Loans or portions of loans that are classified loss are removed from the bank's balance sheet because they are considered uncollectible and their continuance as bankable assets is not warranted. This loss amount is charged against the loan loss allowance, which reduces the allowance. Charge offs also cause regulatory capital to decline to the extent that additional provision expenses are needed if the loss has not been previously recognized through the loan loss allowance.

²⁶GAAP defines a loan to be a collateral-dependent loan when the repayment of the debt will be provided solely by the sale or operation of the underlying collateral, and there are no other available and reliable sources of repayment.

Bank Failures Were Largely Related to Nonperforming Real Estate Loans but Also Highlight Impact of Impairment Accounting and Loan Loss Provisioning

In the 10 states with 10 or more failures between 2008 and 2011, failures of small and medium-size banks were largely associated with high concentrations of CRE loans, and in particular, ADC loans, and inadequate management of the risks associated with these loans. The rapid growth of their CRE portfolios resulted in concentrations that exceeded regulatory thresholds for heightened scrutiny and increased the banks' exposure to the sustained real estate and economic downturn that began in 2007. In addition, these failed banks had often pursued aggressive growth strategies using nontraditional, riskier funding sources and exhibited weak underwriting and credit administration practices. Large bank failures in the 10 states were associated with some of the same factors—high-risk growth strategies that relied on nontraditional residential mortgage products, weak underwriting and risk controls, and excessive concentrations that increased these banks' exposure to the real estate market downturn. We found that losses related to bank assets and liabilities subject to fair value accounting contributed little to bank failures overall, largely because most banks' assets and liabilities were not recorded at fair value. Several state regulators and community banking association officials told us that at some small failed banks, declining collateral values of impaired collateral-dependent loans—particularly CRE and ADC loans—drove both credit losses and charge offs and resulted in reductions to regulatory capital. However, data are not publicly available that indicate the extent to which credit losses or charge offs at the failed banks were driven by declines in the fair value of the collateral. The Department of the Treasury (Treasury) and the Financial Stability Forum's Working Group on Loss Provisioning (Working Group) observed that the current accounting model for estimating credit losses is based on historical loss rates, which were low in the years before the financial crisis.²⁷ They noted that earlier recognition of loan losses could have potentially reduced the procyclicality in the recent crisis. To address this issue, the Financial Accounting Standards Board

²⁷See Financial Stability Forum, *Report of the FSF Working Group on Provisioning* (March 2009) and Department of the Treasury, *A New Foundation: Rebuilding Financial Supervision and Regulation* (June 2009). The Financial Stability Forum (FSF) was a group consisting of major national financial authorities such as finance ministries, central bankers, and international financial bodies. Its Working Group on Provisioning was co-chaired by the Securities and Exchange (SEC) Commissioner and the Chair of the Technical Committee of the International Organization of Securities Commissions, and the Comptroller of the Currency and Chair of the Joint Forum. In April 2009, the FSF was re-launched as the Financial Stability Board and its membership expanded and mandate broadened to promote financial stability.

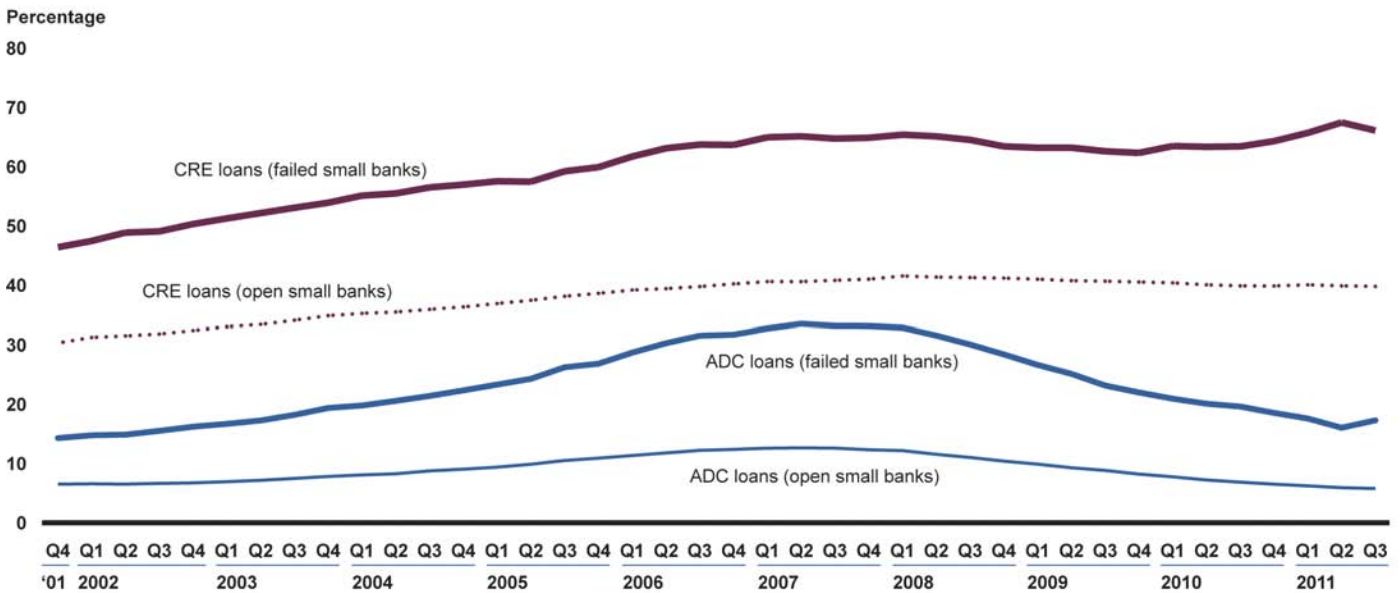
(FASB) has issued a proposal for public comment for a loan loss provisioning model that is more forward-looking and focuses on expected losses, which would result in banks establishing earlier recognition of loan losses for loans they underwrite and could incentivize prudent risk management practices.

Failures of Small and Medium-Size Banks in Our 10 States Were Largely Associated with High Concentrations of Risky CRE Loans

Failures of almost all small and medium-size banks in our 10 states were associated with high concentrations of CRE lending, particularly the higher risk ADC lending segment, and inadequate management of the risks associated with these high concentrations.²⁸ Eighty-eight percent of the 251 IG reviews that we obtained for small and medium failed banks cited high concentrations of CRE and ADC loans as a primary contributing factor to the failures. Figure 2 shows that the quarterly average loan balances of CRE lending and the subset of ADC lending as a percentage of the total loan balances at the 258 small banks that failed between 2008 and 2011 increased significantly in the years prior to the housing market downturn. Small banks that did not fail exhibited markedly slower growth rates of these types of loans as well as substantially lower levels of these loans. The trends for the 35 medium-size banks were similar over this time period.

²⁸We reported similar findings in GAO, *Banking Regulation: Enhanced Guidance on Commercial Real Estate Risks Needed*, [GAO-11-489](#) (Washington, D.C.: May 19, 2011).

Figure 2: Quarterly Average CRE and ADC Loan Balances as a Percentage of Total Loan Balances at Failed and Open Small Banks in the 10 States, 2001-2011



Source: GAO analysis of FDIC call report data.

The rapid growth in CRE and the subset of ADC lending led to concentrations—measured through the ratio of total CRE loans to total risk-based capital—that exceeded regulatory thresholds for heightened scrutiny and increased the banks’ exposure to the risks associated with a sustained downturn in the real estate market and economy. Guidelines issued by federal banking regulators in 2006 provided that banks with ADC concentrations greater than 100 percent or CRE concentrations greater than 300 percent when the outstanding balance of the institution’s CRE portfolio has increased by 50 percent or more during the prior 36 months would be subject to greater regulatory scrutiny.²⁹ CRE concentrations at small failed banks grew from 333 percent in December

²⁹On December 12, 2006, federal banking regulators issued *Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices* to reinforce existing regulations and guidelines for real estate lending and safety and soundness. The Joint Guidance stated that the federal banking regulators had observed an increasing trend in the number of banks with concentrations in CRE loans and noted that such concentration may make institutions more vulnerable to cyclical CRE markets. 71 Fed. Reg. 74,580 (Dec. 12, 2006).

2001 to 535 percent in June 2008, while ADC concentrations grew from 104 percent to 259 percent. Small banks that did not fail exhibited significantly lower concentrations. Overall, CRE concentrations grew from 210 percent to 276 percent over the same time period, while ADC concentrations grew from 46 to 71 percent. We found similar trends for medium-size banks.

With the downturn in the housing market and onset of the financial crisis, the level of nonperforming loans began to rise, as did the level of subsequent charge offs.³⁰ The rising level of nonperforming loans, particularly ADC loans, appears to be the key factor driving the decline in regulatory capital and resulting failures of small and medium banks in the 10 states between 2008 and 2011. In December 2001, only 2 percent of ADC loans at the small failed banks were classified as nonperforming. With the onset of the financial crisis, the level of nonperforming ADC loans increased quickly to 11 percent by June 2008 and 46 percent by June 2011. As banks began to deem nonperforming loans or portions of these loans uncollectible, the level of net charge offs also began to rise.³¹ In December 2001, net charge offs of ADC loans at small failed banks were less than 1 percent. By June 2008, net charge offs were 2 percent, and by June 2011, 12 percent.

FDIC staff told us that small banks first began incurring credit-related losses in their consumer loan and credit card portfolios and later in their construction-related portfolios. Particularly in the southeastern and southwestern United States, ADC projects began to stall because developers could not find buyers or tenants for their completed or ongoing projects. Further, many banks had made loans to developers for the purpose of constructing primary residences, and demand for these residences fell sharply. FDIC staff also noted that ADC loans, in particular, were usually based entirely on collateral values, and that repaying the loans depended on selling the developed properties. They added that rapidly declining real estate values meant that collateral values dropped beneath the outstanding balance of the loans, making it

³⁰Nonperforming loans are defined as loans that are 90 days or more past due and loans on which the bank is no longer accruing interest. Institutions must estimate the credit losses on nonperforming loans and increase the loan loss allowance accordingly.

³¹Net charge offs are the total amount of loans that are charged off (removed from the balance sheet because of uncollectibility), less amounts recovered on loans previously charged off.

difficult for developers to refinance their loans if they could not pay down the principal amount to a level acceptable to the lender.

CRE, and especially ADC, concentrations in failed banks often were correlated to poor risk management and risky funding sources. The IG reviews noted that in the majority of the failures, management exercised poor oversight of the risks associated with high CRE and ADC concentrations and engaged in weak underwriting and credit administration practices. In many cases, the IG reviews noted that the failed banks did not maintain an adequate loan loss allowance. In other instances, failed banks had engaged in out-of-territory lending, that is, participating in CRE and ADC loans outside of their normal geographical trade areas where they did not have experience. Further, 28 percent (84) of the 298 failed banks in the 10 states were young banks that had been chartered for less than 10 years at the time of failure. Both FDIC and OCC staff said a number of these banks that later failed were formed to take advantage of the CRE and ADC market as it was picking up and did not have the experience necessary to manage the risks associated with high concentrations in these loans. FDIC staff noted that in many cases, young failed banks departed sharply from the approved business plan originally filed with FDIC upon receiving their charter by aggressively pursuing growth in higher risk ADC loans.

The IG reviews noted that in general failed small and medium banks had often pursued aggressive growth strategies using riskier funding sources, such as brokered deposits.³² We found that for small failed banks, the average percent of total deposits that were brokered deposits increased from 3 percent in December 2001 to 20 percent in December 2008, and

³²A “brokered deposit” is defined as a deposit obtained, directly or indirectly, from or through the mediation or assistance of a deposit broker. The term “deposit broker” is defined by statute as “(A) any person engaged in the business of placing deposits, or facilitating the placement of deposits, of third parties with insured depository institutions or the business of placing deposits with insured depository institutions for the purpose of selling interests in those deposits to third parties; and (B) an agent or trustee who establishes a deposit account to facilitate a business arrangement with an insured depository institution to use the proceeds of the account to fund a prearranged loan,” subject to certain exclusions. 12 U.S.C. § 1831f(g). The broker pools large-denomination deposits from many small investors and markets the pooled deposits to financial institutions, usually in blocks nearing \$100,000, and negotiates a higher rate for the pooled certificates of deposit. In contrast, core deposits are largely derived from a bank’s regular customer base, and are typically the most stable and least costly source of funding with the lowest interest rates.

for medium-size failed banks, from 3 percent to 28 percent. For small and medium-size banks that did not fail, the level of brokered deposits was considerably lower, increasing from 2 percent to 6 percent and from 4 to 13 percent, respectively, over the same time period. According to a 2011 FDIC study, high rate deposits, which can include brokered deposits, appear more likely to lead a bank to take greater risk because, all else being equal, to net the same amount a bank must earn more on its assets for a high rate deposit than for a low rate deposit.³³ Moreover, once a bank is not well capitalized, federal law prohibits banks from renewing or accepting brokered deposits, which makes it difficult to replace these funds when they mature.³⁴

Several state banking regulators and one federal banking regulator noted that other small and medium banks also exhibited high levels of CRE and ADC concentrations prior to the onset of the financial crisis, but did not fail. They attributed the nonfailure of these institutions to better risk management practices. For example, they noted that these banks tended to engage in more sound underwriting and maintained higher capital levels than the banks that failed. Similarly, an FDIC IG study issued in October 2012 found that some banks with high ADC concentrations were able to weather the recent financial crisis without experiencing a corresponding decline in their overall financial condition. The factors that the IG identified that contributed to their success included a well-informed and active board, strong management, sound credit administration and underwriting practices, and adequate capital. In addition, the IG found that the banks in their sample did not rely on brokered deposits to fund growth and had significantly diversified their loan portfolio by shifting their

³³FDIC, *Study on Core Deposits and Brokered Deposits*, (Washington D.C.: July 2011).

³⁴12 U.S.C. § 1831f; 12 C.F.R. § 337.6(b). FDIC may, on a case-by-case basis, waive the prohibition on renewing and accepting brokered deposits for banks that are adequately capitalized (but not well capitalized) if it finds that the acceptance of such deposits does not constitute an unsafe or unsound practice.

loan mix away from ADC loans and to shrink the volume of ADC loans in response to the economic decline.³⁵

The IG reviews also identified the decline in the fair value of real-estate related investment securities as a contributing factor to the failure of some small and medium-size banks. The IG reviews noted that about 10 percent of failed small and medium-size banks had made investments in instruments such as private label residential mortgage-backed securities (MBS) and preferred stock of the housing-related government-sponsored enterprises (GSE), Fannie Mae and Freddie Mac, which subsequently declined in value. When the real-estate market began to deteriorate in 2007, residential MBS securities began experiencing significant price declines as a result of credit rating downgrades that reflected the decline in the quality of the underlying mortgages. On September 7, 2008, Treasury and the Federal Housing Finance Agency announced that the GSEs had been placed into conservatorship. GSEs' equity prices dropped considerably in response, and, as a result, those banks that held sizable amounts of the GSEs' preferred stock suffered substantial losses.

Econometric Analysis Suggests That Riskier Lending and Funding Sources Were Associated with an Increased Likelihood of Bank Failure Nationwide

Our econometric analysis suggests that across the country, banks with high concentrations of ADC loans and a greater use of brokered deposits were more likely to fail from 2008 to 2011, while banks with greater capital adequacy and better asset quality were less likely to fail. To investigate factors associated with bank failures across the United States, we analyzed data on FDIC-insured commercial banks and state-chartered savings banks from 2006-2011.³⁶ We collected data on characteristics that described a bank's capital adequacy; asset quality; earnings; liquidity; ADC lending; multifamily real estate lending; non-farm, non-

³⁵FDIC Office of the Inspector General, Acquisition, office of Audits and *Evaluations, Acquisition Development, and Construction Loan Concentration Study*, no. EVAL-13-001 October 2012. The IG had identified 436 institutions that had an ADC concentration of 100 percent or greater as of December 2007 and were in satisfactory condition as of April 2011. From those, the IG chose a sample of 18 institutions that had ADC concentrations of 300 percent or more. The IG noted that it did not identify a significant number of banks with high concentrations in 2007 that were in satisfactory condition in 2011, which it stated was reflective of how difficult it was for institutions with exceedingly high ADC concentrations to mitigate the concentration risk during an economic downturn.

³⁶We excluded savings associations and insured branches of foreign banks from our analysis because these institutions did not report data on key variables for the time period we analyzed.

residential real estate lending; commercial real estate lending not secured by real estate; brokered deposits funding; and size. We then used an econometric model to estimate the likelihood of failure as a function of these characteristics, controlling for factors that affect the likelihood of failure of all banks, such as the market for the banks' products and services and overall economic conditions.³⁷

We found that greater amounts of ADC lending and greater reliance on brokered deposits were associated with an increased likelihood of failure, while higher asset quality and better capital adequacy were associated with a reduced likelihood of failure, all else being equal. Banks were more likely to fail if they had higher concentrations of ADC loans three to eight quarters in the past. Banks were also more likely to fail if they relied more heavily on brokered deposits six to eight quarters in the past. However, banks were less likely to fail if they had better capital adequacy in the past six quarters or if they had better asset quality in the past eight quarters.

Separate analyses of banks by size yielded results that were generally consistent with our aggregate results. To allow for the possibility that different factors were associated with the failure of banks of different sizes, we repeated the analysis separately for small banks and medium-size banks.³⁸ We found that ADC lending was associated with an increase in the likelihood of failure for both types of banks. We also found that capital adequacy was associated with a decreased likelihood of failure for both small and medium-size banks and that asset quality was associated with a decreased likelihood of failure for small banks.

Our results likely reflect both factors that are generally associated with the likelihood that a bank fails and the specific characteristics of the time period we analyzed, and therefore our results may not be generalizable to other time periods. Furthermore, our results reflect average relationships between bank characteristics and the likelihood of failure for all of the observations we used. As such, they may not reflect the specific

³⁷We used a discrete-time hazard model to estimate how various variables impacted the likelihood that a bank would fail in a future time period. See appendix III for more details on our econometric model.

³⁸The number of failures of large banks (average assets of \$10 billion or more) was too small to analyze separately.

circumstances of any one bank. Finally, the list of characteristics we analyzed highlights important characteristics of banks that are related to the likelihood of failure, but because many other characteristics play a role in whether or not a bank fails, our list of characteristics is likely not exhaustive. Specifically, we did not completely control for a number of factors thought to drive the failures such as risk management practices or excessive growth.

Most Large Bank Failures in the 10 States Were Primarily Associated with Losses from Subprime and Nontraditional Residential Mortgage Loans

The four largest failures in our 10 states—Washington Mutual Bank (WaMu); IndyMac Bank (IndyMac), FSB; Bank United, FSB; and Downey Savings and Loan, FA— were caused primarily by management’s pursuit of a high-risk growth strategy that relied on high-risk residential mortgages. According to the IGs’ review, these banks had developed excessive concentrations in risky nontraditional loan products, such as payment option ARMs, Alt-A loans, and nonprime loans, and had inadequate underwriting and risk controls.³⁹ For example, according to the Treasury IG, as its primary business, IndyMac originated high-risk residential mortgage loans or bought loans from others, including mortgage origination brokers, and packaged them together in securities that it sold on the secondary market to other banks, thrifts, or investment banks. IndyMac maintained mortgage servicing rights for the loans it sold. The IG noted that IndyMac held the loans in its “available for sale” portfolio from the time they were packaged until they were sold to investors. The IG’s review noted that Indy Mac had engaged in an aggressive growth strategy focusing on Alt-A and other nontraditional loan products—often making loans without verification of the borrower’s income—insufficient underwriting, credit concentrations in residential real estate in the California and Florida markets, and heavy reliance on noncore funding such as brokered deposits. When home prices declined in the second half of 2007 and the secondary mortgage market collapsed, IndyMac was left with \$10.7 billion in loans it could not sell. Its reduced liquidity was further exacerbated in late June 2008 when account holders withdrew \$1.55 billion during the month. OTS closed IndyMac on July 11,

³⁹Payment option ARMs are a type of adjustable rate mortgage that allows borrowers to make minimum payments that do not cover principal or all accrued interest, but can result in increased loan balances over time (negative amortization). Typically after 5 years, or if the loan balance increases to a cap specified in the mortgage terms, payments recast to include an amount that will fully amortize the outstanding balance over the remaining years of the loan.

2008, and named FDIC as receiver. FDIC re-opened the bank on July 14, 2008, as IndyMac Federal Bank, F.S.B. and later sold it to OneWest Bank, F.S.B. in March 2009.

As another example, the joint FDIC and Treasury IGs' review noted that payment-option ARMs at WaMu grew to represent as much as half of all loan originations and approximately \$59 billion (47 percent), of the home loans on WaMu's balance sheet at the end of 2007. In addition to payment option ARMs, WaMu's business strategy included underwriting subprime loans, home equity loans, and home equity lines of credit to high-risk borrowers. In line with that strategy, WaMu purchased and originated subprime loans, which represented approximately \$16 billion (13 percent), of WaMu's 2007 home loan portfolio. The joint IG review noted that home equity products totaled \$63.5 billion (27 percent), of WaMu's loans secured by residential real estate in 2007—a 130 percent increase from 2003. After the mortgage market meltdown in mid-2007, WaMu began experiencing severe losses due to loan charge offs and provisions for loan losses—\$1 billion between fourth quarter 2007 and first quarter 2008 and another \$3 billion by second quarter 2008—and its stock price decreased by 55 percent. The joint IG review also noted that with the failure of IndyMac in July 2008, WaMu's liquidity was stressed as it encountered significant deposit withdrawals. The Federal Home Loan Bank of San Francisco also began to limit WaMu's borrowing capacity. As a result, WaMu began offering deposit rates in excess of competitors in order to bring in deposits to improve liquidity. Shortly thereafter, Lehman Brothers collapsed on September 15, 2008, and within the following 8 days, WaMu incurred net deposit outflow of \$16.7 billion, creating a second liquidity crisis. WaMu's ability to raise funds to improve its liquidity position was hindered by, among other things, its borrowing capacity limits, share price decline, and portfolio losses, according to the IG review. On September 25, 2008, OTS closed WaMu and appointed FDIC as receiver; FDIC sold WaMu to JP Morgan Chase & Co.

In contrast, one of the five largest bank failures in our 10 states during the period resulted, in part from CRE and ADC loans. Specifically, the FDIC IG identified contributing factors to the failure of the fifth largest bank, United Commercial Bank (UCB), as high concentrations in CRE and ADC loans and heavy reliance on nontraditional funding sources to support its expansion efforts, all of which increased the bank's risk profile. For example, between 2005 and 2009, ADC concentrations grew from 72 percent to 211 percent of total capital. According to the IG, UCB's board and management failed to control the risks associated with the institution's rapid expansion. As the commercial real estate market

declined, losses and provisions associated with ADC and CRE concentrations eroded the bank's earnings and capital and led to inadequate liquidity.⁴⁰ The California Department of Financial Institutions closed UCB and appointed FDIC receiver on November 6, 2009.

Credit Losses and Charge-offs from Nonperforming Loans Contributed Significantly to Bank Failures Nationwide, but Losses Due To Fair Value Accounting Did Not

Concerns have been raised that recent bank failures may have been driven, in part, by unrealized losses resulting from changes in the fair value of certain assets and liabilities and that such losses had a procyclical impact on banks' balance sheets. Based on our analysis, fair value losses related to investments in certain types of mortgage-related investment securities were a contributing factor in some bank failures; but, fair value related losses in general contributed little to the decline in net interest income and regulatory capital that failed banks experienced overall once the financial crisis began.

We analyzed the assets and liabilities on the balance sheets of failed banks nationwide that were subject to fair value accounting between 2007 and 2011. We found that generally over two-thirds of the assets of all failed commercial banks (small, medium-size, and large) were classified as held-for-investment (HFI) loans, and, as discussed earlier, were not subject to fair value accounting.⁴¹ For example, small failed commercial banks held an average of 77 percent of their assets as HFI loans in 2008 compared to small open commercial banks, which held an average of 69 percent in such loans. Small failed thrifts, as well as failed and open medium-size and large commercial banks and thrifts, exhibited similar percentages.

Investment securities classified as available for sale (AFS) represented the second-largest percentage of assets for all failed and open banks

⁴⁰The IG further noted that management controls were insufficient to prevent inaccuracies, omissions, and misrepresentations that affected key UCB financial statements, prompting the bank's audit committee to start an investigation in May 2009. UCB reported that its 2008 financial statements were materially inaccurate and required revision. The investigation and inaccurate financial statements made it harder for UCB to raise the capital the bank needed in 2009 to absorb substantial provisions and losses associated with its loan portfolio.

⁴¹We analyzed commercial banks and thrifts separately for this section because the call report and the thrift financial report categorize and group income statement items in different formats and because thrift financial report filers were not required to report the fair value of certain types of assets and liabilities.

over our 5-year time period.⁴² For example, in 2008, small failed commercial banks held an average of 10 percent of their assets as AFS securities, while small open banks averaged 16 percent. Generally, AFS securities are recorded at fair value on a recurring basis with changes in fair value recorded in OCI; however, these fair value changes do not impact earnings or regulatory capital, unless the institution determines that those fair value changes constituted an other-than-temporary impairment with credit losses reflected in the income statement through earnings, thereby reducing regulatory capital.⁴³

Several other asset and liability categories are recorded at fair value on a recurring basis through income or at the lower of cost or fair value under certain circumstances. However, together these categories did not account for a significant percentage of total assets at either failed or open commercial banks or thrifts. For example, in 2008, assets and liabilities recorded at fair value on a recurring basis through income at small failed banks ranged from 0.00 percent to 0.03 percent. As a consequence, fair value changes of these assets and liabilities, generally, were not a key driver in institutions' financial performance.⁴⁴

Declines in regulatory capital at failed banks in the 10 states and the rest of the United States were driven by rising levels of credit losses related to nonperforming loans held by the banks and subsequent charge offs of these loans. For failed commercial banks and thrifts of all sizes nationwide, we found that the credit losses, which resulted from nonperforming HFI loans, were the largest contributors to the institutions' overall losses when compared to any other asset class. These losses had a greater negative impact on institutions' net interest income and

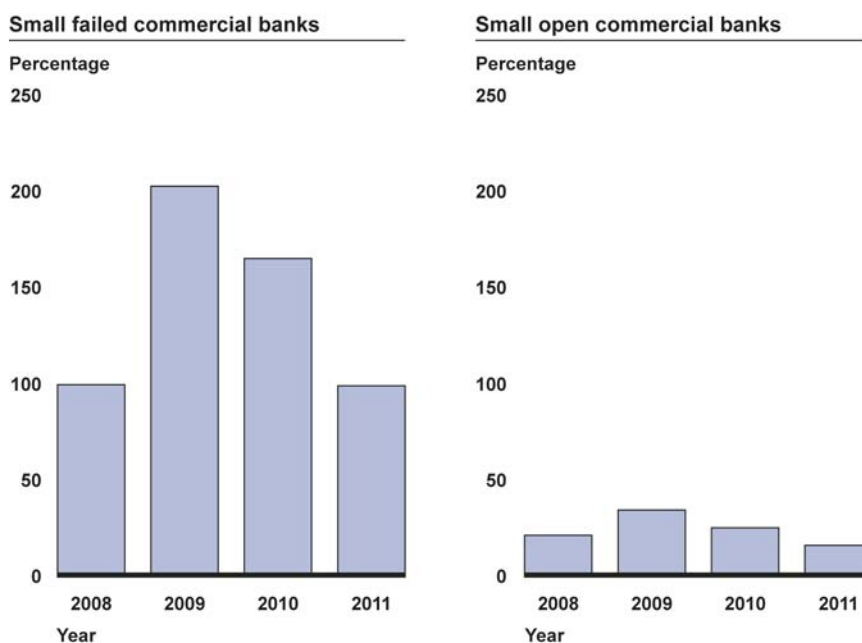
⁴²Investments in debt securities that are not classified as trading securities or as HTM securities are classified as available-for-sale (AFS) securities. AFS securities also include equity securities that have readily determinable fair values and are not classified as trading securities.

⁴³As a result of an April 2009 change to the relevant GAAP standard, an OTTI loss on either a debt security classified as AFS or held-to-maturity in certain circumstances is separated into (1) the credit loss amount, which is recognized in earnings and (2) the amount related to all other factors (noncredit loss), which is recognized in OCI, net of applicable taxes. See appendix IV for further discussion of the impact of this change on the balance sheet of failed and open banks.

⁴⁴Appendices IV and V provide more information on the various bank assets and liabilities subject to fair value accounting in open and failed small, medium-size, and large commercial banks and thrifts.

regulatory capital levels than those recorded at fair value. For example, from 2008 to 2011, credit losses at small failed commercial banks accounted for on average of over 140 percent of net interest income (see fig. 3), compared with 24 percent for small open commercial banks. Net losses from other income categories did not represent a significant percent of net interest income for either small failed or open commercial banks.⁴⁵

Figure 3: Credit Losses as a Percentage of Net Interest Income for Small Failed Commercial Banks and Small Open Commercial Banks in All States, 2008-2011



Source: GAO analysis of call report and thrift financial report data.

Declining Collateral Values Contributed to Credit Losses and Charge Offs at Small Failed Banks

While fair value accounting did not play a significant role in bank failures, several state regulators and community banking association officials told us that at some failed community banks, declining collateral values of impaired collateral-dependent loans—particularly CRE and ADC loans—

⁴⁵See appendix IV and V.

drove both credit losses and charge-offs and resulted in reductions to regulatory capital.

Under GAAP, when a creditor such as a bank has determined that a loan is impaired it must establish the amount of the impairment on the basis of the present value of expected future cash flows, discounted at the loan's effective interest rate (the contractual interest rate adjusted for any net deferred loan fees or costs, premium, or discount existing at the origination or acquisition of the loan). However, as a practical expedient to measuring the discounted expected cash flows, impairment may also be measured in one of two other ways: either using the loan's observable market price, or if the loan is collateral-dependent, the "fair value" of the collateral. A loan is considered "collateral dependent" when the repayment of the debt will be provided solely by the sale or operation of the underlying collateral and there are no other available and reliable sources of repayment.

Federal banking regulators have issued guidance allowing banks to choose one of these three methods on a loan-by-loan basis for measuring impairment on an individually impaired loan, except for an impaired collateral-dependent loan. In that case, the regulators require that banks determine the amount of the loan impairment and the required increase to the loan loss allowance using the fair value of the collateral (the fair value of collateral method).⁴⁶ The guidance directs banks to consider the appraised value of the collateral as the starting point for determining its fair value.⁴⁷ In addition, the guidance provides that any portion of the loan balance on an impaired collateral dependent loan that exceeds the fair value of the collateral (less costs to sell in certain circumstances) and can be identified as uncollectible should generally be classified as a loss and

⁴⁶Interagency Policy Statement on the Allowance for Loan and Lease Losses (December 2006) and Policy Statement on Prudent Commercial Real Estate Loan Workouts (October 2009). GAAP requires the use of the fair value of the collateral method when foreclosure is probable on collateral-dependent loans.

⁴⁷According to the guidance, an institution should consider the appraised value of the collateral as the starting point for determining its fair value but should also consider other factors and events in its environment that could have affected the current fair value of the collateral since the appraisal was performed. For example, the timing of when the cash flows are expected to be received from the underlying collateral could affect the fair value of the collateral if the timing was not contemplated in the appraisal. This generally results in the appraised value of the collateral being greater than the institution's estimate of the collateral's fair value (less costs to sell).

charged off against the loan loss allowance. This principle applies when the repayment of the debt will be provided solely by the sale of the underlying real estate collateral (as opposed to the operation of the collateral) and there are no other available and reliable sources of repayment.

As discussed earlier, many failed banks' had high concentrations in ADC loans, which are considered the riskiest class of CRE loans because they can include properties that are built before having firm purchase or lease commitments from buyers or lessees. For many of these loans, market demand had fallen by the time the construction phase was completed, putting downward pressure on sales prices or rents. Data are not publicly available that indicate the extent to which credit losses or charge-offs at the failed banks were driven by declines in the collateral values of impaired collateral-dependent CRE or ADC loans.⁴⁸ However, several state regulators and state banking associations from the 10 states that we spoke with said that such declines in the collateral underlying impaired CRE and ADC loans were significant drivers in the levels of credit losses and charge-offs, and thus declines in regulatory capital, experienced by failed community banks, especially in those areas where real estate assets prices declined severely. Some state banking associations said that these effects were exacerbated by federal bank examiners' classification of collateral-dependent loans and their evaluation of appraisals used by banks to support impairment analysis of these loans. First, two state banking associations said that during examinations federal bank examiners adversely classified some performing collateral-dependent loans. These associations stated that in these instances, borrowers were making interest and principal payments as agreed; however, regulators questioned borrowers' future capacity to repay the loan. As such, the banks were then required to conduct an impairment analysis based on the appraised value of the collateral, which resulted in significant credit losses and charge-offs. Second, another association expressed concerns about the appraisals used to determine the fair value of the collateral and examiners' judgments concerning these appraisals. This association said that after the financial crisis began, examiners questioned some of the appraisals banks had obtained and made

⁴⁸Neither bank call reports nor thrift financial reports specify the nature of credit losses or charge offs reported by banks and thrifts.

adjustments to them, driving larger valuation allowances, and when required, larger write-downs, than may have been warranted.

FDIC, Federal Reserve, and OCC staff agreed that the underlying collateral value of collateral-dependent loans that many failed banks had held had declined noticeably. However, they noted that regulatory guidance issued in October 2009 directed examiners not to require banks to write down loans to an amount less than the loan balance solely because the value of the underlying collateral had declined.⁴⁹ The guidance stated that for many CRE projects, the value of the collateral and the repayment of the loan both depended on the cash flows that the underlying project was expected to generate. Because of this linkage, collateral values are considered an important indicator of project viability and could signal changes that would adversely affect the cash flow available to service or repay the loan. The guidance stated that in making decisions to write down loans, bank examiners are to first focus on the adequacy of cash flows to service the debt, including cash flows from the operation of the collateral, and support from financially responsible guarantors or other bona fide repayment sources. However, the guidance noted that if these sources did not exist, and the only likely repayment source was the sale of the collateral, then examiners would direct the bank to write down the loan balances to the fair value of the collateral, less estimated costs to sell in certain circumstances. For example, one Federal Reserve staff told us that at some failed banks, ADC loans were being extended on an interest-only basis with no evidence that the borrower would be able to repay the principal and with underlying collateral whose value had declined by a very significant amount. In those cases, examiners questioned whether the banks would ever be repaid the principal owed. Absent any evidence the borrowers could pay through other means, the examiners would require a write-down under such circumstances. The guidance also addressed the appraisals banks obtained to support their impairment analyses. The guidance stated that examiners were generally not expected to challenge the appraisals obtained by banks unless they found that any underlying facts or

⁴⁹Policy Statement on Prudent Commercial Real Estate Loan Workouts.

assumptions about the appraisal were inappropriate or could support alternative assumptions.⁵⁰

One banking association we spoke with noted that the required use of the fair value of collateral method to measure impairment resulted in larger increases to the loan loss allowance and loan loss provisions and resulting reductions in capital than would have occurred if the regulators had allowed the banks to use the present value of expected future cash flows method. This could occur particularly in those instances where repayment of the loan depended on the operation, as opposed to the sale, of the underlying collateral (e.g. rent collected from an apartment building). In such instances, as one of the valuation techniques used to determine appraised value, which is the starting point for applying the fair value of collateral method, expected cash flows from the income source are to be discounted using the market interest rate. The banking association also noted that the impairment amounts associated with the fair value of collateral method were greater because the market interest rate used in the appraisal process to discount the expected future cash flows was higher than the effective interest rate used under the present value of expected cash flows method.

FDIC and Federal Reserve staff told us that the federal banking regulators required banks to use the fair value of collateral method when determining the appropriate impairment amount of a collateral-dependent loan for consistency and comparability as well as for safety and soundness reasons. The effective interest rate used under the present value of expected cash flows method is the contractual interest rate on the loan and essentially a historical rate. Federal Reserve staff said that because different loans have different effective interest rates, values obtained using the present value of expected cash flows method are not comparable across loans or banks. Federal Reserve staff said that the fair value of collateral method facilitated comparability because it required the use of the same interest rate—the market interest rate—to value collateral.

⁵⁰In [GAO-11-489](#), we reported that interviews with officials from 43 banks in different parts of the country had identified multiple concerns with examiner treatment of CRE loans and related issues. As part of its mandated study under Pub. L. No. 112-88, the FDIC IG reviewed examiner classification of loans reported by the institution as current, as well as the policies and procedures examiners use for evaluating the appraised values of property securing real estate loans and the extent to which those policies and procedures were followed.

Federal Reserve staff also said that the fair value of collateral method promotes safety and soundness by ensuring that a loan that is impaired is not carried on the books at a higher value than what can be obtained if the collateral were liquidated. FDIC staff agreed that the fair value of collateral method generally results in larger increases to the loan loss allowance for individually impaired loans and thus higher loan loss provisions than the present value of expected future cash flows method. From a safety and soundness perspective, they said that federal bank examiners require that the loan loss allowance be adequate within the confines of GAAP to absorb the potential losses on loans. Further, they said that the decision to require the use of the fair value of collateral method to determine the appropriate increase to the loan loss allowance, and, if required, the write-down and charge-off of an impaired collateral-dependent loan reflected long-standing examination practices.

Current Accounting Practices for Loss Provisioning May Have Delayed Reporting of Credit Losses during the Recent Crisis

Treasury and the Working Group have observed that the current accounting model for determining credit losses is based on historical loss rates, which were low in the years before the financial crisis. Under GAAP, the accounting model for estimating credit losses is commonly referred to as an “incurred loss model” because the timing and measurement of losses are based on estimating losses that have been incurred as of the balance sheet date, indicating a probable loss. In a 2009 speech, the Comptroller of the Currency, who was a co-chair of the Working Group, noted that in a long period of benign economic conditions, such as the years prior to the recent downturn, historical loan loss rates would typically be low. As a result, justifying significant loan loss provisioning to increase loan loss allowance can be difficult under the incurred loss model.⁵¹ Treasury and the Working Group said that earlier

⁵¹Remarks by John C. Dugan, Comptroller of the Currency before the Institute of International Bankers, *Loan Loss Provisioning and Pro-cyclicality*, (Mar. 2, 2009). He also noted that by building up a large loan loss allowance when times were good, banks could recognize and deal with credit problems early. Later, when the loan losses materialize, the loan loss allowance can absorb the losses without impairing capital, keeping the bank safe, sound, and able to continue extending credit. He also said that in theory, the loan loss allowance could have an important macroeconomic benefit as well. He said that allowing banks to recognize losses early should result in charges against earnings (and possibly capital) during the favorable part of an economic cycle, because banks anticipated higher future losses when the cycle turned negative. At the same time, charges would be reduced during downturns, since banks anticipated smaller losses when the cycle turns positive. In other words, the loan loss reserving process can have the important economic benefit of being counter cyclical.

recognition of loan losses could have potentially reduced the procyclicality of provisioning in the recent crisis—when banks had to recognize increases in their incurred credit losses through a sudden series of loan loss provisions, reducing earnings and regulatory capital—while still providing the necessary transparency to users of financial reports on changes in credit trends.⁵²

In a 2010 speech, the chief national bank examiner for the OCC noted that the existing accounting rules made it difficult for examiners to require banks to make provisions to increase their loan loss allowances when it became clear that credit troubles were on the horizon. He said the result was that when subsequent charge-offs on impaired loans occurred, the allowances were not there to support them, and the higher provision levels that were then needed reduced capital, accelerating the spiral into insolvency for many banks.⁵³ FDIC and Federal Reserve staff also said that the existing accounting rules restricted examiners' ability to require banks to increase their loan loss allowances to recognize credit losses that were expected to occur in the future even as the examiners saw banks developing high concentrations of CRE and ADC loans and

⁵²Several empirical studies have found evidence linking lower levels of loan loss allowances to procyclicality in the banking system and, conversely, that higher levels of loan loss allowances reduce procyclicality. For example, a 2009 Federal Reserve Bank of Richmond study compared the incurred loss model as implemented in the United States and the dynamic provisioning model as implemented in Spain, which is intended to build loan loss allowances to protect banks against losses expected but not yet identified in the loan portfolio. The authors conducted an empirical simulation and concluded that a dynamic provisioning framework could have allowed for a build-up of allowances during the boom years in the United States and the need to provision for loan losses would have been significantly lower during the financial crisis of 2007–2009. See Eliana Balla and Andrew McKenna, “*Dynamic Provisioning: A Countercyclical Tool for Loan Loss Reserves*,” *Economic Quarterly* 95(4), (fall 2009), 383–418. Similarly, a 2012 Bank for International Settlements study examined Asian banks provisioning practices in the aftermath of the Asian financial crisis of the late 1990s to determine whether these banks were provisioning in a manner that reduced procyclicality. Based on a sample of 240 banks in 12 Asian countries, the researchers found that loan loss allowances and provisioning levels were generally higher in the run-up to the recent financial crisis. The researchers reported that countercyclical loan loss provisioning—increasing provisioning in good times in response to rising levels of risk dominated in emerging Asian economies and ameliorated swings in bank earnings and the macroeconomy. See Frank Packer and Haibin Zhu, “*Loan Loss Provisioning Practices of Asian Banks*,” Bank For International Settlements, Working Paper No. 375, (April 2012).

⁵³Remarks by Tim Long, Senior Deputy Comptroller for Bank Supervision Policy and Chief National Bank Examiner, AICPA National Conference on Banks and Savings Institutions (September 14, 2009).

loosening underwriting standards. They also noted that the incurred loss model in effect creates “hurdles” for the examiners, outside auditors, and bank management who see credit trends and have the experience to know that problems are brewing but cannot incorporate this knowledge of growing risk into provisioning adequately for expected loan losses.

FDIC staff said that examiners can require banks to increase regulatory capital (i.e. by increasing shareholder equity) if they believe the level of the bank’s capital or loan loss allowance does not adequately address the credit risk in the loan portfolio.⁵⁴ However, FDIC staff said that it is important for the loan loss allowance methodology to reflect best practices in credit risk management, so that bank management is forced to think about the potential amount of losses they might expect from the loans they are making. Similarly, Federal Reserve staff said that if management at the failed banks had been required to recognize loan losses earlier for the types of loans they were underwriting, it might have provided an incentive for them to not concentrate so heavily in the loans that later resulted in significant losses.

To address this issue, Treasury and the Working Group called for accounting standards setters to reevaluate the incurred loss model underlying current loan loss provisioning requirements and to reevaluate the existing accounting standards to develop forward-looking loan loss provisioning practices that incorporated a broader range of available credit information. In January 2011 FASB published a Supplementary Document, pursuant to a joint project with the International Accounting Standards Board (IASB) which proposed a model based on expected

⁵⁴Staff from the federal banking regulators told us that FDICIA precludes them from requiring banks to follow loan loss provisioning accounting methodologies that are not GAAP-compliant. Section 121(a) of FDICIA states that accounting principles applicable to reports or statements that federal banking regulators require insured depository institutions to file must, among other things, result in financial statements and reports of condition that accurately reflect the capital of such institutions and facilitate their effective supervision. 12 U.S.C. § 1831n(a)(1). Section 121(a) also requires such accounting principles to be uniform and consistent with GAAP. 12 U.S.C. § 1831n(a)(2)(A). If a federal banking regulator determines that the application of any generally accepted accounting principle to any insured depository institution is inconsistent with the objectives described in (1), it may prescribe an accounting principle which is applicable to such institutions which is no less stringent than GAAP.

losses.⁵⁵ For the purpose of determining impairment allowance, financial assets that were managed on an open portfolio would be split into two groups: the “good book” and the “bad book,” with an allowance computed for both books separately.⁵⁶ The division of the good book and bad book portfolios is based on an evaluation of the degree of uncertainty about collectability. The bad book requires the entire amount of expected credit losses over the remaining life of the portfolio to be recognized immediately. The good book requires the higher of (1) the time proportional expected credit losses or (2) the credit losses expected to occur within the foreseeable future. The time proportional expected credit losses represents a portion of expected lifetime losses based on the age of the financial assets relative to their expected life.

Some comment letters received in response to the proposal expressed concerns about potential complexities in the application of the proposed model, including uncertainty as to how institutions would actually estimate expected losses over the life of a portfolio. For example, the proposed approach for the good book required dual computations and introduced the need to estimate the expected remaining life of each portfolio in order to apply a “time proportional” approach. Concerns were also expressed about how companies would divide the portfolio into the good book and bad book and how transfers between the two books would occur. Based on the comments received, FASB and IASB began developing a revised credit impairment approach that would divide portfolios into three buckets of assets that determined the timing and amount of credit losses.⁵⁷ However, as a result of comments received regarding the

⁵⁵Expected losses are those losses that result from specified past, present, and future events. Unexpected losses, on the other hand, are losses that are unanticipated due to various economic or other factors that cannot be controlled by bank management.

⁵⁶FASB, Supplementary Document: *Accounting for Financial Instruments and Revisions to the Accounting for Derivative Instruments and Hedging Activities: Impairment* (January 2011).

⁵⁷According to this concept, Bucket 1 assets would be evaluated collectively for impairment if they do not meet the definition of Bucket 2 or 3, including loans that have suffered changes in credit loss expectations as a result of macroeconomic events that are not specific to either a group of loans or a specific loan. Conversely, Bucket 2 assets would include those that have been affected by observable events that indicate a direct relationship to possible future defaults; however, the specific assets in danger of default are not known. Bucket 3 assets would consist of loans for which information is available that specifically identifies credit losses that are expected to, or have, occurred on the individual assets.

understandability, operability, and auditability of this proposal, FASB announced on August 1, 2012, that it would instead explore a revised approach. In its Summary Board Decisions of August 22, 2012, FASB stated it was considering an alternative approach to impairment measurement called the “Current Expected Credit Loss Model”. Under this model, the credit deterioration (or improvement) reflected in the income statement would include changes in the estimate of expected credit losses resulting from, but not limited to (1) changes in the credit risk of assets held by the entity, (2) changes in historical loss experience for assets like those held at the reporting date, (3) changes in conditions since the previous reporting date, and (4) changes in reasonable and supportable forecasts about the future. Such a model would recognize losses, if any, earlier than the current incurred loss model. On December 20, 2012, FASB issued a proposal for public comment regarding this model.⁵⁸

In their comment letters to FASB on its proposals, federal banking regulators stated that they support the development of improved impairment standards and in particular an impairment standard that is more forward looking and recognizes credit losses earlier than the current incurred loss model.⁵⁹ FDIC staff said that given the unprecedented nature of the financial crisis, it was not clear to what extent recent bank failures would have been prevented had an expected loss model been in effect instead of the incurred loss model. However, they said that loan loss allowances under an expected loss model would certainly have been higher than they were at the beginning of the financial crisis, which would

⁵⁸FASB Exposure Draft, “*Financial Instruments—Credit Losses (Subtopic 825-15)*”, (December 20, 2012).

⁵⁹Federal Reserve staff said that it is important that the accounting standards setters are addressing expected losses via their development of an expected loss model for loan loss provisioning because other ongoing efforts to address procyclicality in the banking system are focused solely on unexpected credit losses. They noted that proposed standards under Basel III, which is intended to strengthen the global regulatory framework related to bank capital, address unexpected losses in their proposed capital measures but not expected loan losses. The Basel Committee on Banking Supervision, which drafted the proposed Basel III framework, stated it strongly supports the accounting standard setters’ initiative to promote stronger loan loss provisioning practices by moving towards an expected loss model and that it sees its work and that of the accounting standards setters as complementary in addressing procyclicality. See Basel Committee on Banking Supervision, *Basel III: A Global Regulatory Framework For More Resilient Banks And Banking Systems* (December 2010).

have provided banks' earnings and capital more protection against the rising credit losses.

We agree that loan loss allowances were not adequate to absorb the wave of credit losses that occurred when the financial crisis began, in part because current accounting standards for loan loss provisioning require banks to estimate losses using an incurred loss model and that earlier recognition of loan losses could have potentially reduced the procyclicality in the recent crisis. FASB is in the process of taking important steps to address this issue by proposing a model for loan loss provisioning that is more forward-looking and focuses on expected losses instead of incurred losses. Although examiners have the flexibility to require banks to increase regulatory capital if they determine that capital or loan loss allowances do not adequately address the credit risk in the loan portfolio, we agree with federal banking regulators that it is important for the loan loss reserving methodology to reflect best practices in credit risk management. Doing so would not only result in bank managements' establishing loan loss allowances for the loans they underwrite that reflect expected losses, but also could incentivize prudent risk management practices. Moreover, it should help address the cycle of losses and failures that emerged in the recent crisis as banks were forced to write down impaired loans and increase loan loss allowance and raise capital when they were least likely to be able to do so.

FDIC Used Shared Loss Agreements to Attract Bidders at Least Cost to the Deposit Insurance Fund

During the recent financial crisis, FDIC used shared loss agreements to help resolve failed financial institutions at the least cost to the DIF.⁶⁰ FDIC officials, state bank regulators, community banking associations, and acquiring banks of failed institutions we interviewed told us that shared loss agreements helped to attract potential bidders interested in purchasing the failed banks. According to FDIC officials, at the height of the financial crisis in 2008, FDIC sought bids for whole bank purchase and assumption agreements with little success. Banks that we spoke to said that, because of uncertainties about the market and the value of the assets, they would not have purchased the failed banks without FDIC's shared loss agreements. According to acquiring banks and peer banks we interviewed, while total estimated lifetime losses of the shared loss

⁶⁰As part of FDIC's annual financial statement audit, GAO evaluates the controls over the least cost test process, total estimated lifetime losses, and shared loss payments. We found no material weaknesses in these controls. Most recent audit results can be found in [GAO-12-416](#). Appendix II provides more information on FDIC's least cost test process.

agreements may not change, the timing of the losses may change and payments from shared loss agreements may increase as the terms of the shared loss agreements mature. FDIC officials stated that the acquiring institutions were being monitored for compliance with the terms and conditions of the shared loss agreements. FDIC is issuing guidance to the acquiring institutions reminding them of the terms to prevent increased shared loss payments as these agreements mature and expire.

FDIC Used Shared Loss Agreements to Attract Bidders for Failed Banks

For most of FDIC’s history, purchase and assumption transactions (the direct sale of a failed bank to another, healthier bank) have been the preferred resolution method for failed banks. FDIC has said that such sales are generally less costly than directly paying off depositors of the failed bank and keep customers with insured deposits from suffering any loss of service.⁶¹ FDIC strives to effect a whole bank purchase and assumption agreement, in which essentially all of the failed bank’s deposits, assets, and certain liabilities are sold and transferred to the acquiring institution.⁶² From January 2008 through December 31, 2011, FDIC was appointed as receiver for the 414 failed banks, with \$662 billion in book value of failed bank assets. FDIC used purchase and assumption agreements to resolve 394 failed institutions amounting to approximately \$652 billion in failed institution assets, which represents 98 percent of the total assets of failed banks and thrifts since 2008 (see fig. 4).

Figure 4: FDIC’s Resolution Methods, 2008-2011

Resolution type	Number of failed banks	Total assets (dollars in billions)
Purchase and assumption	394	\$652
Direct payout and insured deposit transfers	20	10
Total	414	\$662

Source: GAO analysis of FDIC data.

⁶¹A bank we spoke with expressed concern that failed banks acquired via shared loss agreements had negatively impacted competition because the acquired banks received significant loss coverage on potential credit losses that peer banks did not. We discuss these views later in the report.

⁶²In a whole bank purchase and assumption agreement, the acquiring institution typically assumes all of the deposits and essentially all of the assets of the failed institution.

However, FDIC was only able to resolve so many of these banks with purchase and assumption agreements because it offered to share in the losses incurred by the acquiring institution. According to FDIC officials, at the height of the financial crisis in 2008, FDIC sought bids for whole bank purchase and assumption agreements with little success. Potential acquiring banks we interviewed told us that they did not have sufficient capital to take on the additional risks that the failed institutions' assets represented. Because shared loss agreements had worked well during the savings and loan crisis of the 1980s and early 1990s, FDIC decided to use this method to solicit bids to provide potential buyers some protection on the purchase of failed bank assets, reduce immediate cash needs, keep assets in the private sector, and minimize disruptions to banking customers.⁶³ Under the agreements, FDIC generally agrees to pay 80 percent for covered losses with the acquiring bank covering the remaining 20 percent.⁶⁴

From 2008 to the end of 2011, FDIC resolved 281 of the 414 failures (68 percent) by providing a shared loss agreement (see fig. 5).⁶⁵ Banks that we spoke to said that, because of uncertainties in the market and the value of the assets, they would not have purchased the failed banks without FDIC's shared loss agreements. By comparing the estimated cost of the shared loss agreements versus the estimated cost of directly liquidating the failed bank, FDIC claims that the use of shared loss agreements saved the DIF over \$40 billion.

⁶³The majority of the commercial and residential loan assets are purchased under shared loss agreements, where FDIC agrees to share in future losses and recoveries experienced by the acquirer on those assets covered under the agreement.

⁶⁴Losses on the covered assets are shared between the acquirer and FDIC in its receivership capacity of the failed institution when losses occur through the sale, foreclosure, loan modification, or charge-off of loans in accordance with terms of the shared loss agreements. The majority of the agreements are for 8 to 10 years.

⁶⁵The agreements covered about \$135 billion of total remaining covered assets purchased by the acquiring institutions as of December 31, 2011.

Figure 5: Shared Loss Agreements Entered into by Year, 2008-2011

Year	Number of shared loss agreements	Estimated lifetime losses (dollars in billions)
2008	3	\$3.29
2009	90	19.92
2010	130	15.98
2011	58	3.65
Total	281	\$42.84

Source: GAO analysis of FDIC data.

In 2012, FDIC has been able to resolve more failed institutions without having to offer to share in the losses. For example, year to date as of September 30, 2012, there had been 43 bank failures, and FDIC has only had to agree to share losses on 18 of those failures (42 percent). Additionally, some potential bidders were willing to accept shared loss agreements with lower than 80-percent coverage.

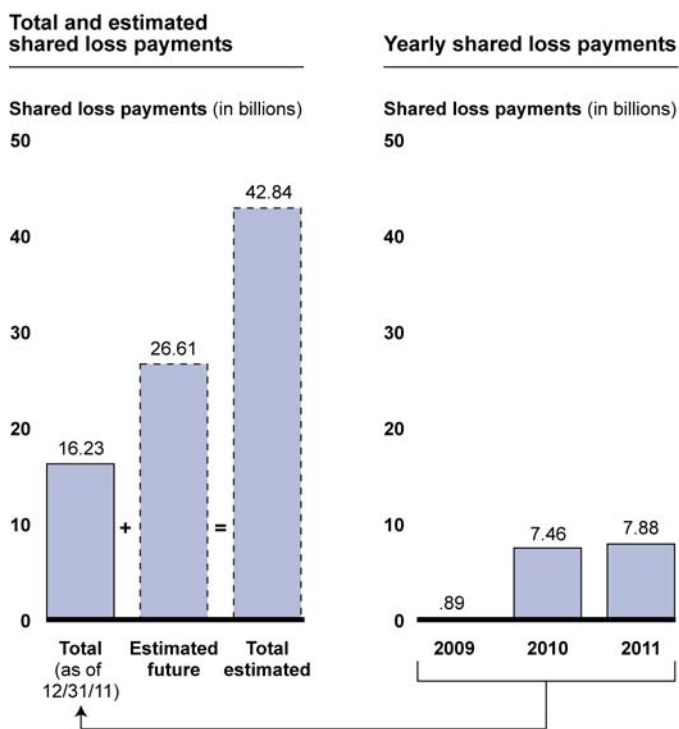
FDIC Monitors Acquiring Institutions' Adherence to Agreements' Terms and Conditions

FDIC officials stated that the acquiring institutions were being monitored for compliance with the terms and conditions of the shared loss agreements. As shown in figure 6, FDIC estimated the DIF receiverships would have to pay \$42.8 billion over the life of the agreements.⁶⁶ As of the end of 2011, FDIC had paid out about \$16.2 billion under the agreements, and FDIC estimated it would have to pay an additional \$26.6 billion over the life of the agreements. Shared loss payment claims may be submitted unevenly over the life of the agreements. FDIC estimates that most of those losses will be experienced at the beginning of the agreement and will increase somewhat in the final year of the agreement. For financial reporting purposes for year-end 2012, for example, FDIC assumes in its commercial shared loss agreement that 40 percent of the lifetime losses occur in the first year and approximately 18 percent occur in the 5th and final year of the agreement. FDIC officials stated that they monitor the agreements to ensure the acquirer is adhering to the terms and conditions for proper loss recognition. Additionally, FDIC is issuing guidance reminding them of the terms of the agreements to prevent an

⁶⁶Any shared loss payments are made from receivership funds from the specific failed institution or, if those are insufficient, from the DIF.

increase in shared loss payments as the agreements mature and expire due to inappropriate loss claims. The uneven claims do not change the total estimated lifetime losses, but affect the year in which the losses are incurred. FDIC revises its estimate of lifetime losses for financial reporting (and management purposes) each year based on current market conditions.

Figure 6: Estimated Lifetime Losses and Yearly Shared Loss Payments, 2008-2011



Source: GAO analysis of FDIC data.

Impact of Bank Failures on Local Communities Was Mixed

The acquisitions of failed banks by healthy institutions may have mitigated the potentially negative effects of bank failures on communities, although the focus of local lending and philanthropy may have shifted. First, while bank failures and failed bank acquisitions can increase market concentration—thereby potentially impacting banks’ ability to exercise market power, such as raising prices or reducing availability of some products and services,—our analysis suggests that a limited number of metropolitan areas and rural counties were likely to have become significantly more concentrated. This is because in many instances the failed banks were acquired by out-of-market institutions. Second, our analysis of call report data from 2007 to 2011 found that failing small

banks extended progressively less net credit as they approached failure, but that acquiring banks generally increased net credit as measured by changes in loan balances. However, officials of acquiring banks and surviving peer banks of failed banks in Georgia, Nevada, and Michigan we interviewed noted that in the wake of the bank failures, underwriting standards had tightened and thus credit was generally more readily available for small business owners who had better credit histories and stronger financials than for those who did not. Further, several bank officials said that new lending in certain kinds of loans was restricted in certain areas, such as collateral dependent loans in areas where asset values declined severely. Third, regulators, banking associations, and banks we spoke with said that involvement in local philanthropy declined as small banks approached failure but generally increased after acquisition. However, these acquiring banks may not focus on the same philanthropic activities as the failed bank did. Finally, our analysis of personal income, unemployment, house prices, and bank failures in states from 1994 to 2011 suggests that bank failures are more likely to affect the real estate sector in a state than the labor market or overall economy in a state.

With Exceptions, Bank Failures Have Not Resulted in Significant Increases in Local Market Concentration

Bank failures and failed bank acquisitions had a significant impact on market concentration in a limited number of metropolitan areas and rural counties. Market concentration is an indicator of the extent to which firms in the market can have the potential to exercise market power—that is, raise prices, reduce output, diminish innovation, or otherwise harm customers as a result of diminished competitive constraints or incentives. Bank failures and failed bank acquisitions have the potential to affect market concentration—and thus market power—in some metropolitan areas and rural counties. Of the 414 banks that failed in the period from January 1, 2008, to December 31, 2011, 393 were acquired by other banks. In some cases, the failed bank was acquired by a bank with branches in some of the same geographic areas as the failed bank’s branches, thereby changing the numbers and relative sizes of banks doing business in those areas. The failures of the 21 banks that were not acquired also led to changes in the numbers and relative sizes of the banks that remained in the areas where the failed banks had been located. As a result, these bank failures and failed bank acquisitions had the potential to affect banking market concentration and the cost and availability of credit and other banking services.

Federal and state banking regulators and national and state community banking organizations we interviewed generally agreed that the impact of

a small bank failure in an urban area would likely differ from the impact of failure in a rural area. Urban areas typically have a number of financial institutions, including other small banks, which can meet the community's needs if one community bank fails. But several interviewees stated that the severity of the effect of a bank failure on a rural county with just one bank whose branches were located entirely within the county would likely depend on whether the bank was acquired or the bank's assets were liquidated through a direct payout. If a bank was resolved through a direct payout, the community might find it had less access to credit and other banking services than it would have if the failed bank were purchased by a healthy bank.

However, our analysis showed that market concentration likely increased after a bank failure and acquisition in a small percentage of both urban and rural communities.⁶⁷ We analyzed the impact of bank failures and failed bank acquisitions on local credit markets using data for the period from June 2007 to June 2012 to calculate the Herfindahl-Hirschman Index (HHI), a key statistical measure used to assess market concentration and the potential for firms to exercise their ability to influence market prices.⁶⁸ The HHI reflects the number of firms in the industry and each firm's market share. It is calculated by summing the squares of the market shares of each firm competing in the market. The HHI also reflects the distribution of market shares of the top firms and the composition of the market outside the top firms. The HHI is measured on a scale of 0 to 10,000, with larger values indicating more concentration. According to the Department of Justice (DOJ) and the Federal Trade Commission (FTC), markets in which the value of the HHI is between 1,500 and 2,500 points are considered to be moderately concentrated, and those in which the value of the HHI is in excess of 2,500 points are considered to be highly concentrated, although other factors also play a role.

⁶⁷Appendix I contains a complete description of our analysis.

⁶⁸The HHI is one of the measures of market concentration that government agencies, including DOJ and FTC, use to enforce U.S. antitrust laws. DOJ and FTC often calculate the HHI as the first step in providing insight into potentially anticompetitive conditions in an industry. However, the HHI is a function of firms' market shares, and market shares may not fully reflect the competitive significance of firms in the market. Thus, DOJ and FTC use the HHI in combination with other evidence of competitive effects when evaluating market concentration.

We estimated the difference between pre- and postfailure HHIs for each local market as of June 30 of each year from 2007 to 2011 using deposits to measure banks' market shares.⁶⁹ We defined local markets as metropolitan statistical areas and micropolitan statistical areas (collectively, metropolitan areas) and rural counties (counties that are not components of metropolitan areas) as identified by the Census Bureau as of December 2009.⁷⁰ Table 3 summarizes the number of markets where at least one deposit-taking branch of a failed bank was doing business as of June 30 of each year from 2007 to 2011 and the number of markets in which the difference between pre- and postfailure HHI was at least 100 and the postfailure HHI was 1,500 or more, the benchmark for raising significant competitive concerns. Our results suggest that a small number of the markets affected by bank failures and failed bank acquisitions were likely to have become significantly more concentrated. For example, 8 of the 188 metropolitan areas affected by bank failures and failed bank acquisitions between June 30, 2009, and June 29, 2010, met the criteria for raising significant competitive concerns. Similarly, 5 of the 68 rural counties affected by bank failures during the same time period met the same criteria. Our analysis also showed that in most markets, bank failures and failed bank acquisitions were likely to have no impact on market concentration. For example, 120 of the 188 metropolitan areas affected by bank failures between June 30, 2009, and June 29, 2010, likely experienced no change in market concentration as a result of those failures and acquisitions. Similarly, 62 of the 68 rural counties affected by bank failures and failed bank acquisitions during the same period likely experienced no change in concentration as a result. The failed banks in these markets were acquired by banks that had not previously been operating in the markets, so the failures and acquisitions had no impact on market concentration in the area. In general, a small number of

⁶⁹We calculated the prefailure HHI for June 30 of each year using banks' market shares as of June 30 of each year. We calculated the postfailure HHI for June 30 of each year assuming that the bank failures and failed bank acquisitions that occurred over the next 12 months occurred at the beginning of the period. Although we included failed banks of all sizes in this analysis, over 90 percent of the bank failures were of small banks.

⁷⁰Metropolitan and micropolitan statistical areas are geographic entities defined by the Office of Management and Budget for use by federal statistical agencies in collecting, tabulating and publishing federal statistics. A metro area contains a core urban of 50,000 or more population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population. Each metro or micro area consists of one or more counties and includes the counties in the core urban area, as well as any adjacent counties that have a high degree of social and economic integration with the urban core.

markets were likely to become significantly more concentrated as a result of the bank failures and bank acquisitions because, in most instances, the acquiring bank was a bank that had not previously been operating in the community.

Table 3: Impact of Bank Failures and Failed Bank Acquisitions on Market Concentration, 2007-2012

	June 30, 2007- June 29, 2008	June 30, 2008- June 29, 2009	June 30, 2009- June 29, 2010	June 30, 2010- June 29, 2011	June 30, 2011- June 29, 2012
Metropolitan areas	942	942	942	942	942
Number with bank failures	4	150	188	124	102
Number with changes in market concentration that are consistent with potentially significant competitive effects from bank failures and failed bank acquisitions	0	6	8	3	8
Number with changes in concentration that are not consistent with potentially competitive effects from bank failures and failed bank acquisitions	0	45	60	31	28
Number with no change in concentration from bank failures and failed bank acquisitions	4	99	120	90	66
Rural counties	1331	1331	1331	1331	1331
Number with bank failures	2	31 ^a	68	32	45
Number with changes in concentration that are consistent with potentially significant competitive effects from bank failures and failed bank acquisitions	0	7	5	5	5
Number with changes in concentration that are not consistent with potentially competitive effects from bank failures and failed bank acquisitions	0	3	1	0	3
Number with no change in concentration and failed bank acquisitions	2	21	62	27	37

Source: GAO analysis of Census Bureau, FDIC, and OCC data.

Note: A market had a failed bank if one or more banks with deposits in that market as of June 30 failed over the next 12 months. The change in concentration is the difference between the pre- and post-failure HHI. The pre-failure HHI for each year is the HHI calculated using banks' market shares as of June 30 of each year. The post-failure HHI is the HHI calculated as of June 30 of each year assuming that all the bank failures and failed bank acquisitions that occurred over the next 12 months occurred at the beginning of the period. Markets with changes in concentration that are consistent with potentially significant competitive effects of bank failures and failed bank acquisitions are those in which the post-failure HHI is at least 1,500 and the difference between the pre- and post-failure HHI is at least 100. Markets with no change in concentration are those in which difference between and pre- and post-failure HHI is zero. Markets with changes in concentration that are not consistent with potentially significant competitive effects of bank failures and failed bank acquisitions are those in which the difference between the pre- and post-failure HHI is greater than zero but either the post-failure HHI is less than 1,500 or the difference between the pre- and post-failure HHI is less than 100. We used a bank's share of total deposits in a market to measure its market share in that market. However, a bank's share of total deposits in a market may be measured with error, depending upon

how banks allocate deposits to their branches when reporting branch level deposits. Furthermore, a bank's share of total deposits in a market may not reflect its share of the market for other banking products and services. In addition, this table focuses on the impact of bank failures and failed bank acquisitions on market concentration, but many other factors contribute to the actual amount of concentration in a market. Finally, the HHI can only indicate the potential for firms to exercise market power and it does not imply that firms will actually choose to exercise market power if they have it.

³Number includes Glascock, GA, because the one bank doing business in that county on June 30, 2008, failed and was not acquired by another bank in the next 12 months.

Although the number of markets with potentially significant competitive effects is small, households and businesses in those markets may face higher prices or reduced availability of at least some banking products and services. These competitive effects are more likely to impact banking products and services that are more local in scope, such as checking account services or lines of credit. However, customers may be able to obtain some products and services from banks outside their local market, and the extent to which the market for any particular banking product or service is local as opposed to regional, national, or even international, is likely to vary.

Our analysis of market concentration has limitations and thus should be interpreted with caution. In particular, a bank's share of total deposits in a market may be measured with some error, depending upon how banks allocate deposits to their branches when reporting branch-level deposits to FDIC. Furthermore, a bank's share of total deposits in a market may not reflect its share of the market for other banking products and services. In addition, our analysis focuses on the impact of bank failures and failed bank acquisitions on market concentration. However, many other factors contribute to the actual amount of concentration in a market, including changes in banks' business models over time, fluctuations in consumer demand, and entry into and exit from the market by non-bank financial institutions. Finally, the HHI can only indicate the potential for firms to exercise market power and does not imply that firms will actually choose to exercise market power if they have it.

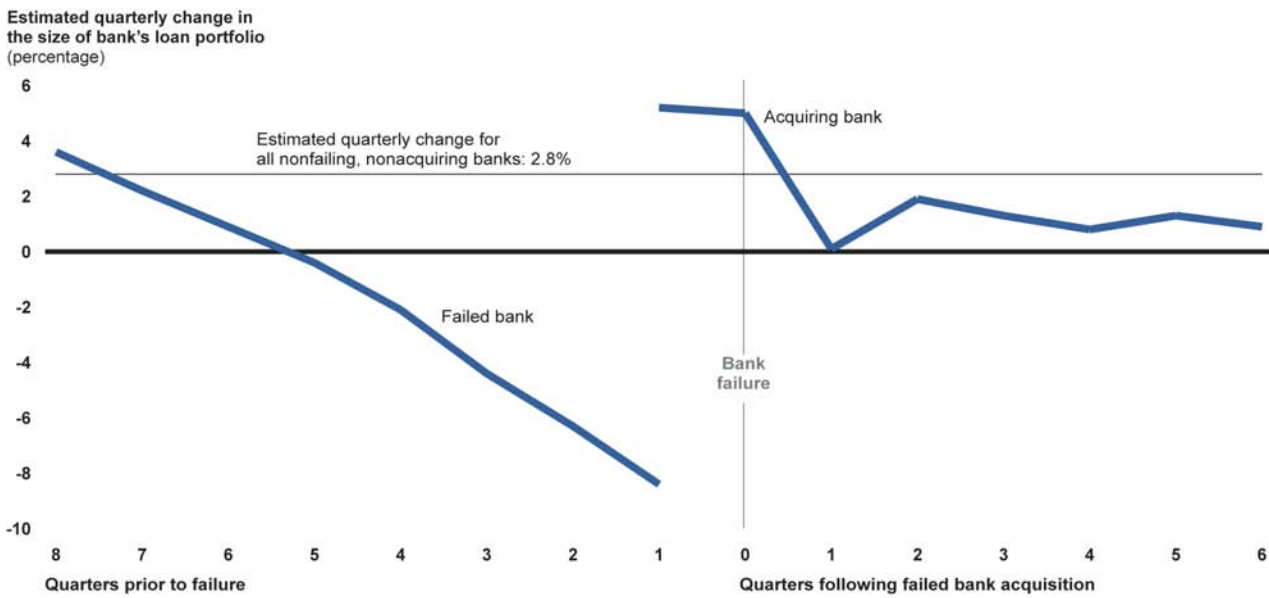
Acquiring Banks Mitigated the Decline in Credit Extension Due to Failing Institutions

The amount of credit extended by failing banks fell as the banks approached failure and their balance sheets deteriorated, but the amount of credit extended by acquiring banks remained positive even after the acquisition of a failed bank. We used FDIC and Federal Financial Institutions Examination Council (FFIEC) data from 2006 through 2011 to estimate the net credit that all failing banks extended in the quarters

before they failed and by acquiring banks in the quarters following their acquisition of a failed bank.⁷¹ Estimates from our modeling procedure suggest that, on average, net credit extended by banks that failed in the period from 2008 to 2011 decreased continuously over the eight quarters prior to failure and became negative about five quarters prior to failure, indicating that failing banks were contracting and reducing the overall amount of credit they provided (see fig. 7). Our estimates also suggest that net credit extended by banks that acquired failed banks during the same period generally decreased immediately after the acquisition and then partially recovered, but always remained positive. It follows that, on average, acquiring banks continued to expand the amount of credit they made available, albeit more slowly than they did prior to the acquisition of the failed bank.

⁷¹We used an econometric model to estimate net credit extended by banks during a quarter as a function of the capital adequacy; asset quality; earnings; liquidity; ADC lending; non-farm, non-residential real estate lending; multifamily real estate lending; commercial real estate lending not secured by real estate; brokered deposits; size; and other factors. We also included indicators for each quarter to control for factors affecting the likelihood of failure that are common to all banks at the same time, such as the regulatory environment, the state of the market for bank products and services, and the condition of the overall economy. We then used the results of our model to predict net credit extended by failing banks in the quarters leading up to their failure and by acquiring banks in the quarters following acquisition of a failed bank. See appendix VII for more information on our econometric model.

Figure 7: Estimated Net Credit Extended by Failing, Acquiring, and Nonfailing, Nonacquiring Banks, 2008-2011



Source: GAO analysis of FDIC and FFIEC data.

Note: Net credit extended by a bank in a quarter is calculated as the percent change in the size of the bank's loan portfolio over the quarter and thus reflects the overall effect of actions that increase the size of a bank's loan portfolio, such as originating new loans or purchasing loans, and actions that decrease the size of a bank's loan portfolio, such as charging off delinquent loans or selling loans. Estimates reflect average relationships between bank characteristics and net credit extended by banks for all of the observations we used and thus may not reflect trends in net credit extended by any one bank.

To examine the robustness of our results, we repeated our analysis for small and medium-sized banks as separate groups. Our estimates for small and medium-size banks suggest that net credit extended by failed banks in these categories followed a pattern similar to that shown in figure 7, declining continuously in the quarters preceding failure and becoming negative four to five quarters before failure. Net credit extended by small acquiring banks declined on average immediately following the acquisition of a failed bank and then partially recovered, but remained positive except in the first quarter following the acquisition. For medium-sized acquiring banks, net credit appears to have declined more slowly following the acquisition of a failed bank, remaining positive for several quarters but actually becoming negative around a year after acquiring the failed bank. Overall, however, our estimates suggest that failing banks extend less and less credit as they fail and that acquiring banks continue to extend additional credit after they acquire a failed bank.

Our results likely reflect both factors that are generally associated with net credit extended by banks and factors that are specific to the particular time period we analyzed. Thus, the extent to which our results can be generalized to other time periods is limited. Furthermore, our results reflect average relationships between bank characteristics and net credit extended by banks for all of the observations we used. As such, they may not reflect the particular circumstances of any one bank. In addition, we note that the list of characteristics we analyzed is meant to highlight important characteristics of banks that are related to the provision of credit, but many other factors—including demand for credit by borrowers—play a role in the net amount of credit a bank extends and our list of characteristics is not exhaustive. Finally, we used the change in the size of a bank’s loan portfolio over a quarter to measure the net amount of credit it extended over that quarter. However, several factors affect the size of a bank’s loan portfolio outside of making new loans, including charging off delinquent loans.⁷² Thus, the change in the size of a bank’s loan portfolio is a measure of the net effect of increases in the amount of credit a bank is extending, but it is an imperfect proxy for new loan originations.

According to Interviews with Banks, Acquisitions Generally Mitigated Other Potential Impacts of Small Bank Failures on Communities

We interviewed officials of selected acquiring banks of small failed banks and open peers of these banks that were their competitors (peers) in Georgia, Nevada, and Michigan to learn about the effects of the failures on local communities in those states. According to banks in urban and rural areas in the three states that we interviewed, acquisitions of failed small banks mitigated some potential negative effects on the cost and availability of credit and on philanthropic contributions in these communities. For example, officials from acquiring banks in the three states we interviewed told us that, since taking over the failed banks, they had increased lending and noted that the failed banks had generally ceased making new loans in the community prior to their failures. Several acquiring and peer banks in the three states said that credit was more readily available for small business owners who had good credit histories

⁷²For example, the loan portfolio grows when the bank makes new loans or purchases existing loans. It shrinks when the bank charges off a delinquent loan; when the bank forecloses on a delinquent real estate loan, charges off the difference between the market and face values of the loan, and reclassifies the collateral as “other real estate owned;” and when a the bank sells or securitizes a loan. It also changes when loans are paid down, extended, or repurchased.

and strong financials. Several acquiring and peer banks in the three states we interviewed noted that in the wake of the bank failures, underwriting standards had tightened, making it harder for some borrowers who may have been able to obtain loans prior to the bank failures than to obtain them afterward.⁷³ For example, several bankers said that they would not consider making new loans to small business owners with weak credit histories. Several banks we interviewed also said that finding new high-quality borrowers was difficult.

However, the bankers we interviewed also said that new lending for certain types of loans could be restricted in certain areas. Bankers in all three states said that the CRE market, and in particular the ADC market, had contracted, and new lending in this area had declined significantly. For example, one acquiring banker in the Atlanta area said that upon acquiring the failed bank it made all of its lending products available, thus considerably expanding the types of credit available to the community. However, this banker said that the bank no longer made new CRE loans and that much of the growth in new lending had been in small business and commercial and industrial lending. This banker also noted that ADC lending had largely ceased in the Atlanta area and that CRE loans were now focused on owner-occupied properties, which are considered less risky than other types of CRE loans.

Several acquiring and peer banks in the three states stated that weak demand due to economic uncertainty, particularly among high quality borrowers, was inhibiting growth in new loans.⁷⁴ A few banks in the three states noted that competition, particularly for customers with good credit has pushed interest rates to lower levels. However, one bank in Michigan noted that even with the lack of demand for credit, larger acquiring banks tended to bring more products and services to the community.

⁷³Our results are not generalizable to all local communities that experienced small bank failures.

⁷⁴We attempted to contact groups representing small businesses in the communities that were part of our sample to obtain their views on credit availability and loan demand, but did not receive any responses. However, a recent survey conducted by the National Federation of Independent Business noted that 90 percent of 740 small business owners surveyed reported that all their credit needs were met or that they were not interested in borrowing. National Federation of Independent Business, *"Small Business Economic Trends"* survey (July 2012).

One peer bank in Georgia indicated that failed banks acquired via shared loss agreements had negatively impacted competition because the acquired banks received significant loss coverage on potential credit losses that peer banks did not. This bank said that it might have to absorb larger credit losses than acquiring banks for comparable loans. For example, this bank said that the acquiring banks had driven down real estate values in the local market by selling off assets such as collateralized loans covered by shared loss agreements at depressed prices. As a result of these sales, existing collateralized assets might have to be reappraised at the lower values, possibly leading to further credit losses. However, officials of several acquiring banks told us that the shared loss agreements gave them more time to work out problem loans held by existing customers and allowed them to hold onto the assets.⁷⁵

Federal and state banking regulators, national and state banking associations, and acquiring and existing bank officials we interviewed in Georgia, Nevada, and Michigan told us that involvement in local philanthropy declines as community banks approach failure but generally increases after they have been acquired. State banking regulators and national and state community banking associations we interviewed told us that failed community banks were highly involved in local philanthropic activities before the recession—for example, by designating portions of their earnings for community development or other charitable activities. Many community bank board members and managers were leaders in the community who supported local charities and civic groups. Acquiring bank officials we interviewed told us that they had generally increased philanthropic activities compared to the failed community banks during the economic downturn and in the months before failure. However, acquiring banks may or may not focus on the same philanthropic activities as the failed banks. For example, one large acquiring bank official told us that it made major charitable contributions to large national or statewide philanthropic organizations and causes and focused less on the local community charities to which the failed bank had contributed. However, another acquirer told us that by retaining the failed bank’s employees, it

⁷⁵The FDIC IG is required under Pub. L. No. 112-88 to evaluate, among other things, the impact of shared loss agreements on existing banks and the borrowers of banks that fail, including FDIC’s policies and procedures for monitoring LSAs, including those designed to ensure institutions are not imprudently selling assets at a depressed value and the extent to which LSAs provide incentives for loan modifications and other means of increasing the probability of commercial assets being considered performing.

had been able to continue contributing to the charities the employees had previously selected.

Bank Failures in a State Are More Likely to Affect the Real Estate Sector Than the Labor Market or Broader Economy

To assess the relationship between bank failures and overall economic conditions in a state, we used an econometric model to analyze the relationships among four variables—bank failures, income, unemployment, and real estate prices—for U.S. states and the District of Columbia (states) using data for the period from 1994 through 2011.⁷⁶ Our results are limited by several factors and thus should be interpreted with caution. First the econometric procedure we used is a useful diagnostic tool but it is based largely on timing patterns in the variables as opposed to actual causality. Second, as with the results of our other analyses, they may not generalize to other time periods or, in this case, to the national, city, or county level. Third, the model reflects average relationships among the variables and thus may not apply to the specific circumstances of any one state. Finally, the specific group of variables we analyzed was chosen to highlight particular relationships and may not contain all of the variables that contribute to explaining personal income, unemployment, house prices, or failed bank deposits in states.

Our analysis suggests that bank failures in a state were more likely to affect its real estate sector than its labor market or broader economy. The results suggest that failed banks' share of deposits in a state—our measure for bank failures—do not impact personal income in a state in the sense that past values of failed banks' share of deposits do not help explain the current level of personal income in a state (table 4).⁷⁷ Similarly, past values of personal income in a state do not appear to help explain the current value of failed banks' share of deposits in a state. In particular, this analysis did not suggest that bank failures in a state were associated with a decline in personal income in that state.

⁷⁶Although we included failed banks of all sizes in this analysis, over 90 percent of the bank failures were of small banks.

⁷⁷Our measure of bank failures captures both the size of the failing banks and their share of the deposits (a proxy for their weight in a state), whereas the absolute number of failures or the simple failure rate does not. We used the concept of Granger causality to determine the extent to which variables are associated with each other. Granger causality measures whether the current value of one variable is correlated with past values of another variable, but it does not imply that one variable is the result of or the effect of another variable. See appendix VIII.

Table 4: Summary of Relationships among Bank Failures, Personal Income, Unemployment, and Real Estate Prices in U.S. States, 1994-2011

Variable	Variable may be explained in part by past values of			
	Personal income	Unemployment	house prices	Failed bank deposits
Personal income	—	Yes	In some specifications	No
Unemployment	Yes	—	In some specifications	No
House prices	In some specifications	Yes	—	Yes
Failed bank deposits	No	Yes	Yes	—

Source: GAO analysis of data from the Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Deposit Insurance Corporation, and the Federal Housing Finance Agency.

Note: The extent to which our results can be generalized to other time periods or other geographic units—either larger units, such as nations, or smaller units, such as cities or counties—is limited.

To the extent that there is a relationship between the unemployment rate and failed banks’ share of deposits in a state, it appears that the unemployment rate has more bearing on failed banks’ share of deposits than vice versa. Past values of the unemployment rate appear to partially explain the current value of failed banks’ share of deposits. However, we did not find evidence that past values of failed banks’ share of deposits in a state help explain the current value of the unemployment rate.

Failed banks’ share of deposits and the house price index in a state appear to be significantly related to each other. Past values of failed banks’ share of deposits appear to help explain the current value of the house price index in a state, and vice versa. Altogether, these results suggest that the impact of bank failures on a state’s economy is most likely to appear in the real estate sector and are less likely to appear in the overall labor market or in the broader economy.

Agency Comments

We provided a draft of this report to the Federal Reserve, FDIC, and OCC for review and comment. The agencies did not provide formal written comments, but provided written technical comments, which we incorporated as appropriate.

We are sending this report to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services. We are also sending copies of the report to the Federal Reserve, FDIC, and OCC. The report also is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact Lawrence Evans, Jr. at (202) 512-4802 or evansl@gao.gov. Contact points for our Offices of Public Affairs and Congressional Relations may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IX.

A handwritten signature in black ink that reads "Gene L. Dodaro". The signature is written in a cursive style with a large, prominent initial "D".

Gene L. Dodaro
Comptroller General of the United States

Appendix I: Objectives, Scope and Methodology

The objectives of our report were to review (1) the factors that contributed to the failure of banks in states with 10 or more failures between 2008 and 2011, including the extent to which losses related to fair value accounting treatment affected the regulatory capital positions of failed banks; (2) market factors that affected the Federal Deposit Insurance Corporation's (FDIC) choice of resolution method, or the amount of FDIC coverage offered on the shared loss agreements, and the costs that the DIF incurred as a result of these shared loss agreements; and (3) the effect of recent small bank failures on local communities.

To address the factors that contributed to the failures of banks in states with 10 or more failures between 2008 and 2011, including the extent to which losses related to fair value accounting treatment affected the regulatory capital positions of failed banks, we used data from FDIC's Historical Statistics on Banking—Failures and Assistance Transactions (HSOB) database to identify states that met the criterion. We identified 10 states that experienced 10 or more failures (the 10 states) over the relevant time period. We then used data from the HSOB database to develop characteristics that described the failed banks in these 10 states, such as asset size, charter type, bank type, length of operations and failed bank assets as a percentage of total assets. We reviewed material loss reviews (MLR), failed bank reviews (FBR), and in-depth reviews (IDR) issued by the inspectors general (IG) of the federal banking regulators for these same institutions and summarized the factors they identified as contributing to the failures.¹ We then used data from FDIC's

¹Section 38(k) of the Federal Deposit Insurance Act (FDI Act) requires that the inspector general of the appropriate federal banking agency complete an MLR of the agency's supervision of a failed institution when the projected loss to the DIF is material to, among other things, ascertain why the institution's problems resulted in a material loss to the DIF. 12 U.S.C. § 1831o(k). Prior to the enactment of the Dodd-Frank Wall Street and Consumer Protection Act (Dodd-Frank Act) on July 21, 2010, the FDI Act defined a material loss to the DIF as the greater of \$25 million or 2 percent of the institution's total assets. The Dodd-Frank Act amended the FDI Act to define a material loss to the DIF for the period January 1, 2010, to December 31, 2011, as an estimated loss in excess of \$200 million; for the period January 1, 2012, to December 31, 2013, as an estimated loss in excess of \$150 million; and on or after January 1, 2014, as an estimated loss in excess of \$50 million. Pub. L. No. 111-203, § 987. The Dodd-Frank Act also created new reporting requirements—the failed bank report, or FBR—for failures that resulted in losses below the "material loss" threshold. The inspector general, every six months, shall conduct FBRs to determine the grounds identified by the federal banking agency or state bank supervisor for appointing FDIC as receiver, and whether any "unusual circumstances" exist that might warrant an IDR of the loss. If an IDR is warranted, the inspector general must prepare the IDR consistent with the requirements of an MLR.

Statistics on Depository Institutions (SDI) database to develop trend statistics for the period 2001 through 2011 that described bank characteristics in the years leading up to the failures for these institutions. In conducting our analyses, we carried out a data reliability assessment of the HSOB and SDI databases. To do so, we reviewed information on the processes and procedures FDIC uses to help ensure that data entered into these databases are accurate and complete. We also reviewed the data for missing values, and, where we observed instances of such, determined the reason. On the basis of this information, we determined that these data were reliable for our purposes. We also interviewed officials from FDIC, the Board of Governors of the Federal Reserve System, and the Office of the Comptroller of the Currency (federal banking regulators), state banking regulators from the 10 states, national banking organizations, state community banking organizations from 7 of the 10 states, and market experts to obtain their views on the causes of bank failures in the 10 states.²

We also estimated, as a function of the bank characteristics discussed above, the likelihood that a bank might fail. More specifically, we analyzed nationwide data from FDIC and Federal Financial Institutions Examination Council (call report data) on FDIC-insured commercial banks and state-chartered savings banks for the period from 2006 through 2011.³ We examined characteristics that describe a bank's capital adequacy, asset quality, earnings, liquidity, CRE lending, brokered deposits funding, and size. We used econometric models to estimate the relationships between these characteristics and the likelihood that a bank fails.⁴ We included indicators for each quarter to control for factors affecting the likelihood of failure that are common to all banks at the same time, such as changes in the regulatory environment, the market for bank products and services, and the overall economy. In conducting our analyses, we carried out a data reliability assessment of the FDIC and FFIEC call report data. To do so, we reviewed information on the processes and procedures used to help ensure that these data were complete and accurate. We also

²Three state banking associations declined our request for an interview.

³We excluded savings associations and insured branches of foreign banks from our analysis because these institutions did not report data on key variables for the time period we analyzed.

⁴We employed discrete-time hazard models. For more information on these econometric models, see appendix III.

reviewed the data for missing values, and, where we observed instances of such, determined the reason. On the basis of this information, we determined that these data were reliable for our purposes.

To address the extent to which losses related to fair value accounting treatment affected the regulatory capital positions of failed banks, we identified and reviewed those accounting standards under U.S. generally accepted accounting principles (GAAP) that pertain to fair value, historical cost, and impairment accounting and identified those assets and liabilities on banks' balance sheets that are subject to each. We also reviewed guidance issued by the federal banking regulators as to the application of these standards. We then analyzed bank call report and thrift financial data from 2007 through 2011 for failed and open commercial banks and thrifts nationwide to identify and compare trends in (1) the use of historical cost accounting and fair value accounting and (2) the extent to which losses were credit related. In conducting our analysis, we followed the methodology used by the Securities and Exchange Commission in their 2008 report on mark-to-market accounting, which examined the linkages that occurred between fair value accounting and bank failures that occurred in 2008.⁵ We also reviewed reports issued by the Department of the Treasury and the Financial Stability Forum's Working Group on Loss Provisioning to obtain views on the adequacy of current accounting models for loan loss provisioning and reviewed proposals issued by accounting standard setters to revise the current accounting model and comment letters received in response to these proposals. We provided a copy of the draft report to two accounting experts, a former comptroller general and a professor of accountancy for their review.

To address the market factors that affected FDIC's choice of resolution method, or the amount of FDIC coverage offered on shared loss agreements, and the costs the Deposit Insurance Fund (DIF) incurred as a result of the shared loss agreements, we first obtained and analyzed FDIC loss payment information from its New Financial Environment accounting system. To identify the future costs to the DIF that will result from shared loss agreements, we obtained and analyzed the estimate of lifetime losses that FDIC develops for each failed institution. We determined that these estimates were reliable for purposes of financial

⁵Securities and Exchange Commission, *Report and Recommendations Pursuant to Section 133 of the Emergency Economic Stabilization Act of 2008: Study on Mark-to-Market Accounting*, (December 2008).

reporting. Also, we interviewed FDIC officials and reviewed and summarized FDIC policies and procedures in order to assess how FDIC determined that shared loss agreements were the least costly method for resolving bank failures during this time period. In order to describe factors in the market environment from 2008 through 2011 that may have affected the choice of resolution method or the structure of FDIC shared loss agreements, we interviewed officials from federal banking regulators, state banking regulators from the 10 states, national banking organizations, state community banking organizations from 7 of the 10 states, and market experts.

To assess the effect of recent small bank failures on local communities, we first assessed the impact of nationwide bank failures and failed bank acquisitions on concentration in local credit markets using data for the period from June 2007 through June 2012 by calculating the Herfindahl-Hirschman Index (HHI)—a commonly used measure to assess the competitive environment and enforce U.S. antitrust laws. Market concentration is an indicator of the extent to which firms in the market can exercise market power, that is, to raise prices, reduce output, diminish innovation, or otherwise harm customers as a result of diminished competitive constraints or incentives. The HHI is equal to the sum of the squares of the market shares of each firm in the market and thus reflects both the number of firms in the market and each firm's relative size.⁶ The HHI ranges from 10,000 (if there is a single firm in the market) to a number approaching zero (in the case of a perfectly competitive market). Department of Justice (DOJ) and Federal Trade Commission (FTC) guidelines suggest that markets with an HHI of less than 1,500 are unconcentrated, those with HHIs between 1,500 and 2,500 are moderately concentrated, and those with HHIs greater than 2,500 are concentrated. They also suggest that a change in a market's HHI of 100 or more that results in an HHI of more than 1,500 may raise significant competitive concerns, while a change in a market's HHI of 200 or more that results in an HHI of 2,500 is presumed to be likely to enhance market power.

We compared the pre- and postfailure HHIs for each local market across the country as of June 30 of each year from 2007 through 2011. We

⁶For example, a market with four firms with market shares of 30 percent, 30 percent, 20 percent, and 20 percent would have an HHI of 2,600 (900 + 900 + 400 + 400).

defined local markets as metropolitan statistical areas and micropolitan statistical areas (collectively, metropolitan areas) and rural counties (counties that are not components of metropolitan areas) as identified by the Census Bureau as of December 2009. We used data on FDIC-insured institutions, including commercial banks, savings banks, savings associations, and insured branches of foreign banks from FDIC's Survey on Deposits database. We defined a banking organization as the collection of all banks that are subsidiaries of the same bank or thrift holding company, or the consolidated bank for those banks that are not subsidiaries of a holding company. We identified a banking organization as doing business in a market if at least one of the banks in that banking organization had at least one deposit-taking branch in that market.⁷ We used deposits to measure a banking organization's market share. We calculated the prefailure HHI for each local market as of June 30 of each year by summing the squared market shares of each banking organization doing business in that market as of that date. We calculated the postfailure HHIs for each local market by treating the bank failures and acquisitions that occurred during the period from June 30 of one year to June 29 of the next year as if they occurred at the beginning of the period. We assigned deposits in failed banks that were acquired to the acquiring bank, and we assigned deposits in failed banks that were not acquired to other banks in the market proportionally. Although we included failed banks of all sizes in this analysis, over 90 percent of the bank failures were of small banks, and thus the analysis largely reflects the impact of their failures on market concentration. In conducting our analyses, we carried out a data reliability assessment of the Survey on Deposits database. To do so, we reviewed information on the processes and procedures FDIC uses to help ensure that data entered into this database are accurate and complete. We also reviewed the data for missing values, and, where we observed instances of such, determined

⁷A branch is any location, or facility, of a financial institution, including its main office, where deposit accounts are opened, deposits are accepted, checks paid, and loans are granted. Branches include, but are not limited to, brick and mortar locations, detached drive-in facilities, seasonal offices, offices on military bases or government installations, paying/receiving stations or units, and Internet and Phone Banking locations where a customer can open accounts, make deposits and borrow money. A branch does not include automated teller machines (ATMs), consumer credit offices, contractual offices, customer bank communication terminals (CBCT), electronic fund transfer units (EFTU), or loan production offices (FDIC, Summary of Deposits Reporting Instructions, June 30, 2011).

the reason. On the basis of this information, we determined that these data were reliable for our purposes.

Our analysis of market concentration has limitations and thus should be interpreted with caution. In particular, a bank's share of total deposits in a market may be measured with some error, depending upon how banks allocate deposits to their branches when reporting branch-level deposits to FDIC. Furthermore, a bank's share of total deposits in a market may not reflect its share of the market for other banking products and services. In addition, our analysis focuses on the impact of bank failures and failed bank acquisitions on market concentration. However, many other factors contribute to the actual amount of concentration in a market, including changes in banks' business models over time, fluctuations in consumer demand, and entry into and exit from the market by non-bank financial institutions. Finally, the HHI can only indicate the potential for firms to exercise market power and does not imply that firms will actually choose to exercise market power in ways that are detrimental to consumers.

We also assessed the impact of bank failures on the availability of credit by using 2006-2011 call report data to estimate changes in the size of a bank's loan portfolio in the quarters leading up to failure for failed banks and in the quarters following acquisition of a failed bank (for acquiring banks). We used the change in the size of a bank's loan portfolio over a quarter as a proxy for the net amount of credit it extended over that quarter. The change in the size of a bank's loan portfolio over a quarter reflects the net effects of new loan originations, loan purchases, charge-offs, loan sales and securitizations, and other factors. As a result, it reflects net credit extended by a bank rather than the extension of new credit only. We first estimated the relationship between the characteristics of banks that were associated with the likelihood of failure and changes in the size of banks' loan portfolios. We then used our estimates to predict the average change in the size of a bank's loan portfolio in the quarters leading up to failure for failed banks and in the quarters following acquisition of a failed bank (for acquiring banks).⁸ We conducted this analysis for all banks, and then for small banks and medium-size banks. We did not conduct a separate analysis for large banks because there were insufficient observations.

⁸For more information on these econometric models, see appendix VII.

We assessed the relationship between bank failures and overall economic conditions in a state by analyzing the relationship between bank failures, income, unemployment, and real estate prices for U.S. states, including the District of Columbia, using data for the period from 1994 through 2011. We measured bank failures in a state as the fraction of deposits in a state that were in banks that failed during the past year using data from FDIC. Although we included failed banks of all sizes in this analysis, over 90 percent of the bank failures were of small banks, and thus the analysis largely reflects the impact of their failures. We measured income in a state using state personal income, adjusted for inflation, from the Bureau of Economic Analysis. We measured unemployment in a state using the unemployment rate from the Bureau of Labor Statistics. We measured real estate prices using house price indices for single-family detached properties with conventional conforming mortgages from FHFA. We assessed the reliability of data from each of these sources and found it to be sufficiently reliable for our purposes. For each variable, we estimated the relationship between the variable, its past values, and past values of the other three variables. We used a technique that controls for time-invariant characteristics of states, that controls for features of the national economy that affect all states at the same time, and that allows for the possibility that all four variables are jointly determined and affected by each other.⁹ We then estimated the likelihood that the past values of each variable help explain current values of the other variables.

We interviewed officials from federal banking regulators, state banking regulators from the 10 states, a national banking and community banking organizations, and state community banking organizations from 7 of the 10 states and market experts. We also conducted a cluster sampling of 10 failed small banks in three states and interviewed officials from 18 acquiring and existing peer banks of these failed banks to obtain their views of the effects of the failures on their communities.¹⁰ The three states we chose to focus on were Georgia, Nevada, and Michigan. The three states reflect the three major areas where the bank failures were concentrated—the southeast, southwest, and Midwest. They reflect

⁹For more information on the linear dynamic panel approach, see appendix VIII.

¹⁰We attempted to interview local organizations representing the perspective of small businesses that relied for credit on the failed banks in our sample, but the organizations did not respond to our interview requests.

states with either highest numbers of bank failures or highest failure rates. They also reflect the economic conditions that contributed to the bank failures—high unemployment rates, and for two states, high declines in house prices.

For each of the states selected, we selected several failed small banks within a targeted metropolitan area and nonmetropolitan area within the state. Reviewing several failed banks within the same state allowed us to more carefully evaluate the impact of other contributing factors associated with the failures, for example, size of the failed institution, purchase agreement terms, number of surrounding banks, characteristics of the acquiring bank, and feedback from nearby existing small banks without the complexities created by differences in economic climates that can occur across states.

In determining which failed banks to review, we obtained and reviewed data on the failed banks in these three states, as well as the acquiring banks (if the failed banks were not liquidated), and the peer banks that currently operate in the same geographic area as the failed banks. We focused on failed banks that were small banks, typically defined as banks with less than \$1 billion in assets. For each state, we chose at least three failed banks to target—two that failed within a metropolitan statistical area and one that failed in a nonmetropolitan statistical area. Within each state, to the extent possible we chose failed banks that represented different types of resolutions (whole bank purchase, whole bank purchase with a shared loss agreement, and liquidation) and different types of acquiring banks (other state chartered community banks, out of state regional banks, and national banks). Once we chose the failed banks to target, we then examined the population of existing peer banks within the same county or zip code; that is, other small banks. Our first priority was to choose peer banks that were headquartered in the same county, but if none existed, we looked for small banks from nearby counties or zip codes that had branches in the same community as the target failed bank.

We conducted this performance audit from February 2012 to December 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: FDIC Resolution Methods for Failed Institutions and the Least Cost Test Process

The Federal Deposit Insurance Corporation (FDIC) has two primary types of closing transactions, with multiple variations of both, to resolve failing institutions:

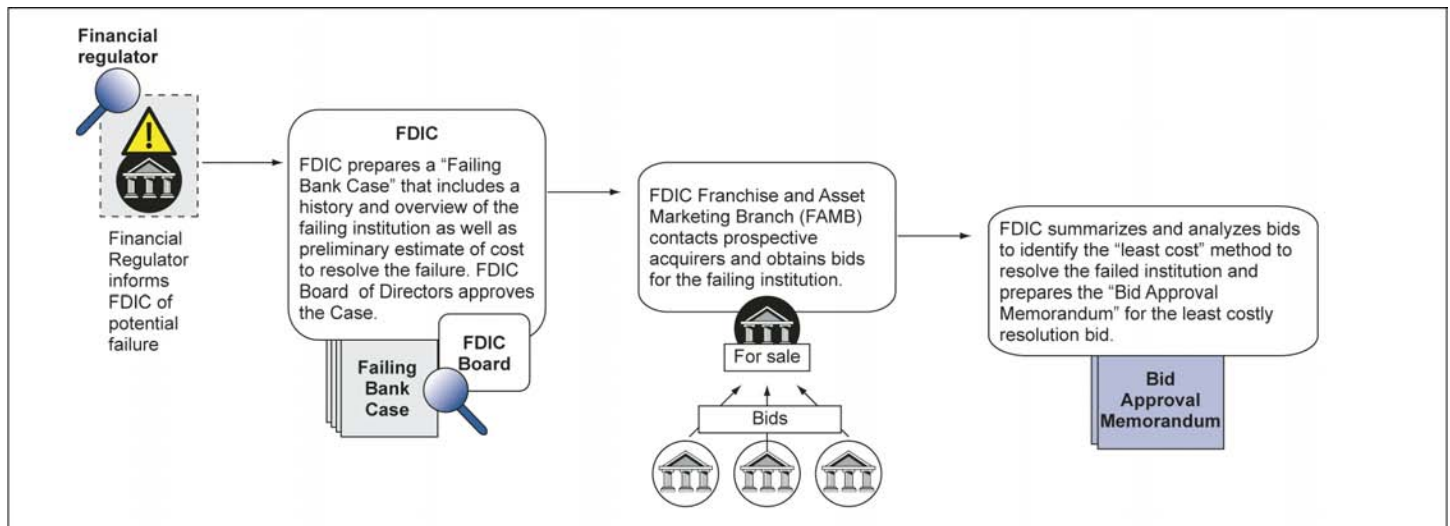
- Purchase and Assumption. A resolution transaction in which a healthy institution purchases some or all of the assets of the failed financial institution and assumes some or all of the liabilities, including all insured deposits.
 - Basic Purchase and Assumption. Assets transferring to the acquiring institution (AI) are limited to cash and cash-equivalents.
 - Modified Purchase and Assumption. Cash and a portion of the loan portfolio (loan pools) transfer to the acquiring institution.
 - Whole Bank Purchase and Assumption. The acquiring institution assumes essentially all assets and liabilities.
 - Whole Bank Purchase and Assumption with Shared loss Agreements (SLA). Specific assets assumed by the assuming institution are covered (FDIC reimburses the acquiring institution or shares in loan losses).
 - Bridge Bank Resolution Transaction. A type of purchase and assumption transaction for which FDIC itself acts temporarily as the assuming institution.
- Deposit Payoff Transaction. A resolution strategy that occurs when there is no assuming institution, and FDIC directly pays the insured amounts to the depositor and becomes the subrogated holder of the claim.
 - Straight Deposit Payoff. This is only executed if FDIC does not receive a bid for the purchase and assumption transaction, thus no liabilities are assumed and no assets are purchased by an acquiring institution.
 - Insured Deposit Transfer. The deposits and secured liabilities of a failed institution are transferred to a healthy institution. This means no assets are purchased.
 - Deposit Insurance National Bank (DINB) – Insured deposits are transferred to a newly chartered federal financial institution, which is operated for a limited period of time by the FDIC to permit depositors to make an orderly withdrawal of funds.

- Open Bank Assistance. FDIC determines it is least costly to the DIF to provide assistance rather than close the failing bank.¹

Least Cost Test Process

FDIC is required to resolve failed institutions using the least costly method to the DIF. FDIC contacts qualified insured depository institutions to bid on deposits and the failing bank's assets. After all bids are received, FDIC selects the least costly option to the DIF, which may include a purchase and assumption transaction with accompanying shared loss agreements. Figure 8 provides an overview of the least cost test process.

Figure 8: FDIC's Least Cost Test Process



Source: GAO (analysis); Art Explosion (images).

The authority to approve any resolution transaction, including any shared loss provisions, rests with the FDIC Board of Directors (BOD). The FDIC

¹Prior to 2010, a systemic risk determination would have permitted open bank assistance to an individual insured depository institution (IDI). However, since the passage of the Dodd-Frank Act on July 21, 2010, the systemic risk determination authority under section 13 of the FDI Act is limited to IDIs put in an FDIC receivership. Accordingly, open bank assistance is no longer an option. In an open bank assistance agreement, the FDIC provided financial assistance to an operating insured bank or thrift determined to be in danger of closing.

Division of Resolutions and Receiverships (DRR) Franchise and Asset Marketing Branch (FAMB) must obtain approval from the BOD before executing a resolution transaction. Because the FAMB must obtain approval before executing a resolution transaction, FAMB, Risk Management Supervision and Legal begin preparing a Failing Bank Board Case (FBC) immediately following notification from the bank's primary regulator that it has been identified as a potential failing institution.

FBC provides a history of the failing institution, an economic overview, comparable market and demographic data, and FDIC's estimated cost to liquidate the institution. This cost assumes a payout of insured deposits and a liquidation of all assets by FDIC. The FBC is prepared prior to the receipt of any bids and therefore, any premium paid by the successful bidder for the assets or deposits is not considered in this analysis and subsequently reduces FDIC's liquidation costs. In addition to information related to the failing institution, the FBC also includes a broad set of delegations allowing FDIC staff to approve and implement a resolution strategy. Once approved by the BOD, the BOD delegates authority to the Director of DRR to approve the transaction that resolves the financial institution at the least cost to the DIF.

The FAMB presents resolution strategies including a whole bank purchase and assumption transaction with and without shared loss agreements for approval from the BOD. The whole bank purchase and assumption transaction is the preferred method of resolution strategy. Under the whole bank purchase and assumption transaction, essentially all assets and liabilities are transferred to a healthy institution. This type of transfer includes transferring performing and nonperforming assets based on competitive bids. If no acceptable bids are received, a new depository institution in the same community as the failing bank may be organized to assume the insured deposits in order to payout those deposits, and to temporarily perform certain functions to wind up the affairs of the bank in an orderly fashion.

The FAMB marketing specialist starts marketing the bank to qualified institutions when the bank is issued a Prompt Corrective Action notice by its primary regulator. The FAMB marketing process involves getting asset and liability information from the failing institution and allowing the potential acquiring institutions to review this information. FAMB generates a bid list of qualified depository institutions that are approved by the primary regulators and is used to solicit bids. FDIC targets banks that are usually double the size of the failing bank and are financially stable. The

bidders sign confidentiality agreements in order to review the failing banks' information. FDIC performs a LCT analysis on all bids that are received.

The bids are submitted to FAMB for evaluation. These bids may contain several elements related to the bidder's valuation of the bank. Once all the bids have been received, FAMB compiles the bids and creates the Bid Summary Report. The Bid Summary Report indicates if a bid is conforming or nonconforming, as well as identifies other key information, including the proposed terms of the bid. A conforming bid follows the standard terms of the transaction and bid instructions, while a nonconforming bid is submitted with contingencies or conditions that deviate from the standard terms of the transaction and bid instructions. Conforming bids are always considered and evaluated when determining the least costly resolution. Nonconforming bids are considered as well, if they can be analyzed.

FAMB completes the LCT Analysis that is contained in the LCT Excel Workbooks including the bank's balance sheet, asset loss and recovery information, uninsured deposit estimate, bids and the Shared loss Worksheet (LSW), if applicable. The LSW is used to estimate the cost of a shared loss transaction. This cost may include an estimate of the initial cash outlay by FDIC or the acquirer, shared loss payments, payments to creditors left behind in the receivership, monitoring costs for those shared loss covered assets, FDIC receivership costs, and future estimated recoveries on assets retained by the receivership. Losses and recoveries are estimated by the financial advisors hired by the FDIC to perform the asset valuations.

After completing the LCT Analysis, the Bid Approval Memorandum addressed to the Director of DRR is prepared. The Bid Approval includes a description of all bids received, and a summary of the estimated cost to liquidate the institution, as well as the least costly transaction. The Director of DRR has the delegation of authority from the FDIC BOD to approve the least costly bid. The Director of DRR signs the memorandum to indicate approval of the winning bid.

Appendix III: GAO Analysis of Bank Characteristics and the Likelihood of Failure

We conducted an econometric analysis to estimate the relationship between bank characteristics and the likelihood of bank failure, using data on FDIC-insured commercial banks and state-chartered savings banks (banks) for the period from 2006 through 2011 along with data on banks that failed during the period from 2008 through 2011 and their acquiring banks. We used a discrete-time hazard model to estimate the likelihood that a bank fails in a quarter as a function of its balance sheet characteristics in the previous quarter, including capital adequacy; asset quality; earnings; liquidity; brokered deposits use; ADC lending; nonfarm, nonresidential real estate lending; multifamily real estate lending; commercial real estate, construction, and land development lending not secured by real estate; and size.

- Capital adequacy. Capital adequacy measures the net worth or solvency of the bank. Bank capital performs several important functions, such as absorbing losses, promoting public confidence, restricting excessive asset growth, and providing protection to depositors and the FDIC insurance fund. We calculated capital adequacy as bank equity capital as a percent of total assets.
- Asset quality. Asset quality measures the quality of the bank's assets, which may include losses not yet reflected in capital. The primary factor affecting overall asset quality is the quality of the loan portfolio and the credit administration program. We calculated asset quality as performing assets as a percent of total assets, where performing assets are total assets less assets 90 days or more past due but still accruing interest, assets in nonaccrual status, and other real estate owned.
- Earnings. Earnings measure profitability. Earnings absorb losses and augment capital, provide the initial safeguard against the risks of engaging in the banking business, and represent the first line of defense against capital depletion resulting from reduced asset values. We calculated earnings as bank net income as a percent of total assets.
- Liquidity. Liquidity represents the ability to fund assets and meet obligations as they become due, and it is essential in all banks to compensate for expected and unexpected balance sheet fluctuations and to provide funds for growth. One component of liquidity is the extent to which a bank relies on stable funding sources. We calculated liquidity as stable liabilities as a percent of total liabilities, where stable liabilities are total liabilities less federal funds purchased and securities sold under agreements to repurchase, demand notes issued to the U.S. Treasury and other borrowed money, time deposits over the limit for insured deposits held in domestic offices, deposits

held in foreign offices, and trading liabilities net of revaluation losses on derivatives.

- Brokered deposits. Brokered deposits measure reliance on high-cost and potentially volatile funding sources. We calculated brokered deposits—deposits accepted through a deposit broker—as a percent of total liabilities.
- ADC loans. ADC loans measure concentration in one type of risky lending. We calculated ADC loans as a percent of total assets.
- Nonfarm, nonresidential real estate loans. Non-farm, non-residential real estate loans measure concentration in one type of risky lending. We calculated non-farm, non-residential real estate loans as a percent of total assets.
- Multifamily real estate loans. Multifamily real estate loans measure concentration in one type of risky lending. We calculated multifamily real estate loans as a percent of total assets.
- Commercial real estate, construction, and land development loans not secured by real estate. Commercial real estate, construction, and land development loans not secured by real estate measure concentration in one type of risky lending. We calculated these loans as a percent of total assets.
- Size. Size accounts for other factors that are correlated with the likelihood of failure, such as product mix or business model, that may vary by bank size. We calculated size as the natural logarithm of total assets.

We included indicators for each quarter to control for factors affecting the likelihood of failure that are common to all banks at the same time, such as the regulatory environment, the state of the market for bank products and services, and the condition of the overall economy. We adjusted the standard errors of our estimates to reflect the lack of independence between observations on the same bank in different quarters. Specifically, we clustered our standard errors by bank to allow for arbitrary correlation between observations on the same bank in different quarters and we multiplied our standard errors by the square root of the average number of observations per bank to reflect the fact that the series of observations on a single bank constitutes a single observation in our model. We used a similar model to estimate the likelihood that a bank fails in a quarter based on the characteristics of its balance sheet two quarters in the past, three quarters in the past, and so on up to eight quarters in the past.

To allow for the possibility that different factors were associated with the failure of banks of different sizes, we repeated the analysis separately for small and medium-sized banks. Small banks are banks with average assets of less than \$1 billion and medium-sized banks are banks with

average assets of at least \$1 billion and less than \$10 billion. The number of failures of large banks—banks with average assets of \$10 billion or more—was too small to permit us to separately analyze this group of banks.

We found that ADC lending and brokered deposits were associated with an increased likelihood of failure, while asset quality and capital adequacy were associated with a reduced likelihood of failure, all else being equal (see table 5). A bank was more likely to fail in a quarter if it had high concentrations of ADC loans on its balance sheet in the past, specifically, three, four, five, six, seven, or eight quarters in the past. A bank was also more likely to fail in a quarter if it relied heavily on brokered deposits six, seven, or eight quarters in the past. On the other hand, a bank was less likely to fail in a quarter if it had more adequate capital in the previous six quarters and if it had better asset quality in the previous eight quarters.

Our analyses of small and medium-sized banks generated results that were broadly consistent with our analysis of all banks. A small bank was more likely to fail in a quarter if it had high concentrations of ADC loans on its balance sheet four, five, six, seven, or eight quarters in the past, while a medium-sized bank was more likely to fail in a quarter if it had high concentrations of ADC loans seven or eight quarters in the past. However, a small bank was less likely to fail in a quarter if it had better capital adequacy in the previous six quarters and a medium-sized bank was less likely to fail in a quarter if it had better capital adequacy in the previous three quarters. Finally, a small bank was less likely to fail in a quarter if its asset quality was better in the period from two quarters in the past to eight quarters in the past.

Table 5: Bank Characteristics Associated with the Likelihood of Failure, 2008-2011

Bank size	Lagged factors that increase the likelihood of failure in the current quarter	Lagged factors that decrease the likelihood of failure in the current quarter	Number of lags (quarters)
All banks	Brokered deposits ^c , ADC loans ^a	Asset quality ^b	8
	Brokered deposits ^c , ADC loans ^a	Asset quality ^b	7
	Brokered deposits ^c , ADC loans ^a	Asset quality ^a , capital adequacy ^b	6
	ADC loans ^a	Asset quality ^a , capital adequacy ^b	5
	ADC loans ^b	Asset quality ^a , capital adequacy ^a	4
	ADC loans ^c	Asset quality ^a , capital adequacy ^a	3
		Asset quality ^b , capital adequacy ^a	2
		Asset quality ^c , capital adequacy ^a	1

Appendix III: GAO Analysis of Bank Characteristics and the Likelihood of Failure

Bank size	Lagged factors that increase the likelihood of failure in the current quarter	Lagged factors that decrease the likelihood of failure in the current quarter	Number of lags (quarters)
Small banks (average assets less than \$1 billion)			
	ADC loans ^a	Asset quality ^b	8
	ADC loans ^a	Asset quality ^b	7
	ADC loans ^a	Asset quality ^a , capital adequacy ^c	6
	ADC loans ^a	Asset quality ^a , capital adequacy ^a	5
	ADC loans ^b	Asset quality ^a , capital adequacy ^a	4
		Asset quality ^a , capital adequacy ^a	3
		Asset quality ^b , capital adequacy ^a	2
		Capital adequacy ^a	1
Medium-sized banks (average assets \$1-10 billion)			
	ADC loans ^b		8
	ADC loans ^c		7
			6
			5
			4
		Capital adequacy ^b	3
		Capital adequacy ^b	2
		Capital adequacy ^b	1

Source: GAO analysis of data from FDIC and the Federal Financial Institutions Examinations Council.

^aSignificant at the 1 percent level.

^bSignificant at the 5 percent level.

^cSignificant at the 10 percent level.

Our results likely reflect both factors that are generally correlated with the likelihood of failure and factors that are specific to the particular time period we analyzed. Thus, the extent to which our results can be generalized to other time periods is limited. Furthermore, our results reflect average relationships between bank characteristics and the likelihood of failure for all of the observations we used. As such, they may not reflect the particular circumstances of any one bank. Finally, we note that the list of characteristics we analyzed is meant to highlight important characteristics of banks that are related to the likelihood of failure, but many other factors play a role in whether or not a bank fails and our list of characteristics is not exhaustive.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

We analyzed bank call reports from 2007 through 2011 for failed and open commercial banks to identify and compare trends in (1) the use of historical cost accounting and fair value accounting and (2) the extent to which losses were credit-related for small, medium-size, and large institutions. We define small failed banks as those that had \$1 billion or less in assets at the time of failure, medium-size failed banks as those that had between \$1 billion and \$10 billion at the time of failure, and large failed banks as those that had over \$10 billion in assets at the time of failure. Overall our analysis showed that fair value-related losses contributed very little to the decline in net interest income and regulatory capital experienced by failed commercial banks of all sizes (small, medium-size, and large) once the financial crisis began in 2007. Similarly, fair value losses at open commercial banks of all sizes were also limited. Instead, this analysis showed that the commercial bank failures were driven by rising levels of credit losses related to nonperforming loans held by the banks. Further, these losses had a greater negative impact on institutions' net interest income and regulatory capital levels than those recorded at fair value. We analyzed failed thrifts separately. (See app. V.)

Fair Value, Historical Cost, and Impairment Accounting

U.S. generally accepted accounting principles (GAAP) establish the basis on which items reported on a bank's balance sheet should be measured. Currently, assets and liabilities are reflected in the balance sheet at fair value, historical cost, or another basis, such as lower-of-cost or fair value.

- Fair Value: Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value accounting standards under GAAP establish a standardized framework for

measuring the fair value of an asset or liability.¹ According to the Securities and Exchange Commission, fair value is most prevalently used to measure “financial” assets and liabilities, such as investment securities and derivative instruments. Fair value measurements that are required on a quarterly basis (or each reporting period) are often referred to as “recurring.” Fair value measurements that are not required on a regular basis are often referred to as “nonrecurring.” For some assets and liabilities that are measured at fair value on a recurring basis, such as securities designated for trading, unrealized gains or losses flow through the bank’s earnings in the income statement and affect regulatory capital. For other assets and liabilities that are measured at fair value on a recurring basis, such as securities designated as available for sale, unrealized fair value gains and losses generally do not impact earnings, and thus, generally are not included in regulatory capital calculations. Instead, these gains or losses are recorded through other comprehensive income (OCI), unless the institution determines that a decline in fair value below amortized cost constitutes an other than temporary impairment (OTTI) in which case the instrument is written down to its fair value, with credit losses reflected in earnings.² The OTTI decision for a given

¹In 2006, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 157, *Fair Value Measurements*, which defined fair value, established a framework for measuring fair value under GAAP, and required expanded disclosures about fair value measurements. SFAS No. 157 became effective in 2008. Prior to its issuance, fair value measurement principles were not consistently defined and codified in a single accounting standard, which led to the potential for disparate fair value measurement practices under different accounting standards. SFAS No. 157 was intended to provide a single set of measurement principles to be uniformly applied for fair value measurement when GAAP requires or permits reporting entities to measure or disclose the fair value of an asset or liability. However, SFAS No. 157 did not change which asset and liabilities are subject to fair value accounting or when fair value should be applied, as other previously existing accounting standards provide the requirement or permission to measure assets and liabilities at fair value. SFAS 157 was subsequently codified as ASC 820 and amended, and additional staff guidance was issued on the application of fair value accounting.

²OCI refers to revenues, expenses, gains, and losses that are included in comprehensive income but excluded from net income. Comprehensive income is the total non-owner change in equity for a reporting period. An other-than-temporarily impaired instrument is one whose fair value has fallen below its amortized cost and its value is not expected to recover to its amortized cost through the holding period. As a result of an April 2009 change to the relevant GAAP standard, an OTTI of either a debt security classified as available-for-sale or held-to-maturity in certain circumstances is separated into the (1) credit loss amount recognized in earnings and (2) the amount related to all other factors (non-credit loss) recognized in OCI, net of applicable taxes.

asset is a judgmental decision of the bank, considering various factors related to the severity and duration of the decrease in the value of the asset. Unrealized changes in fair value and OTTI-related write-downs that are recognized in earnings in the income statement directly impact regulatory capital levels.

- **Historical Cost:** Measurement using historical cost can be done in several ways, but the general concept is to record items on the balance sheet using the original amount paid or received, with adjustments when appropriate in subsequent periods for depreciation, amortization, principal pay downs, or impairment. Generally, loans that a bank holds for investment (HFI), for example, are recorded at amortized cost, net of an impairment allowance for estimated credit losses.³ Such loans typically comprise the bulk of assets held by FDIC-insured banks.
- **Loan Impairment Accounting:** GAAP requires financial institutions to maintain an allowance for loan losses (loan loss allowance) at a level that is appropriate to cover estimated credit losses incurred as of the balance sheet date for their entire portfolio of HFI loans. Under GAAP, institutions must recognize impairment on HFI loans when credit losses are determined to be probable and reasonably estimable, that is, when, based on current information and events, it is probable that an institution will be unable to collect all amounts due (i.e., both principal and interest) according to the contractual terms of the original loan agreement. An increase in the loan loss allowance results in a charge to expenses, termed a provision for loan losses. Impairment accounting standards under GAAP set forth the measurement methods for estimating the credit losses attributable to individually impaired loans. Regulators generally require institutions to establish policies and procedures for determining the loan loss allowance based on GAAP requirements.⁴

³Essentially, amortized cost is outstanding principal, adjusted for any charge-offs, deferred fees or costs, and unamortized discount or premium.

⁴Section 121 of the Federal Deposit Insurance Corporation Improvement Act requires that the accounting principles used for regulatory reporting should be no less stringent than GAAP in order to facilitate prompt corrective action to resolve failed banks at the least cost to the DIF.

Most Assets and Liabilities at Failed and Open Commercial Banks Were Not Measured at Fair Value between 2007 and 2011

Assets Measured at Amortized Cost

During the period of our study, loans HFI represented on average over two-thirds of most commercial banks' total assets (table 1). HFI loans are not measured at fair value, but instead are measured on an amortized-cost basis, net of an impairment allowance for estimated credit losses. Table 6 indicates that small and medium-size commercial banks generally had slightly higher percentages of loans classified as HFI loans than large commercial banks. Also, compared to open commercial banks, failed commercial banks held a higher percentage of HFI loans.

Table 6: HFI Loans as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	HFI loans	78.30%	77.48%	74.25%	70.73%	68.38%
>\$1 billion, <\$10 billion	HFI loans	72.46%	73.01%	69.90%	69.20%	77.39%
>\$10 billion	HFI loans	60.80%	56.25%	58.85%	77.20%	— ^a
Open banks						
< \$1 billion	HFI loans	— ^b	69.47%	67.68%	65.11%	62.47%
>\$1 billion, <\$10 billion	HFI loans	— ^b	68.62%	66.89%	63.64%	61.95%
>\$10 billion	HFI loans	— ^b	52.72%	50.99%	51.30%	49.63%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Assets and Liabilities Measured at Fair Value Through Earnings on a Recurring Basis

Assets measured at fair value through earnings on a recurring basis comprised mainly trading assets, nontrading derivative assets, and nonfinancial assets such as servicing rights for mortgages for which the fair value option has been elected.⁵

Trading Assets

Trading assets generally include both debt and marketable equity securities bought and held primarily to be sold in the near term. Trading activities typically involve active and frequent buying and selling to generate profits on short-term movements in market prices. Trading assets also include derivative contracts held for trading purposes in gain positions. Table 7 shows that trading assets did not represent a significant percentage of failed commercial banks' assets from 2007 through 2011. Table 7 also indicates that failed commercial banks held fewer trading assets than open commercial banks. Large open commercial banks in particular tended to have larger percentages of trading assets than failed commercial banks of similar size.

Table 7: Trading Assets as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	Trading assets	0.05%	0.03%	0.00%	0.02	0.00%
>\$1 billion, <\$10 billion	Trading assets	0.17%	0.14%	0.03%	0.01%	0.00%
>\$10 billion	Trading assets	0.04%	0.04%	0.05%	0.11	— ^a
Open banks						
< \$1 billion	Trading assets	— ^b	0.06%	0.04%	0.02%	0.02%
>\$1 billion, <\$10 billion	Trading assets	— ^b	0.27%	0.16%	0.28%	0.19%
>\$10 billion	Trading assets	— ^b	9.76%	7.82%	7.22%	7.03%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

⁵ASC 825 (formerly FAS 159), "The Fair Value Option for Financial Assets and Financial Liabilities," (February 2007) allows a one-time election to report certain financial instruments at fair value. At initial recognition for certain financial assets and liabilities, an entity may irrevocably elect fair value as the initial and subsequent measurement attribute, with changes in fair value included in current earnings.

Nontrading Assets

Nontrading assets measured at fair value on a recurring basis include, among other things, nontrading derivative contracts in gain positions. Most commercial banks did not have any significant holdings of such nontrading assets (table 8). Even for open commercial banks that have relatively more of such nontrading assets than failed institutions, the level of these assets is less than 0.15 percent of their total assets.

Table 8: Nontrading Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	Nontrading assets	0.00%	0.00%	0.00%	0.00%	0.00%
>\$1 billion, <\$10 billion	Nontrading assets	0.00%	0.00%	0.00%	0.00%	0.00%
>\$10 billion	Nontrading assets	0.00%	0.00%	0.00%	0.00%	— ^a
Open banks						
< \$1 billion	Nontrading assets	— ^b	0.03%	0.01%	0.00%	0.00%
>\$1 billion, <\$10 billion	Nontrading assets	— ^b	0.03%	0.04%	0.05%	0.06%
>\$10 billion	Nontrading assets	— ^b	0.13%	0.02%	0.02%	0.01%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Nonfinancial Assets

Nonfinancial assets measured at fair value through earnings on a recurring basis consist of mortgage servicing rights (MSR) for which a fair value option has been elected. Failed commercial banks did not have significant amounts of such nonfinancial assets (table 9). Failed commercial banks also had fewer such nonfinancial assets than open commercial banks, particularly large open commercial banks.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Table 9: Nonfinancial Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	Nonfinancial assets	0.00%	0.00%	0.00%	0.00%	0.00%
>\$1 billion, <\$10 billion	Nonfinancial assets	0.00%	0.00%	0.00%	0.00%	0.00%
>\$10 billion	Nonfinancial assets	0.00%	0.00%	0.00%	0.00%	— ^a
Open banks						
< \$1 billion	Nonfinancial assets	— ^b	0.05%	0.09%	0.08%	0.07%
>\$1 billion, <\$10 billion	Nonfinancial assets	— ^b	0.24%	0.34%	0.27%	0.23%
>\$10 billion	Nonfinancial assets	— ^b	1.08%	1.31%	1.19%	1.08%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Liabilities

Liabilities measured at fair value through earnings on a recurring basis include trading liabilities such as securities an institution sold but did not own and therefore is obligated to purchase at a future date (short positions), derivative contracts held for trading purposes in loss positions, nontrading derivative contracts in loss positions, and those liabilities for which a bank elects to measure at fair value on a recurring basis under the fair value option. Failed commercial banks did not have a significant amount of such liabilities (table 10). Failed commercial banks also had fewer such liabilities than open commercial banks, particularly large open banks.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Table 10: Trading Liabilities Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	Liabilities	0.00%	0.00%	0.00%	0.00%	0.00%
>\$1 billion, <\$10 billion	Liabilities	0.01%	0.00%	0.00%	0.00%	0.00%
>\$10 billion	Liabilities	0.01%	0.02%	0.03%	0.06%	— ^a
Open banks						
< \$1 billion	Liabilities	— ^b	0.00%	0.00%	0.00%	0.00%
>\$1 billion, <\$10 billion	Liabilities	— ^b	0.06%	0.05%	0.04%	0.06%
>\$10 Billion	Liabilities	— ^b	4.61%	3.43%	3.33%	3.37%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Assets Measured at Fair Value on a Nonrecurring Basis Through Income

Securities Held to Maturity

Investments in debt securities classified as held-to-maturity (HTM) are measured at amortized cost, but if any decline in fair value below amortized cost is other than temporary, credit losses are recognized in earnings. The HTM category includes only debt securities that management has both the positive intent and ability to hold until maturity. As illustrated in table 11, investment securities accounted for as HTM represented less than 2 percent of assets held for failed banks with less than \$10 billion in assets. For failed banks with more than \$10 billion in assets, HTM ranged between 3 percent and 14 percent, particularly because of one large bank with a high percentage of HTM securities. On average, open banks held about 3 percent of HTM securities.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Table 11: HTM Securities as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	HTM securities	1.17%	1.14%	0.63%	0.32%	0.43%
>\$1 billion, <\$10 billion	HTM securities	0.82%	1.38%	1.09%	0.14%	0.00%
>\$10 billion ^a	HTM securities	13.60%	5.04%	2.80%	4.88%	— ^b
Open banks						
< \$1 billion	HTM securities	— ^c	2.51%	2.37%	2.22%	2.17%
>\$1 billion, <\$10 billion	HTM securities	— ^c	2.63%	2.56%	2.97%	3.10%
>\$1 0 billion	HTM securities	— ^c	0.69%	1.12%	0.84%	1.02%

Source: GAO analysis of FDIC call report data.

^aOne large bank with a high percentage of HTM securities accounted for most of the HTM securities. Excluding this bank, the percentages ranged from x to x.

^bNo large commercial banks failed in 2011.

^cPub. L. No.112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Securities Available for Sale

Investments in debt securities that are not classified as trading securities or as HTM securities are classified as available-for-sale (AFS) securities. AFS securities also include equity securities that have readily determinable fair values and are not classified as trading securities. If the fair value of an AFS security declines below its amortized cost, and the decline is other than temporary, credit losses are recognized in earnings.

As illustrated in table 12, AFS securities represented the largest percentage of assets held after HFI loans. For failed banks, AFS assets ranged between 9 percent and 18 percent of total assets compared to 12 percent and 20 percent for open banks. On average, open banks with less than \$10 billion in total assets held the highest percentages of AFS securities.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Table 12: AFS Securities as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	AFS securities	10.51%	10.15%	9.61%	9.47%	9.50%
>\$1 billion, <\$10 billion	AFS securities	15.56%	11.97%	10.92%	13.22%	10.01%
>\$1 billion	AFS securities	9.94%	16.47%	18.31%	12.52%	___ ^a
Open banks						
< \$1 billion	AFS securities	___ ^b	16.16%	16.47%	17.68%	19.79%
>\$1 billion, <\$10 billion	AFS securities	___ ^b	15.59%	16.19%	17.06%	18.83%
>\$10 billion	AFS securities	___ ^b	12.68%	15.91%	17.94%	18.28%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

As a result of an April 2009 change to the relevant GAAP standard, an OTTI loss of either an AFS or HTM debt security, in certain circumstances, is separated into (1) the credit loss amount, which is recognized in earnings and (2) the loss amount related to all other factors (noncredit loss), which is recognized in OCI, net of applicable taxes. We discuss the impact of this change later on in this appendix.

Assets Measured at the Lower of Cost or Fair Value

Loans Held for Sale

Under GAAP, loans originated with the intent to sell in the secondary market to government-sponsored entities and other investors (including other FDIC-insured institutions) are carried at the lower of cost or fair value, unless the institution has elected to account for the loans at fair value under the fair value option. Institutions can transfer loans into or out of the HFS classification as a result of changes in intentions regarding whether the loans will be sold or held for investment. Transfers between

the HFS and HFI categories, however, are recorded at the lower of cost or fair value.⁶

As indicated in table 13, HFS loans did not represent a significant percent of assets held by commercial banks. On average, failed banks with less than \$10 billion in assets held less than 2 percent of HFS loans with small banks accounting for less than one-half of 1 percent of such assets. Large failed banks have a higher percent of HFS loans than open large banks. In 2007 and 2008, a few large banks started transferring HFS loans into their HFI portfolios as a result of the 2007 contraction in the secondary mortgage market. Appendix VI provides further analysis of these transfers.

Table 13: HFS Loans as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	HFS loans	0.42%	0.22%	0.26%	0.29%	0.26%
>\$1 billion, <\$10 billion	HFS loans	1.17%	1.36%	1.35%	0.73%	0.05%
>\$10 billion	HFS loans	3.08%	4.19%	3.01%	0.65%	— ^a
Open banks						
< \$10 billion	HFS loans	— ^b	0.32%	0.47%	0.54%	0.53%
>\$1billion, <\$10 billion	HFS loans	— ^b	1.34%	0.83%	0.93%	0.96%
>\$10 Billion	HFS loans	— ^b	1.52%	1.58%	1.45%	1.21%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Other Real Estate Owned

Other Real Estate Owned (OREO) usually includes assets repossessed through a foreclosure process for defaulted loans. Generally, assets

⁶The OCC Bank Accounting Advisory Series states that a bank should transfer loans from the HFI category to the HFS category when it no longer has the intent and ability to hold the loans for the foreseeable future or until maturity or payoff. However, such changes in intent followed by subsequent sales of the loan in the near term would likely cause increased skepticism and scrutiny by the auditor and examiner, especially if the sale or transfer occurs during the period the bank originally considered its foreseeable future.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

acquired through, or in lieu of, loan foreclosure are held for sale and are initially recorded at the estimated fair value of the collateral less costs to sell at the date of foreclosure, establishing a new cost basis. Subsequent to foreclosure, periodic valuations are performed and the assets are carried at the lower of their cost basis or estimated fair value less cost to sell.⁷

Table 14 shows that early in 2007 and 2008, commercial banks had little exposure to foreclosed assets. However, as the crisis deepened and the real estate downturn became more severe, delinquencies increased rapidly and banks foreclosed more properties, particularly smaller institutions. Compared to open banks, failed banks had a larger share of OREO assets.

Table 14: OREO Assets as a Percentage of Total Assets for Failed and Open Commercial Banks, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	OREO	0.36%	1.35%	2.88%	5.13%	7.78%
>\$1 billion, <\$10 billion	OREO	0.26%	0.83%	2.10%	2.61%	2.30%
>\$10 billion	OREO	0.04%	0.39%	0.63%	0.78%	— ^a
Open banks						
< \$1 billion	OREO	— ^b	0.37%	0.71%	0.98%	1.05%
>\$1 billion, <\$10 billion	OREO	— ^b	0.26%	0.55%	0.78%	0.80%
>\$10 billion	OREO	— ^b	0.10%	0.15%	0.24%	0.22%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

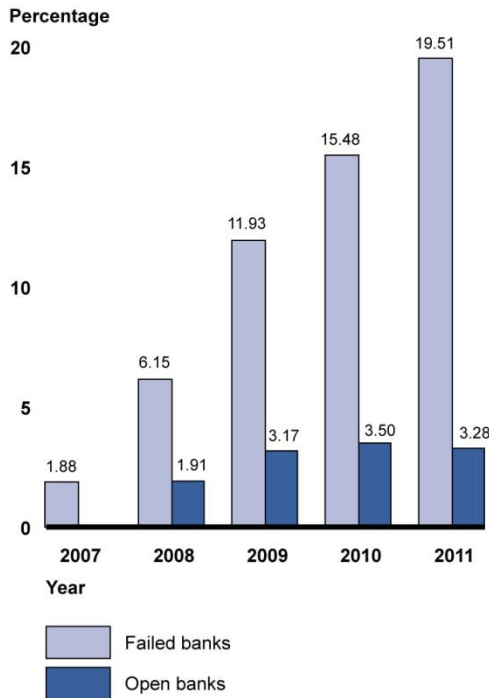
⁷See, for example, FDIC Financial Institution Letter 62-2008 Guidance on Other Real Estate.

Declines in Regulatory Capital at Failed Commercial Banks Due to Rising Levels of Nonperforming Loans and Resulting Increased Credit Losses

Small Commercial Banks

The reduction in capital for small failed commercial banks was driven by increases in their provisions for loan losses. As the financial crisis that began in 2007 progressed, the levels of nonperforming loans rose from an average of less than 2 percent of total loans in 2007 to over 6 percent in 2008, and to nearly 20 percent in 2011 (see fig. 9).

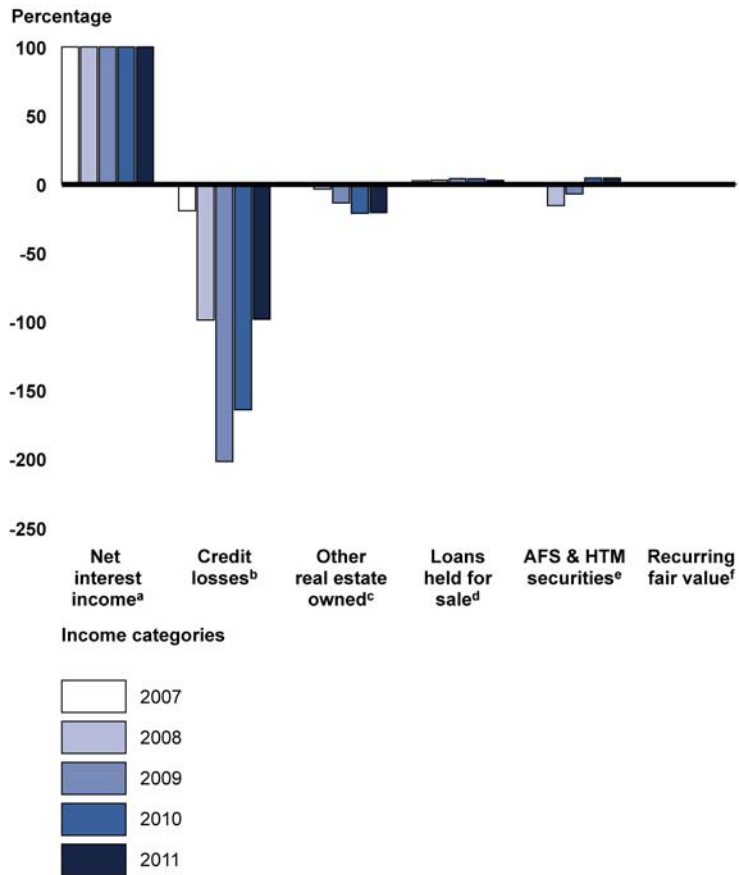
Figure 9: Nonperforming Loans as a Percentage of Total Loans for Small Failed and Open Commercial Banks, 2007-2011



Source: GAO analysis of FDIC call report data.

The rising levels of nonperforming loans appear to be the key factor driving the increases in provisions for loan losses and the resulting reduction in net interest income and regulatory capital. For small failed banks, credit losses were by far the largest contributor to these institutions' losses relative to any other asset class. For example, from 2008 through 2011, credit losses accounted for on average over 140 percent of net interest income while net losses from the sale of OREO averaged about 15 percent of net interest income (see fig. 10). During that same period, net losses from the sale of AFS and HTM securities averaged less than 4 percent. Net losses from recurring fair value measurements were less than one-tenth of 1 percent.

Figure 10: Income Categories as a Percentage of Net Interest Income for Small Failed Commercial Banks, 2007-2011



Source: GAO analysis of FDIC call report data.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

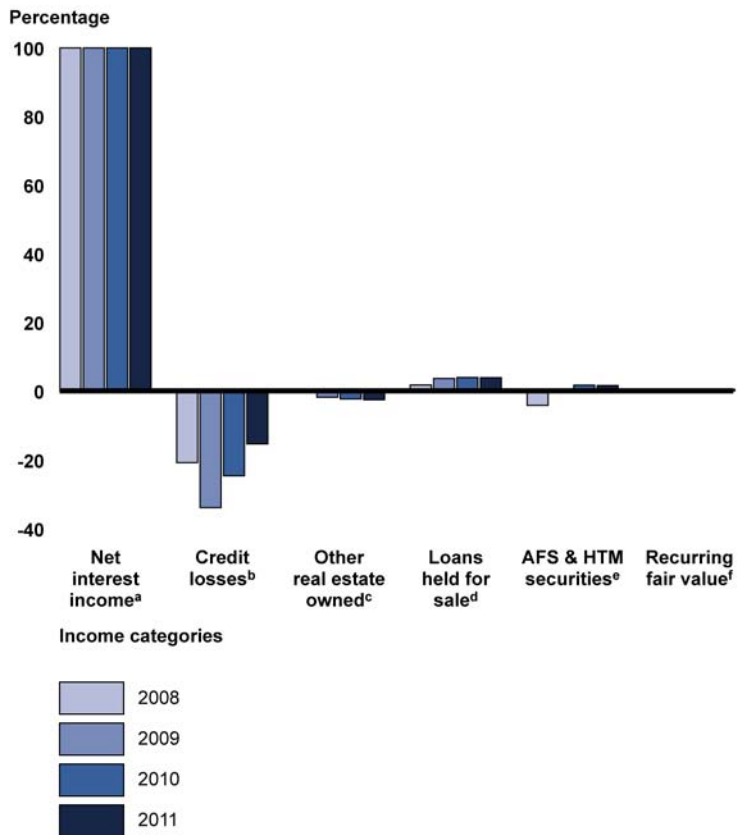
^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

The level of nonperforming loans experienced by small failed banks far exceeds the levels of nonperforming loans experienced by open banks of similar size (see figs. 10 and 11). Also, the magnitude of the credit losses experienced by open banks is significantly less than what the failed banks have experienced.

Figure 11: Income Categories as Percentage of Net Interest Income for Small Open Commercial Banks, 2008-2011



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

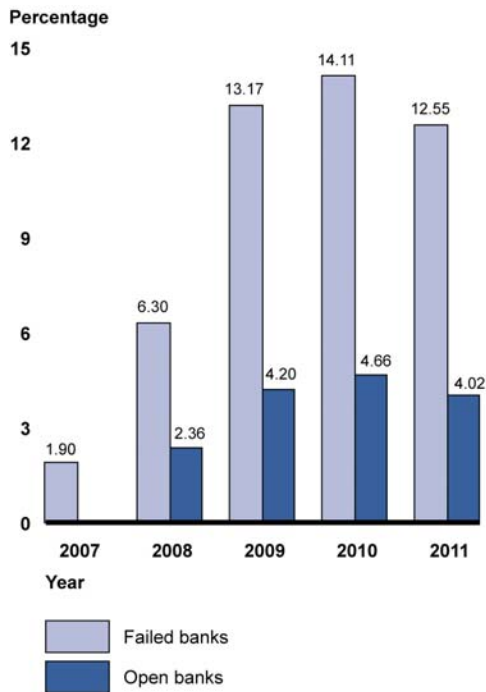
^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

Medium-Size Commercial Banks

The high levels of nonperforming loans experienced in 2009 and 2010 drove the extent of credit losses during those years for medium-size failed banks. The levels of nonperforming loans for these banks went from less

than 2 percent in 2007 to over 6 percent in 2008 and to over 14 percent in 2010 (see fig. 12). During that same time frame, nonperforming loan levels for open banks of similar size were about one-third.

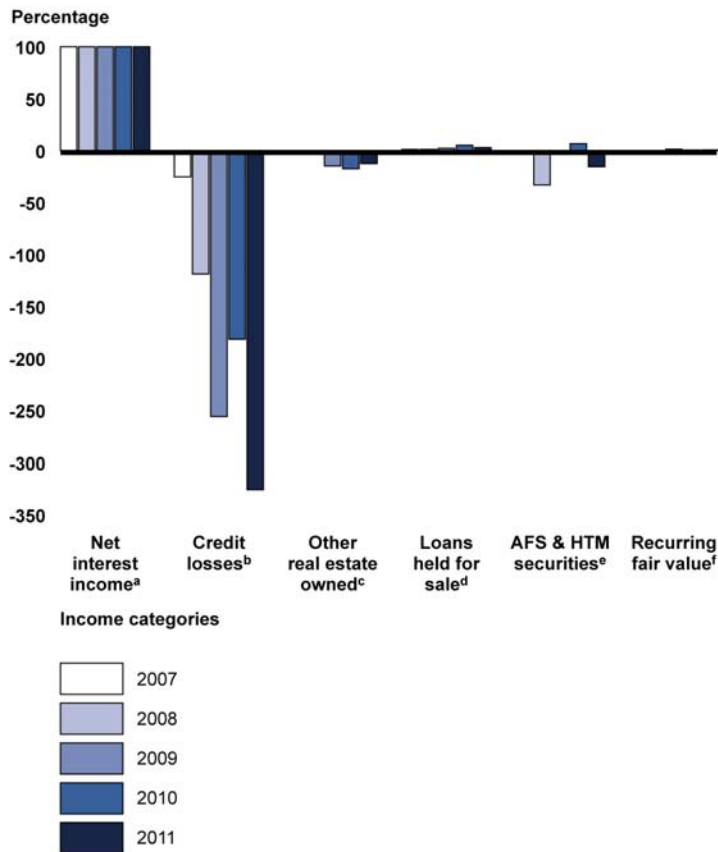
Figure 12: Nonperforming Loans as a Percentage of Total Loans for Medium-Size Commercial Banks, 2007-2011



Source: GAO analysis of FDIC call report data.

The large credit losses generally drove the failed commercial banks' decrease in earnings and regulatory capital. For example, from 2007 to 2011, credit losses averaged over 181 percent of net interest income while net losses from the sale of OREO averaged close to 10 percent of net interest income (see fig. 13). During that same period, net losses from the sale of AFS and HTM securities, as well as losses from trading (recurring fair value) averaged about 9 percent and 0.09 percent of net interest income, respectively. Sales of HFS loans, on the other hand, had a positive impact on net interest income.

Figure 13: Income Categories as a Percentage of Net Interest Income for Medium-size Failed Commercial Banks, 2007-2011



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

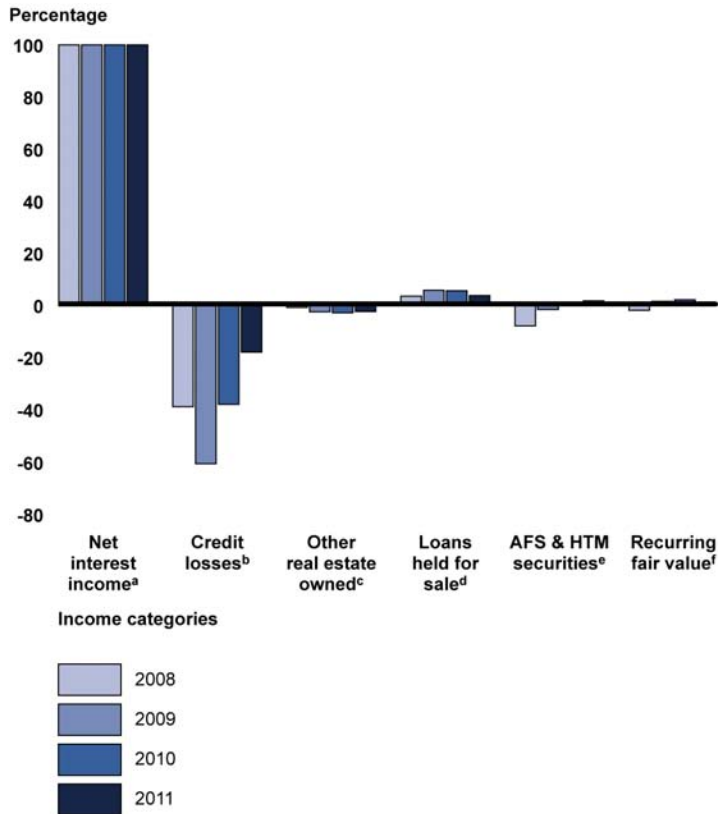
^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

In contrast, medium-size open banks experienced far fewer credit losses during the 2008-2011 time period (see fig. 14).

Figure 14: Income Categories as a Percentage of Net Interest Income for Open Medium-size Banks, 2008-2011



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

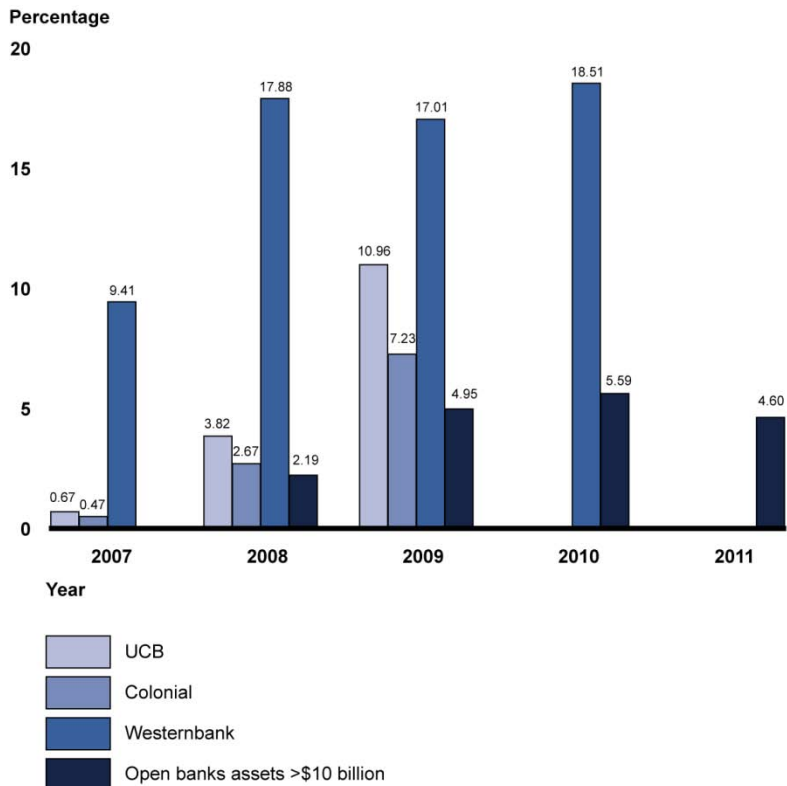
^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

Large Failed Commercial Banks

Nonperforming loans for the three large commercial banks that failed between 2008 and 2011—United Commercial Bank (UCB), Colonial Bank (Colonial), and Westernbank Puerto Rico (Westernbank) also far

exceeded the levels of nonperforming loans experienced generally for open banks of similar size (fig. 15).

Figure 15: Nonperforming Loans as a Percentage of Total Loans for Large Failed Commercial Banks, 2007-2011



Source: GAO analysis of FDIC call report data.

Note: For each large failed commercial bank, we provided data for 2007 and for the following years until the bank failed. UCB and Colonial failed in 2009 and Westernbank failed in 2010.

UCB

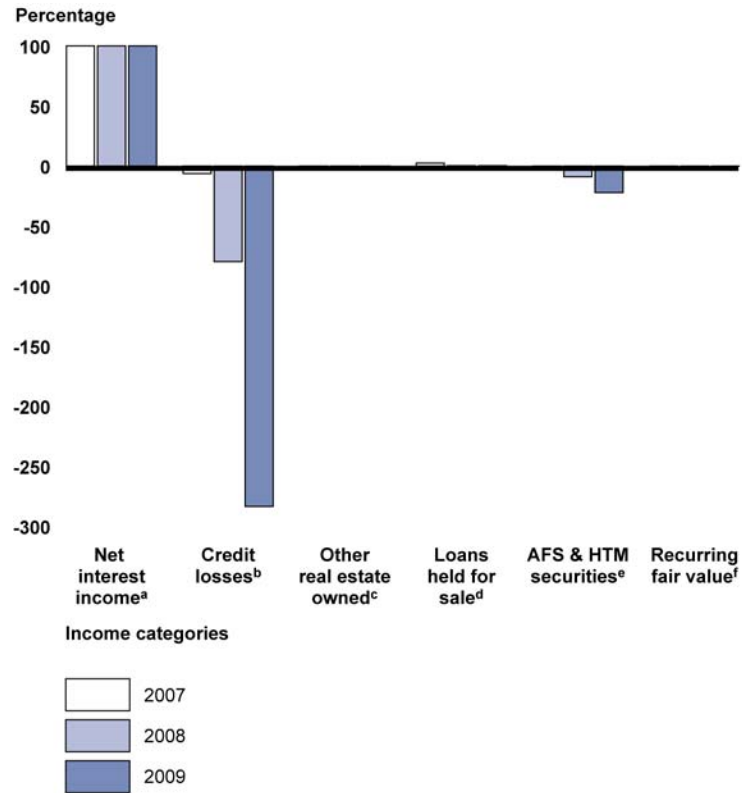
In 2007, UCB had less than 1 percent of nonperforming loans. However, in 2008, the levels of nonperforming loans rose rapidly to almost 4 percent, and nearly tripled in 2009 (see fig. 15). In its 2008 Form 10-K, UCB disclosed that it recorded a net loss of \$68 million in 2008 compared with a net income of \$102 million in 2007. The decline was primarily the result of an increase in the provision for loan losses of about \$263 million for 2008, compared to \$20 million for 2007. The increased provision for loan losses was the result of increases in classified residential construction loans and specific allowances on individually impaired

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

residential construction loans located in distressed areas of California and Nevada.

UCB's credit losses were by far the largest contributor to the bank's overall losses relative to any other asset class (fig.16). For example, from 2007 through 2009, credit losses accounted for on average over 123 percent of net interest income.

Figure 16: Income Categories as a Percentage of Net Interest Income for United Commercial Bank, 2007-2009



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income. UCB did not report any losses in this category during this period.

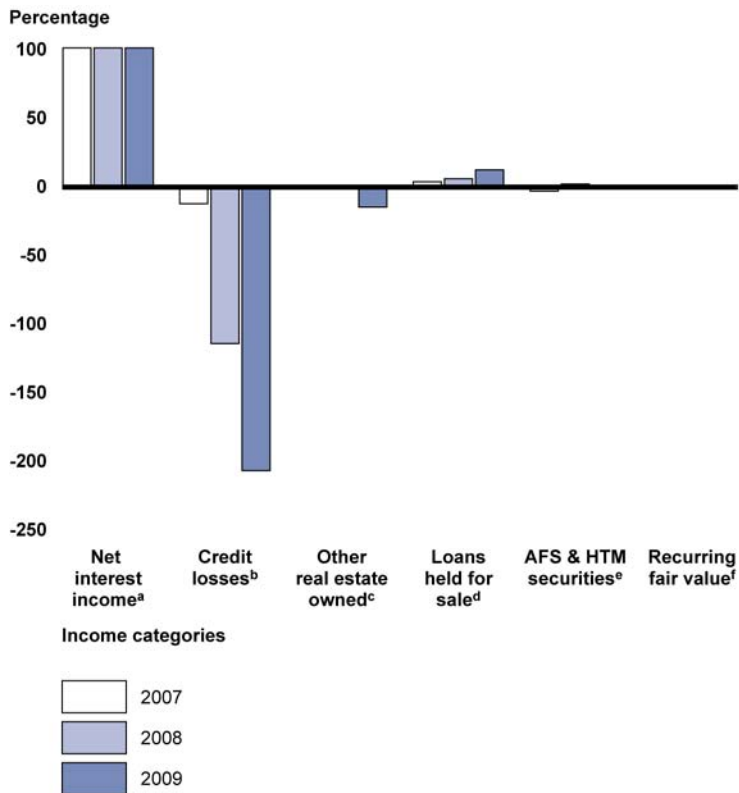
Colonial

In 2008 Colonial had less than one-half of 1 percent of nonperforming loans (fig. 15). However, in 2008, nonperforming loans had jumped to nearly 3 percent of total loans, reflecting rapid deteriorations in the quality of its loan portfolio. By 2009, the level of nonperforming loans had more than doubled again to 7.23 percent. In its material loss review, the Treasury IG found that from 2006 through 2009, Colonial charged off \$998 million of loans, of which \$752 million (75 percent) were losses within the acquisition, development, and construction (ADC) loan portfolio. In addition, loan delinquencies significantly increased and, as of June 2009, 25 percent of the ADC loan portfolio was 90 days past due or in nonaccrual status. During that same quarter, Colonial also had \$377 million in unrealized securities losses in its other mortgage-backed securities portfolio.

By and large, Colonial's credit losses were the primary drivers of the decline in net interest income (see fig. 17). For example, from 2007 through 2009, Colonial's credit losses accounted for on average over 110 percent of net interest income, while net losses from the sale of OREO averaged about 6 percent. During that same period, net losses from the sale of AFS and HTM securities averaged less than 2 percent of net interest income and the bank's fair value losses were less than 1 percent of net interest income, whereas HFS loan sales generated income.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Figure 17: Income Categories as a Percentage of Net Interest Income for Colonial National Bank, 2007-2009



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

Westernbank

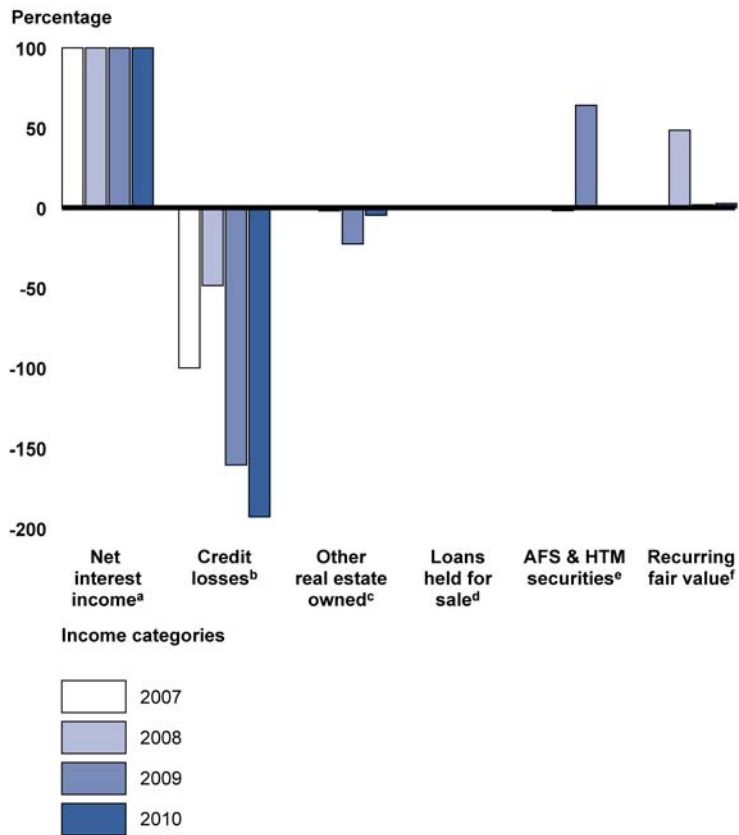
In 2007, Westernbank was already experiencing significant levels of nonperforming loans, which approached 10 percent of its total loans (fig.

15). According to the Treasury IG's material loss review, Westernbank's board and management's lending strategy focused on growth in CRE, ADC, and asset-based lending (ABL) portfolios without mitigating controls in place to keep pace with the changing loan portfolio. The IG noted that as Puerto Rico's economy sank into recession, ABL, CRE and ADC loans that were originated and renewed based on weak loan underwriting practices and deficient credit administration practices caused the precipitous deterioration of asset quality and increasingly high levels of adversely classified assets.

During the period 2007 through 2010, Westernbank's credit losses contributed the most to the bank's overall losses relative to any other asset class (fig. 18). For example, from 2007 through 2010, credit losses accounted for, on average, over 125 percent of net interest income while net losses from the sale of OREO averaged over 7 percent of net interest income. During that same period, revenues from the sale of AFS and HTM securities, HFS loans, and assets measured at recurring fair value had a positive impact on net interest income. However, the credit losses Westernbank sustained necessitated a large increase in provisions for losses, which stressed earnings and eventually eroded the bank's capital.

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

Figure 18: Income Categories as a Percentage of Net Interest Income for Westernbank, 2007-2010



Source: GAO analysis of FDIC call report data.

^aNet interest income is reported in the call report, schedule report of income. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for loan and lease losses as reported in the call report, schedule report of income.

^cThe impact on income of other real estate owned is based on net gains (losses) on sales of OREO as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale of foreclosed property and fair value losses recognized prior to sale.

^dThe impact on income of HFS loans is based on net gains (losses) on sales of loans and leases as reported in the call report, schedule report of income, which includes gains and losses recognized upon sale and fair value losses recognized prior to sale.

^eThe impact on income of AFS and HTM securities is based on realized gains (losses) on AFS and HTM securities as reported in the call report, schedule report of income, which includes impairment losses recognized.

^fThe impact on income of recurring fair value measurements is based on trading revenues and net gains (losses) on assets and liabilities accounted for under the fair value option as reported in the call report, schedule report of income.

OTTI Losses on HTM and AFS Debt Securities as a Percentage of Net Interest Income

In April 2009, the Financial Accounting Standards Board (FASB) amended the GAAP standard on OTTI to modify when charges stemming from declines in the fair value of debt securities classified as AFS and HTM below amortized cost are recorded in earnings.⁸ Under the previous standard, an entity was required to consider relevant factors in determining whether an impairment of a debt security was other than temporary, in which case the entire loss was recognized in earnings.⁹ However, some critics of this standard believed that during the recent financial crisis banks were recording significant OTTI losses to their earnings, and thus regulatory capital, to account for impaired assets, such as mortgage-backed securities that they had no immediate intention of selling and on which they expected the fair value would recover in the future when the financial markets improved. Under the new standard, if (a) the entity does not intend to sell a debt security and (b) it is not more likely than not that the entity will be required to sell the debt security before recovery of its amortized cost basis less any current-period credit loss, the amount of the OTTI representing the credit loss is recognized in earnings and the amount related to all other factors is recognized in OCI. In contrast, the amount of OTTI recorded in earnings for a debt security is the entire difference between the security's amortized cost basis and its fair value if the entity intends to sell the security or it is more likely than not that the entity will be required to sell the debt security prior to recovery of its amortized cost basis.



Figure 19 shows total OTTI losses and the breakdown of the noncredit-related portion recognized in OCI and the credit-related portion recognized in earnings. Although the changes were adopted in April of 2009, the changes were not captured in bank call reports until the first quarter of 2010, as a result, no data on OTTI are available prior to first quarter of 2010. Also, because most of the large banks that failed did so prior to the first quarter of 2010, there were no OTTI data recorded for the large banks past that date. Nevertheless, based on the limited reported data on OTTI, the results of the analysis show that generally OTTI losses recognized in earnings accounted for less than 2 percent of net interest income in 2010 and 2011 at failed and open banks of all sizes.

⁸Financial Accounting Standards Board Staff Position No. FAS 115-2: "Recognition and Presentation of Other-Than-Temporary Impairments," (April 9, 2009).

⁹ASC 320 (formerly FAS 115): "Accounting for Certain Investments in Debt and Equity Securities," May 1993.

Figure 19: OTTI Losses on HTM and AFS Debt Securities as a Percentage of Net Interest Income for Failed Banks

Asset size	Year	Total OTTI losses
<\$1B	2010	1.51 %
	2011	0.35
>\$1B - <\$10B	2010	0.96
	2011	0.00
>\$10B	2010	0.00
	2011	N/A

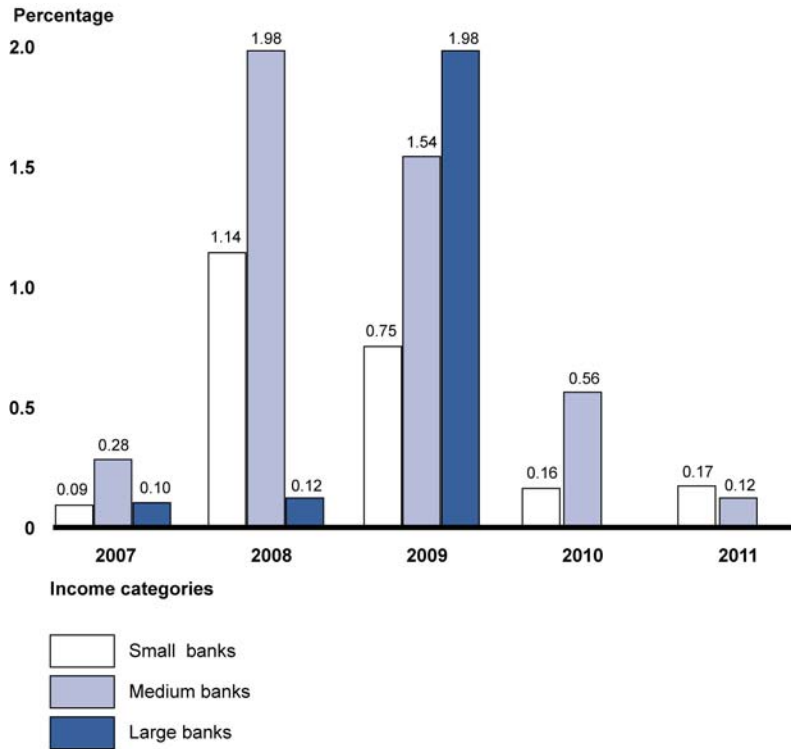
 OTTI losses recognized in OCI
 OTTI losses recognized in earnings

Source: GAO analysis of FDIC call report data.

Impact of Goodwill and Other Intangible Assets on Equity Capital

Goodwill refers to the excess of the cost of an acquired entity over the net of the amounts assigned to assets acquired and liabilities assumed. Goodwill is tested for impairment on an annual basis with any impairment charge recognized in net income and therefore decreasing equity capital. Generally, one trigger for assessing goodwill and other intangibles for impairment is if the fair value of the business unit acquired falls below its carrying amount. As figures 20 and 21 show, goodwill and other intangible expenses, on average, represented less than 2 percent of equity capital for failed institutions, compared to less than 1 percent for open institutions. For large failed banks, the ratio of goodwill and other intangible expenses to capital showed higher levels in 2008 and 2009 mainly because of two institutions, UCB and Colonial Bank. These two banks recognized higher than expected goodwill expenses in 2008 and 2009. For example, in December 2008, Colonial recognized a goodwill and other intangible expense totaling over \$579 million, and in September of 2009, UCB recognized a similar noncash charge totaling \$433 million. Without the goodwill impairment transactions of these two institutions, the ratio of goodwill and other intangible expenses to capital would have been 0.13 percent and 0.88 percent in 2008 and 2009, respectively.

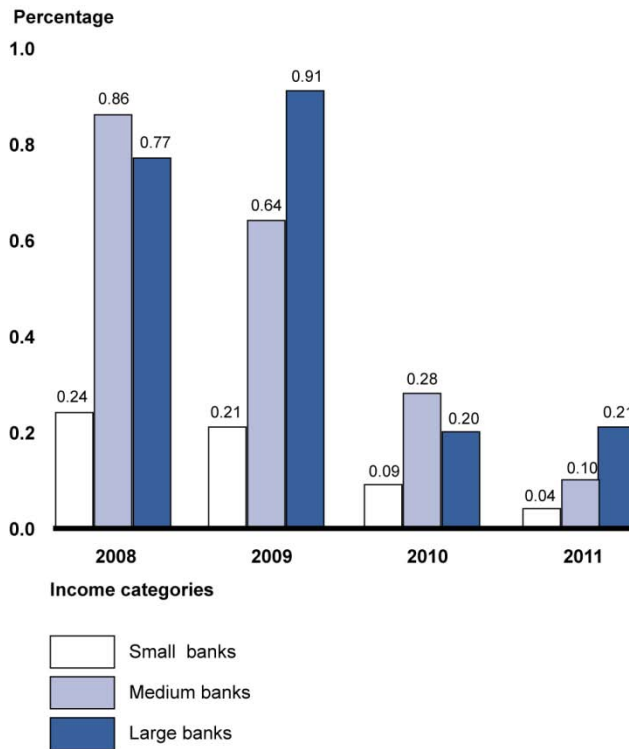
Figure 20: Goodwill and Other Intangible Expenses as a Percentage of Equity Capital (Failed Banks), 2007-2011



Source: GAO analysis of FDIC call report data.

Note: The ratio of goodwill and other intangible expenses to capital showed higher levels in 2008 and 2009 mainly because of two institutions, UCB and Colonial Bank. These two banks recognized higher than expected goodwill expenses in 2008 and 2009 because of 2007 bank mergers and acquisitions in Florida and Nevada that later became impaired primarily due to declining bank market valuations and increased credit costs. For example, in December 2008, Colonial recognized a goodwill and other intangible expense totaling over \$579 million, and in September of 2009, UCB recognized a similar noncash charge totaling \$433 million. Without the goodwill impairment transactions of these two institutions, the ratio of goodwill and other intangible expenses to capital would have been 0.13 percent and 0.88 percent in 2008 and 2009, respectively.

Figure 21: Goodwill and Other Intangible Expenses as a Percentage of Equity Capital (Open Banks), 2008-2011



Source: GAO analysis of FDIC call report data.

Impact of Other Comprehensive Income on Equity Capital

As discussed earlier, the accumulated OCI includes the unrealized fair value gains and losses on AFS securities (including fair value losses unrelated to credit factors). In addition, when a debt security is transferred from AFS to HTM, the unrealized holding gains or losses continues to be reported in this account, and it is amortized over the remaining life of the security as an adjustment of yield. We determined the extent to which negative changes in OCI impacted institutions' equity capital.

As table 15 shows, for small failed and open banks, the year-to-date (YTD) and accumulated OCI decreases were smaller than for medium-size and large failed and open banks. Generally, larger banks had larger decreases in 2008 and 2009, principally due to two large banks, Colonial and Westernbank. Colonial had a YTD OCI of over \$(318) million during the fourth quarter of 2008, and \$ (200) million during the first quarter of 2009, while Westernbank had a YTD OCI of over \$ (100) million during

Appendix IV: Analysis of the Impact of Fair Value Accounting on Recent Commercial Bank Failures

the second and third quarters of 2008. These unrealized fair value losses had a slightly larger impact on larger banks with more than \$10 billion in assets. Larger failed banks had larger negative changes in OCI, hence larger negative impact on equity than open institutions of similar size.

Table 15: YTD and Accumulated OCI as a Percentage of Equity Capital

Asset size	Description	2007	2008	2009	2010	2011
Failed banks						
< \$1 billion	YTD OCI	-0.05%	-1.92%	-0.21%	0.53%	15.17%
>\$1 billion, <\$10 billion	YTD OCI	0.10%	-1.81%	-0.06%	2.58%	1.83%
>\$10 billion	YTD OCI	0.48%	-5.77%	5.57%	4.25%	— ^a
< \$1 billion	AOCI	-0.57%	-2.15%	-2.70%	-0.06%	11.17%
>\$1 billion, <\$10 billion	AOCI	-0.93%	-2.50%	-6.56%	-1.61%	-2.25%
>\$10 billion	AOCI	-1.00%	-6.32%	-3.69%	0.18%	N/A ^a
Open banks						
< \$1 billion	YTD OCI	— ^b	-0.70%	0.54%	0.59%	1.90%
>\$1 billion, <\$10 billion	YTD OCI	— ^b	-1.12%	0.66%	0.65%	1.09%
>\$10 billion	YTD OCI	— ^b	-2.96%	2.54%	1.51%	0.71%
< \$1 billion	AOCI	— ^b	-0.39%	0.46%	1.43%	1.99%
>\$1 billion, <\$10 billion	AOCI	— ^b	-1.42%	-0.94%	0.48%	0.91%
>\$10 billion	AOCI	— ^b	-4.64%	-3.41%	-0.67%	-0.15%

Source: GAO analysis of FDIC call report data.

^aNo large commercial banks failed in 2011.

^bPub. L. No. 112-88 requires us to analyze bank failures that occurred since 2008. As such, we analyzed trends for both failed banks and open banks from 2008 through 2011. For failed banks, we also obtained 2007 data to determine any additional trends prior to the failures.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

We analyzed thrifts financial reports from 2007 through 2011 for failed and open thrift institutions to identify and compare trends in (1) the use of historical cost accounting and fair value accounting and (2) the extent to which losses were credit-related for small, medium-size, and large institutions. We define small failed thrifts as those that had \$1 billion or less in assets at the time of failure, medium-size failed thrifts as those that had between \$1 billion and \$10 billion at the time of failure, and large failed thrifts as those that had over \$10 billion in assets at the time of failure. Overall we found that fair value-related losses contributed very little to the decline in net interest income and regulatory capital experienced by failed thrifts of all sizes (small, medium-size, and large) once the financial crisis began. Similarly, fair value losses at open thrifts of all sizes were also limited. Instead, we found that the thrift failures were driven by rising levels of credit losses related to nonperforming loans held by the thrifts. Further, these losses had a greater negative impact on thrift institutions' net interest income and regulatory capital levels than those recorded at fair value. We analyzed failed banks separately. (See app. IV.)

Fair Value, Historical Cost, and Impairment Accounting

U. S. generally accepted accounting principles (GAAP) establish the basis on which items reported on a financial institution's balance sheet should be measured, including a thrift. Currently, assets and liabilities are reflected in the balance sheet at fair value, historical cost, or another basis, such as lower-of-cost or fair value.

- Fair Value: Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.. Fair value accounting standards under GAAP establish a standardized framework for

measuring the fair value of an asset or liability.¹ According to the Securities and Exchange Commission, fair value is most prevalently used to measure “financial” assets and liabilities, such as investment securities and derivative instruments. Fair value measurements that are required on a quarterly basis (or each reporting period) are often referred to as “recurring.” Fair value measurements that are not required on a regular basis are often referred to as “nonrecurring.” For some assets and liabilities that are measured at fair value on a recurring basis, such as securities designated for trading, unrealized gains or losses flow through the thrift’s earnings in the income statement and affect regulatory capital. For other assets and liabilities measured at fair value on a recurring basis, such as securities designated as available for sale, unrealized fair value gains and losses generally do not impact earnings, and thus, generally are not included in regulatory capital calculations. Instead, these gains or losses are recorded through other comprehensive income (OCI), unless the institution determines that a decline in fair value below amortized cost constitutes an other than temporary impairment (OTTI), in which case the instrument is written down to its fair value, with credit losses reflected in earnings.² The OTTI decision for a given

¹In 2006, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 157, *Fair Value Measurements*, which defined fair value, established a framework for measuring fair value under GAAP, and required expanded disclosures about fair value measurements. SFAS No. 157 became effective in 2008. Prior to its issuance, fair value measurement principles were not consistently defined and codified in a single accounting standard, which led to the potential for disparate fair value measurement practices under different accounting standards. SFAS No. 157 was intended to provide a single set of measurement principles to be uniformly applied for fair value measurement when GAAP requires or permits reporting entities to measure or disclose the fair value of an asset or liability. However, SFAS No. 157 did not change which asset and liabilities are subject to fair value accounting or when fair value should be applied, as other previously existing accounting standards provide the requirement or permission to measure assets and liabilities at fair value. SFAS 157 was subsequently codified as Accounting Standards Council (ASC) 820 and amended, and additional staff guidance was issued on the application of fair value accounting.

²OCI refers to revenues, expenses, gains, and losses that are included in comprehensive income but excluded from net income. Comprehensive income is the total non-owner change in equity for a reporting period. An other-than-temporarily impaired instrument is one whose fair value has fallen below its amortized cost and its value is not expected to recover through the holding period. As a result of an April 2009 change to the relevant GAAP standard, an OTTI of either a debt security classified as available-for-sale or held-to-maturity in certain circumstances is separated into the (1) credit loss amount recognized in earnings and (2) the amount related to all other factors (non-credit loss) recognized in OCI, net of applicable taxes.

asset is a judgmental decision of the thrift, considering various factors related to the severity and duration of the decrease in the value of the asset. Unrealized changes in fair value and OTTI-related write-downs that are recognized in earnings in the income statement directly impact regulatory capital levels.

- **Historical Cost:** Measurement using historical cost can be done in several ways, but the general concept is to record items on the balance sheet using the original amount paid or received, with adjustments when appropriate in subsequent periods for depreciation, amortization, principal pay downs, or impairment. Generally, loans that a thrift designates as held-for-investment (HFI), for example, are recorded at amortized cost, net of an impairment allowance for estimated credit losses.³ Such loans typically comprise the bulk of assets held by thrifts.
- **Loan Impairment Accounting:** GAAP requires financial institutions to maintain an allowance for loan losses (loan loss allowance) at a level that is appropriate to cover estimated credit losses incurred as of the balance sheet date for their entire portfolio of HFI loans. Under GAAP, institutions must recognize impairment on HFI loans when credit losses are determined to be probable and reasonably estimable, that is, when, based on current information and events, it is probable that an institution will be unable to collect all amounts due (i.e., both principal and interest) according to the contractual terms of the original loan agreement. An increase in the loan loss allowance results in a charge to expenses, termed a provision for loan losses. Impairment accounting standards under GAAP set forth the measurement methods for estimating the credit losses attributable to individually impaired loans. Regulators generally require institutions to establish policies and procedures for determining the loan loss allowance based on GAAP requirements.

³Essentially, amortized cost is outstanding principal, adjusted for any charge offs, deferred fees or costs, and unamortized discount or premium.

Most Failed Small and Medium-Size Thrifts Did Not Measure a Significant Percentage of Assets at Fair Value over the 2007-2011 Period

Assets Measured at Amortized Cost

During the period of our study, HFI loans represented on average over two thirds of most thrift institutions total assets (table 1). HFI loans are not recorded at fair value, but instead are measured on an amortized-cost basis, net of an impairment allowance for estimated credit losses. Table 16 indicates that small and medium-size thrifts generally had slightly higher percentages of loans classified as HFI loans than large thrifts. Also, compared to open thrifts, failed thrifts held a higher percentage of HFI loans.

Table 16: HFI Loans as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	HFI loans	77.67%	77.62%	73.65%	66.80%	70.20%
>\$1 billion, <\$10 billion	HFI loans	81.24%	83.02%	78.27%	65.43%	69.56%
Open thrifts						
>\$10 billion	HFI loans	68.91%	75.42%	72.19%	___ ^a	___ ^a
< \$1 billion	HFI loans	70.69%	71.65%	69.91%	67.20%	64.87%
>\$1 billion, <\$10 billion	HFI loans	71.12%	68.61%	63.41%	59.82%	61.01%
>\$10 billion	HFI Loans	65.25%	67.03%	60.85%	58.47%	55.51%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Assets and Liabilities Measured at Fair Value Through Earnings on a Recurring Basis through Income

Assets measured at fair value through earnings on a recurring basis comprised mainly trading assets, nontrading derivative assets, and nonfinancial assets such as servicing rights for mortgages for which the fair value option has been elected.⁴

Trading Assets

Trading assets generally include both debt and marketable equity securities bought and held primarily to be sold in the near term. Trading activities typically involve active and frequent buying and selling to generate profits on short-term movements in market prices. Trading assets also include derivative contracts held for trading purposes in gain positions. Table 17 shows that trading assets did not represent a significant percentage of failed thrifts' assets from 2007-2011.

Table 17: Trading Assets as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	Trading assets	0.00%	0.00%	0.00%	0.01	0.00%
>\$1 billion, <\$10 billion	Trading assets	0.00%	0.13%	0.20%	0.05%	0.00%
>\$10 billion	Trading assets	1.28%	0.35%	0.00%	— ^a	— ^a
Open thrifts						
< \$1 billion	Trading assets	0.19%	0.12%	0.04%	0.01%	0.01%
>\$1 billion, <\$10 billion	Trading assets	0.56%	1.53%	1.68%	0.89%	0.03%
>\$10 billion	Trading assets	0.52%	0.37%	0.43%	0.11%	0.17%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Nontrading Assets

Nontrading assets measured at fair value on a recurring basis include, among other things, nontrading derivative contracts in gain positions. Most thrifts did not have any significant holdings of such nontrading

⁴ASC 825 (formerly FAS 159), "The Fair Value Option for Financial Assets and Financial Liabilities," (February 2007) allows a one-time election to report certain financial instruments at fair value. At initial recognition for certain financial assets and liabilities, an entity may irrevocably elect fair value as the initial and subsequent measurement attribute, with changes in fair value included in current earnings.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

assets (table 18). Even for open thrifts that have relatively more of such nontrading assets than failed thrifts, the level of these assets is less than 2.75 percent of their total assets.

Table 18: Nontrading Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	Nontrading assets	0.33%	0.26%	0.28%	2.94%	14.68%
>\$1 billion, <\$10 Billion	Nontrading assets	0.02%	0.30%	0.50%	0.03%	0.01%
>\$10 billion	Nontrading assets	0.87%	1.24%	1.15%	— ^a	— ^a
Open thrifts						
< \$1 billion	Nontrading assets	0.80%	0.76%	0.41%	0.29%	0.48%
>\$1 billion, <\$10 billion	Nontrading assets	0.34%	1.32%	1.68%	1.40%	1.03%
>\$10 billion	Nontrading assets	1.76%	1.71%	2.10%	2.71%	2.34%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Nonfinancial Assets

Nonfinancial assets measured at fair value through earnings on a recurring basis consist of mortgage servicing rights (MSRs) for which a fair value option has been elected. Failed thrifts did not have significant amounts of such nonfinancial assets (table 19). Failed thrifts also generally had fewer such nonfinancial assets than open thrifts. However, large failed thrifts generally had larger levels of such nonfinancial assets than most of the open thrifts because Washington Mutual, the largest thrift institution that failed, had a sizable level of mortgage servicing rights on its books.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Table 19: Nonfinancial Assets Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	Nonfinancial assets	0.04%	0.04%	0.08%	0.14%	0.37%
>\$1 billion, <\$10 billion	Nonfinancial assets	0.25%	0.27%	0.34%	0.21%	0.19%
>\$10 billion	Nonfinancial assets	2.21%	1.18%	1.28%	— ^a	— ^a
Open thrifts						
< \$1 billion	Nonfinancial Assets	0.19%	0.19%	0.18%	0.20%	0.26%
>\$1 billion, <\$10 Billion	Nonfinancial Assets	0.29%	0.28%	0.42%	0.33%	0.42%
>\$10 billion	Nonfinancial Assets	0.86%	0.84%	0.39%	0.31%	0.29%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Liabilities

Liabilities measured at fair value through earnings on a recurring basis include trading liabilities such as securities an institution sold but did not own and therefore is obligated to purchase at a future date (short positions), derivative contracts held for trading purposes in loss positions, nontrading derivative contracts in loss positions, and those liabilities for which a bank elects to measure at fair value on a recurring basis under the fair value option. Failed thrifts did not have a significant amount of such trading liabilities (table 20). Failed thrifts also had fewer such trading liabilities than open thrifts, particularly large open thrifts.

Table 20: Liabilities Measured at Fair Value Through Earnings on a Recurring Basis as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	Liabilities	0.01%	0.01%	0.00%	0.01%	0.02%
>\$1 billion, <\$10 billion	Liabilities	0.00%	0.05%	0.04%	0.12%	0.30%
>\$1 billion	Liabilities	0.04%	0.15%	0.13%	— ^a	— ^a
Open thrifts						
< \$1 billion	Liabilities	0.26%	0.19%	0.00%	0.00%	0.00%
>\$1 billion, <\$10 billion	Liabilities	0.30%	1.87%	2.41%	1.69%	1.53%
>\$1 billion	Liabilities	1.06%	0.48%	0.15%	0.76%	0.76%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Assets Measured at Fair Value on a Non-Recurring Basis Through Income

Securities Held to Maturity

Investments in debt securities classified as held to maturity (HTM) are measured at amortized cost but if any decline in fair value is other than temporary, credit losses are recognized in earnings. The held-to-maturity category includes only debt securities that management has both the positive intent and ability to hold until maturity.

As illustrated in table 21, investment securities classified as HTM represented less than 4 percent of assets held for failed thrifts with less than \$10 billion in assets. For failed thrifts with more than \$10 billion in assets, HTM securities ranged between 2 percent and 5 percent. HTM securities for open thrifts were not available.

Table 21: HTM Securities as a Percentage of Total Assets for Failed Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
< \$1 billion	HTM securities	2.08%	1.16%	1.32%	1.71%	0.33%
>\$1 billion, <\$10 billion	HTM securities	2.8%	3.1%	2.7%	3.5%	0.2%
>\$10 billion	HTM securities	1.79%	4.94%	3.01%	— ^a	— ^a

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Securities Available for Sale

Investments in debt securities that are not classified as trading securities or as HTM securities are classified as available-for-sale (AFS) securities. AFS securities also include equity securities that have readily determinable fair values and are not classified as trading securities. If the fair value of an AFS security declines below its amortized cost, and the decline is other than temporary, credit losses are recognized in earnings.

As illustrated in table 22, AFS securities represented the largest percentage of assets held after loans HFI. For failed thrifts, AFS securities ranged between 6 percent and 10 percent of total assets compared to 12 percent and 20 percent for open thrifts. On average, large open thrifts held the highest percentages of AFS securities.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Table 22: AFS Securities as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	AFS securities	8.36%	7.63%	7.88%	9.65%	7.87%
>\$1 billion, <\$10 billion	AFS securities	5.60%	5.28%	4.99%	8.52%	8.47%
>\$10 billion	AFS securities	8.44%	6.29%	7.88%	— ^a	— ^a
Open thrifts						
< \$1 billion	AFS securities	11.50%	10.96%	11.05%	11.66%	12.74%
>\$1 billion, <\$10 billion	AFS securities	12.11%	12.48%	15.50%	19.05%	19.62%
>\$10 billion	AFS securities	14.56%	13.92%	14.85%	19.32%	20.20%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

As a result of an April 2009 change to the relevant GAAP standard, an OTTI loss of either an AFS or HTM debt security, in certain circumstances, is separated into (1) the credit loss amount, which is recognized in earnings and (2) the loss amount related to all other factors (noncredit loss), which is recognized in other comprehensive income, net of applicable taxes.

Assets Measured at the Lower-of-Cost-or-Fair-Value

Loans Held for Sale

Under GAAP, HFS loans originated with the intent to sell in the secondary market to government-sponsored entities and other investors (including other FDIC-insured institutions) are carried at the lower of cost or fair value, unless the institution has elected to account for the loans at fair value under the fair value option. Institutions can transfer loans into or out of the HFS classification as a result of changes in intentions regarding

whether the loans will be sold or HFI. Transfers between categories, however, are recorded at the lower of cost or fair value.⁵

HFS loans did not represent a significant percentage of assets held by thrifts. On average, failed thrifts with less than \$10 billion in assets held about 5 percent of their assets in HFS loans (table 23). With the exception of 2007, the percentage of HFS assets are generally lower for failed thrifts with over \$10 billion in assets compared to open thrifts of similar size. In 2007 and 2008, a few large thrifts started transferring a significant amount of HFS loans into their HFI portfolio as a result of the tightening in the secondary market for nonagency mortgage loans. Appendix VI provides further analysis of these transfers.

Table 23: HFS Loans as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	HFS loans	2.82%	2.55%	1.95%	2.18%	0.18%
>\$1 billion, <\$10 billion	HFS loans	3.45%	1.60%	2.36%	5.13%	1.12%
>\$10 billion	HFS loans	6.81%	1.26%	1.05%	— ^a	— ^a
Open thrifts						
< \$1 billion	HFS loans	1.07%	1.13%	1.20%	1.28%	1.02%
>\$1 billion, <\$10 billion	HFS loans	2.07%	2.13%	2.61%	2.19%	1.38%
>\$10 billion	HFS loans	5.30%	2.29%	1.47%	0.96%	2.41%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Other Real Estate Owned

Other Real Estate Owned (OREO) usually includes assets repossessed through a foreclosure process for defaulted loans. Generally, assets acquired through, or in lieu of, loan foreclosure are held for sale and are initially recorded at the estimated fair value of the collateral less costs to

⁵The OCC Bank Accounting Advisory Series states that a bank should transfer loans from the held-for-investment category to the HFS category when it no longer has the intent and ability to hold the loans for the foreseeable future or until maturity or payoff. However, such changes in intent followed by subsequent sales of the loan in the near term, would likely cause increased skepticism and scrutiny by the auditor and examiner, especially if the sale or transfer occurs during the period the bank originally considered its foreseeable future.

sell at the date of foreclosure, establishing a new cost basis. Subsequent to foreclosure, periodic valuations are performed and the assets are carried at the lower of their cost basis or estimated fair value less cost to sell.⁶

In early 2007 and 2008, thrift institutions had little exposure to foreclosed assets (table 24). However, as the financial crisis deepened and the real estate downturn became more severe, delinquencies increased rapidly and thrifts foreclosed more properties, particularly smaller thrifts. Compared to open thrifts, failed thrifts had a larger share of OREO assets.

Table 24: OREO Assets as a Percentage of Total Assets for Failed and Open Thrifts, 2007-2011

Asset size	Description	2007	2008	2009	2010	2011
Failed thrifts						
< \$1 billion	OREO	0.33%	1.16%	2.34%	4.16%	6.07%
>\$1 billion, <\$10 billion	OREO	0.18%	0.84%	1.73%	1.81%	2.47%
>\$10 billion	OREO	0.26%	0.96%	4.19%	— ^a	— ^a
Open thrifts						
< \$1 billion	OREO	0.17%	0.34%	0.69%	0.91%	0.95%
>\$1 billion, <\$10 billion	OREO	0.11%	0.32%	0.54%	0.47%	0.42%
>\$10 billion	OREO	0.14%	0.30%	0.33%	0.41%	0.35%

Source: GAO analysis of FDIC thrift financial report data.

^aNo large thrifts failed in 2010 or 2011.

Declines in Regulatory Capital at Failed Thrifts Due to Rising Levels of Nonperforming Loans and Resulting Increased Credit Losses

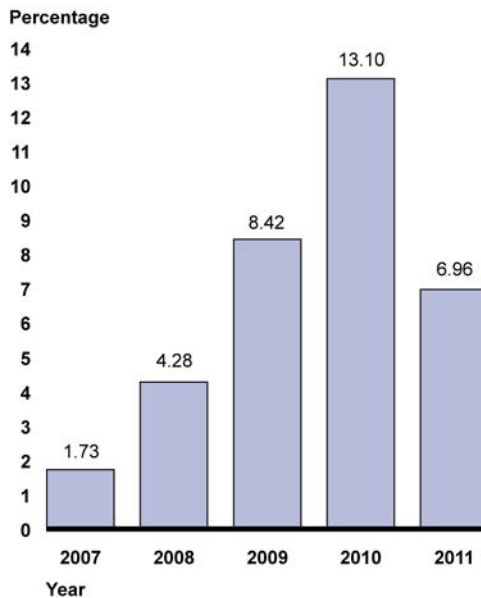
Small Failed Thrifts

For small failed thrifts, as the financial crisis that began in 2007 progressed, the levels of nonperforming loans rose from an average of

⁶See, for example, FDIC Financial Institution Letter 62-2008: Guidance on Other Real Estate.

less than 2 percent of total loans in 2007 to over 13 percent in 2011 (fig. 22).

Figure 22: Nonperforming Loans as a Percentage of Total Loans for Small Failed Thrifts, 2007-2011

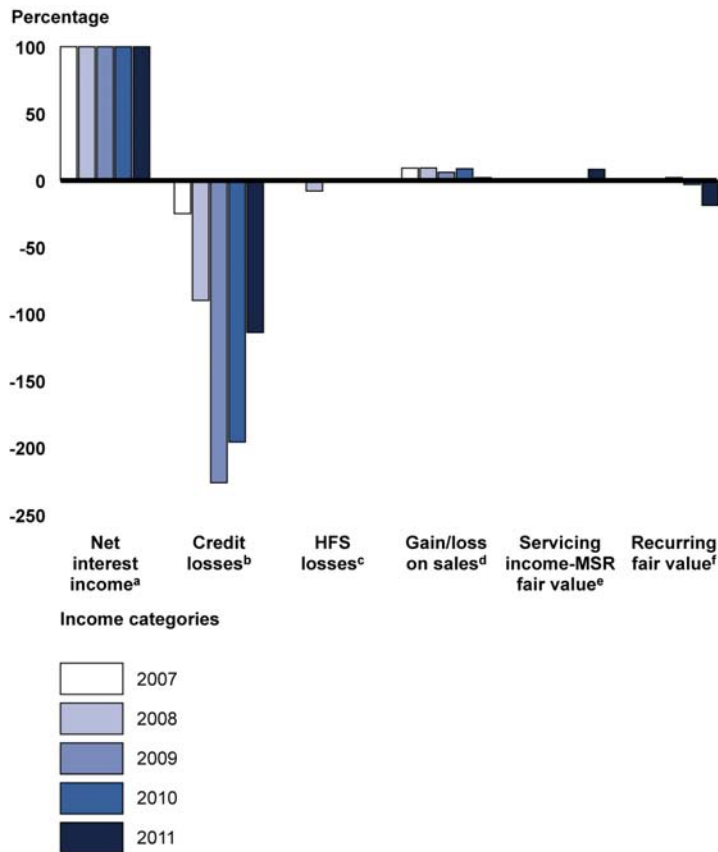


Source: GAO analysis of FDIC thrift financial report data.

The rising levels on nonperforming loans appear to be the key factor driving the increases in provisions for credit losses and the resulting reduction in net interest income and regulatory capital. For failed small thrifts, credit losses were by far the largest contributor to these institutions' losses relative to any other asset class. For example, from 2007 to 2011, credit losses accounted for on average over 130 percent of net interest income while net losses from the sale of HFS assets averaged about 2 percent of net interest income (fig. 23). During that same period, net losses from recurring fair value measurements were less than 4 percent.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Figure 23: Income Categories as a Percentage of Net Interest Income for Small Failed Thrifts, 2007-2011



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

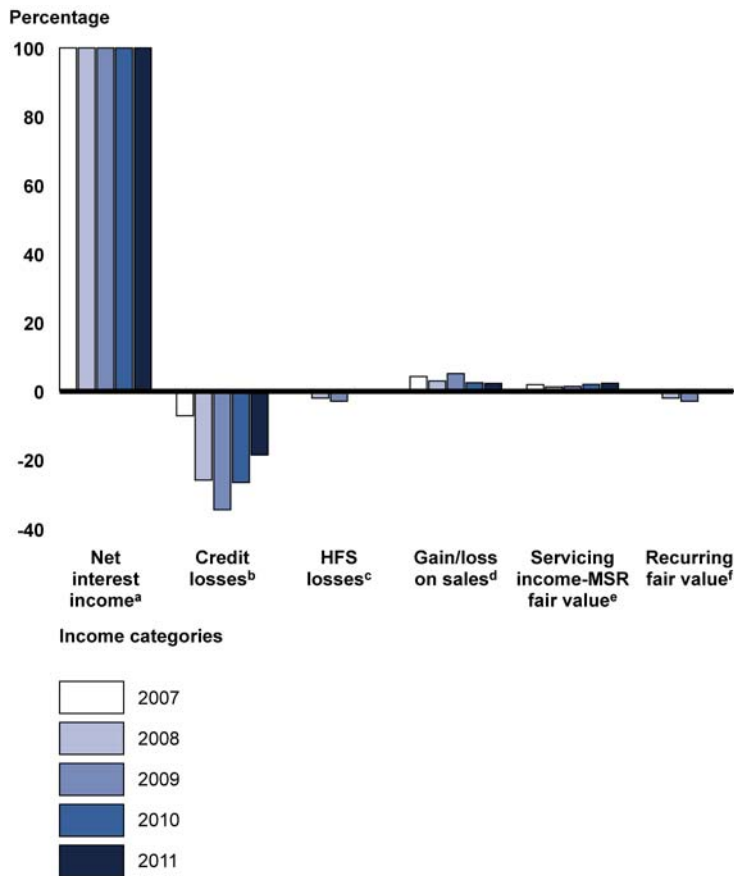
^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

In contrast, the magnitude of credit losses experienced by small open thrifts from 2007 through 2011 was significantly less than what the failed thrifts experienced (fig.24).

Figure 24: Income Categories as a Percentage of Net Interest Income for Small Open Thrifts, 2007-2011



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

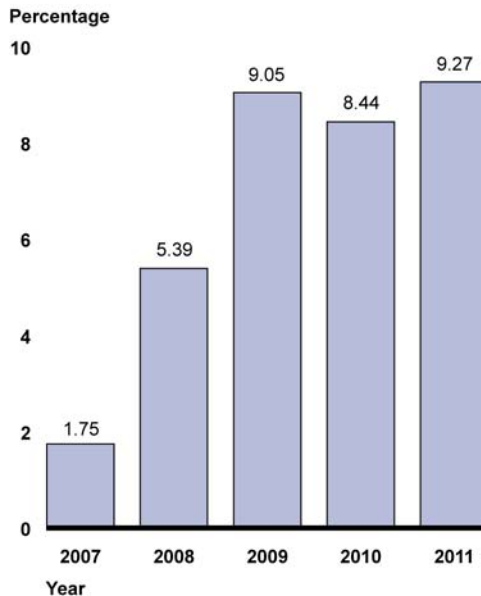
⁶The impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

⁷The impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Medium-Size Thrifts

The level of nonperforming loans for medium-size failed thrifts grew from less than 2 percent in 2007 to over 9 percent in 2009 (fig. 25). As with the small failed thrifts, the rising levels of nonperforming loans appear to be the key factor driving the increases in credit losses for medium-size failed thrifts.

Figure 25: Nonperforming Loans as a Percent of Total Loans for Medium-Size Failed Thrifts, 2007-2011

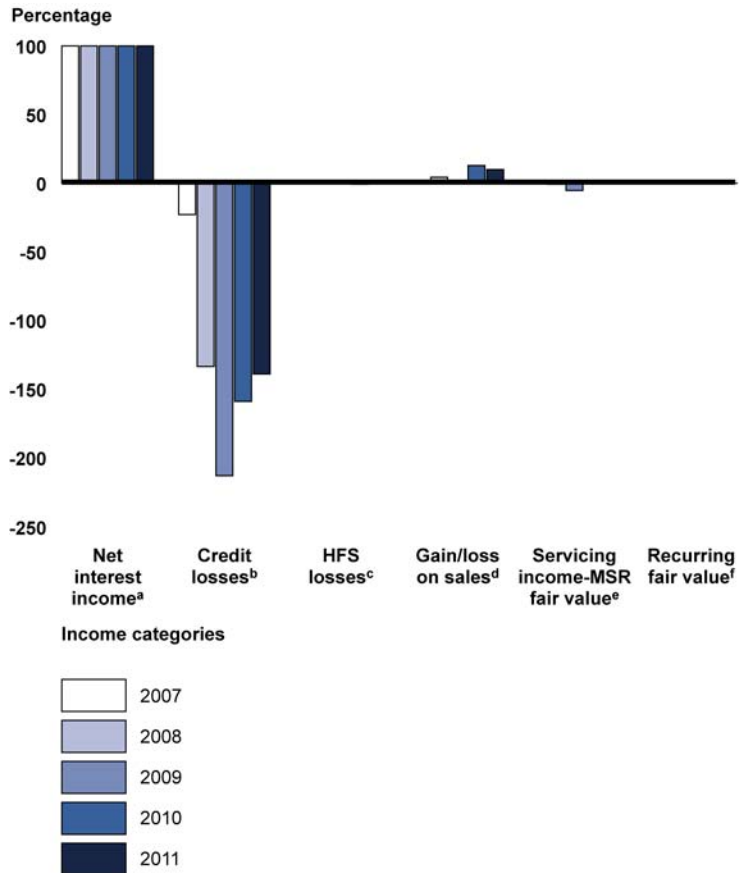


Source: GAO analysis of FDIC thrift financial report data.

The large credit losses largely drove the failed thrifts' decrease in earnings and regulatory capital. For example, from 2007 through 2009, credit losses accounted for on average over 133 percent of net interest income of medium-size failed thrifts while net losses from HFS assets averaged less than one half of 1 percent of net interest income (fig. 26).

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Figure 26: Income Categories as a Percentage of Net Interest Income for Medium-size Failed Thrifts, 2007-2011



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

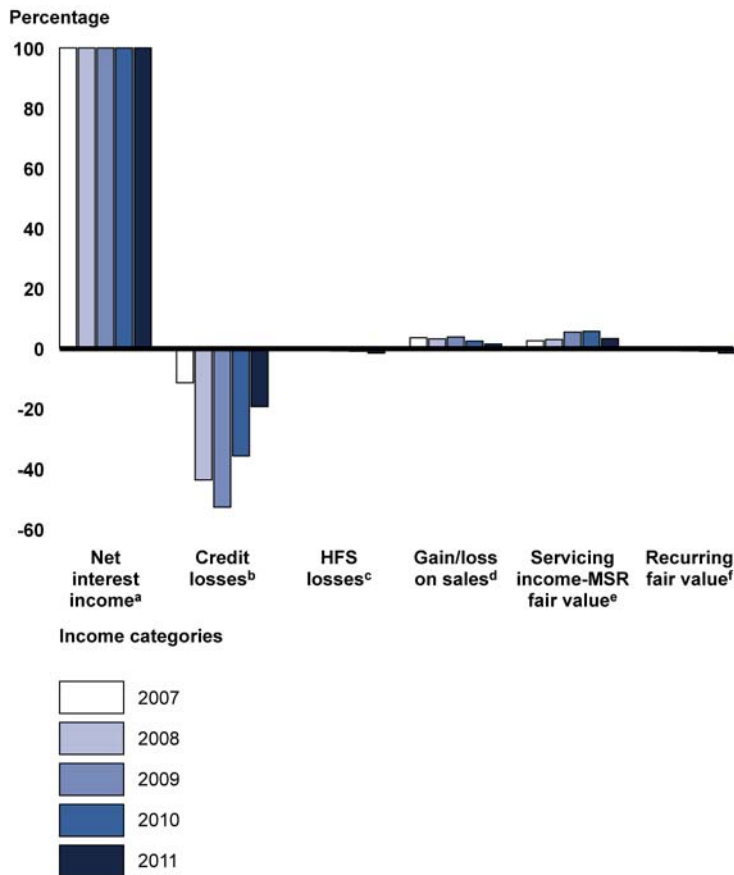
^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

During that same time frame, the magnitude of the credit losses experienced by open medium-size thrifts was significantly less (fig. 27).

Figure 27: Income Categories as a Percentage of Net Interest Income for Medium-Size Open Thrifts, 2007-2011



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

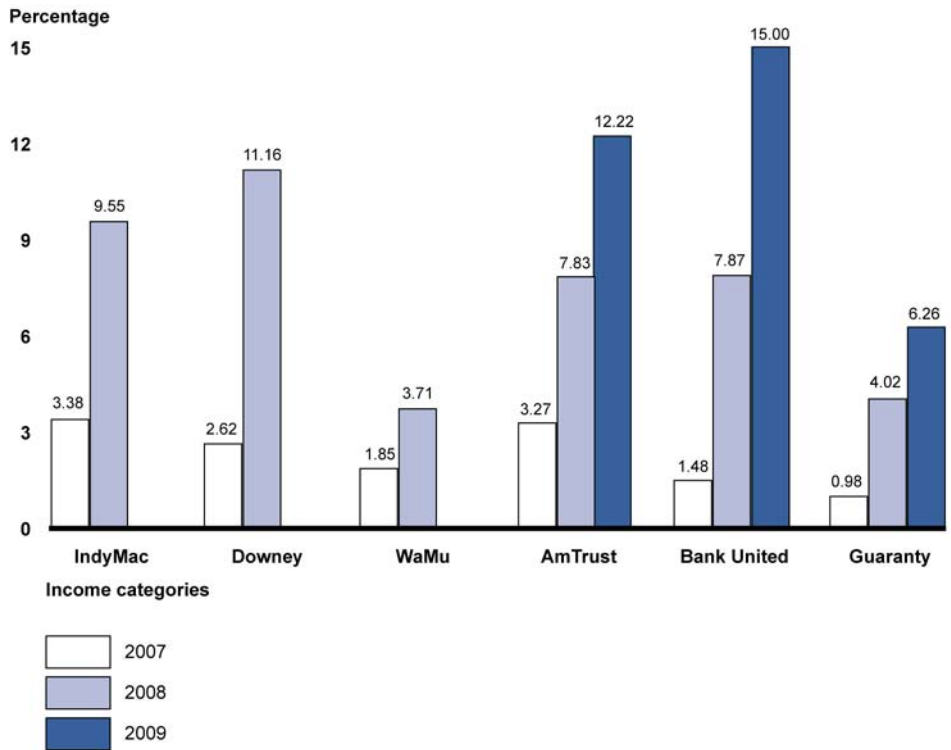
^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

Large Failed Thrifts

The impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

The large failed thrifts' decrease in earnings and regulatory capital also was mostly driven by the rising levels of nonperforming loans. For example, in 2007 large thrifts' nonperforming loans averaged about 2 percent of their total assets compared with 7.36 percent in 2008, when WaMu, IndyMac, and Downey failed (fig.28). However, from 2008 through 2009, nonperforming loans for AmTrust, BankUnited, and Guaranty, the large thrifts that failed in 2009, grew from an average of almost 7.36 percent to over 10 percent.

Figure 28: Nonperforming Loans as a Percent age of Total Loans for Large Failed Thrifts, 2007-2009



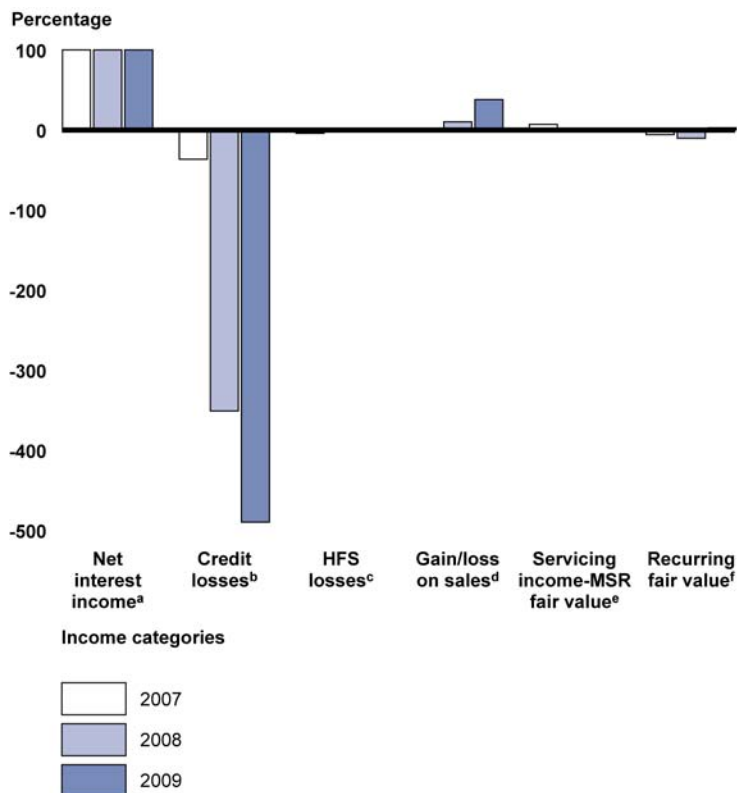
Source: GAO analysis of FDIC thrift financial report data.

The large credit losses largely drove the failed thrifts' decrease in earnings and regulatory capital. For example, from 2007 to 2009, credit losses accounted for on average close to 300 percent of net interest

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

income while net losses from HFS assets and recurring fair averaged about 2 percent and 4.5 percent, respectively. During that same time period, the magnitude of credit losses at open thrifts of similar size averaged only about 33 percent (figs. 29 and 30).

Figure 29: Income Categories as a Percentage of Net Interest Income for Large Failed Thrifts, 2007-2009



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

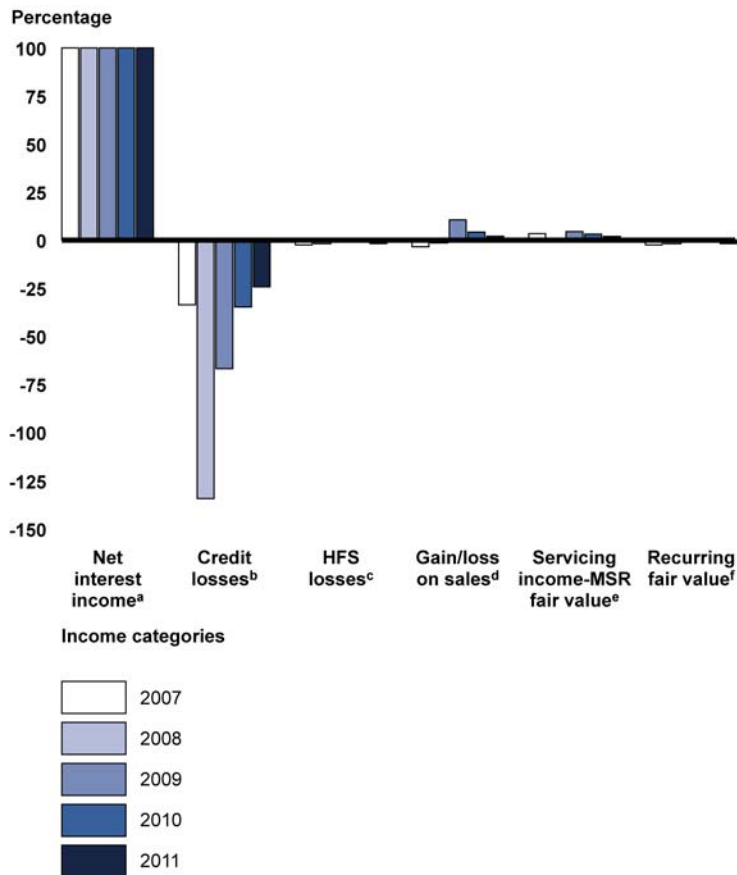
^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Figure 30: Income Categories as a Percentage of Net Interest Income for Large Open Thrifts, 2007-2011



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

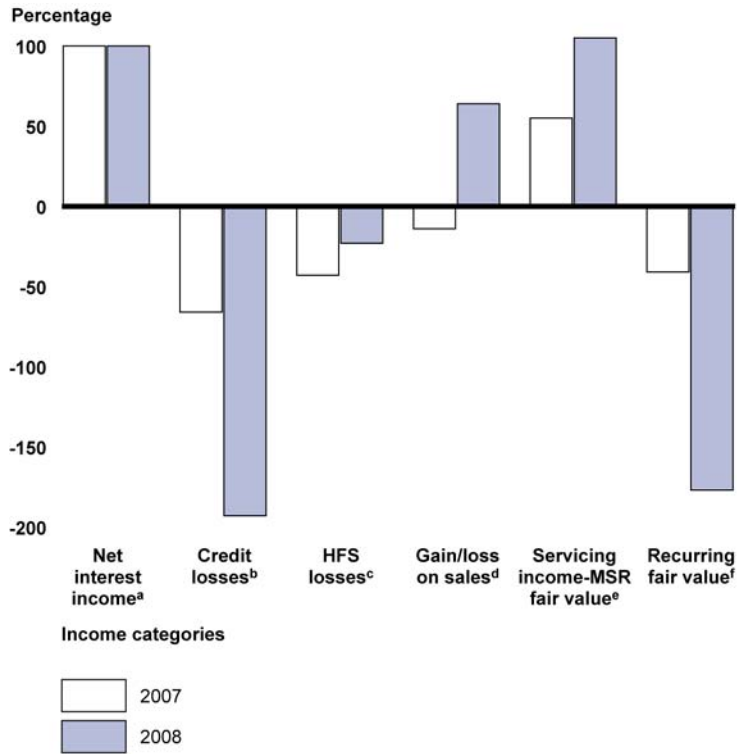
IndyMac

The recognition of incurred credit losses and losses recognized for the decrease in fair value of its portfolio of HFS loans, investment securities, and derivatives contributed to the decline in regulatory capital at IndyMac (fig. 31). According to its 2007 Form 10-K, IndyMac was severely impacted by worsening credit conditions as home prices and home sales declined. As a result, it experienced a significant increase in delinquencies in many products, and thus recorded significant charges, related to credit risk in its HFI portfolio and other construction portfolios. In addition, IndyMac recorded significant fair value losses in its loans held for sale, investment- and noninvestment-grade securities and residual securities. Offsetting these decreases in fair value was an increase in fair value of the bank's MSR's.

IndyMac also recognized its largest write-downs for its noninvestment grade securities in 2007 and attributed a significant portion of these write-downs to incurred credit losses embedded in these securities. During 2008, IndyMac recognized additional charges for credit losses and related write-downs.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Figure 31: IndyMac Income Categories as a Percentage of Net Interest Income, 2007-2008



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

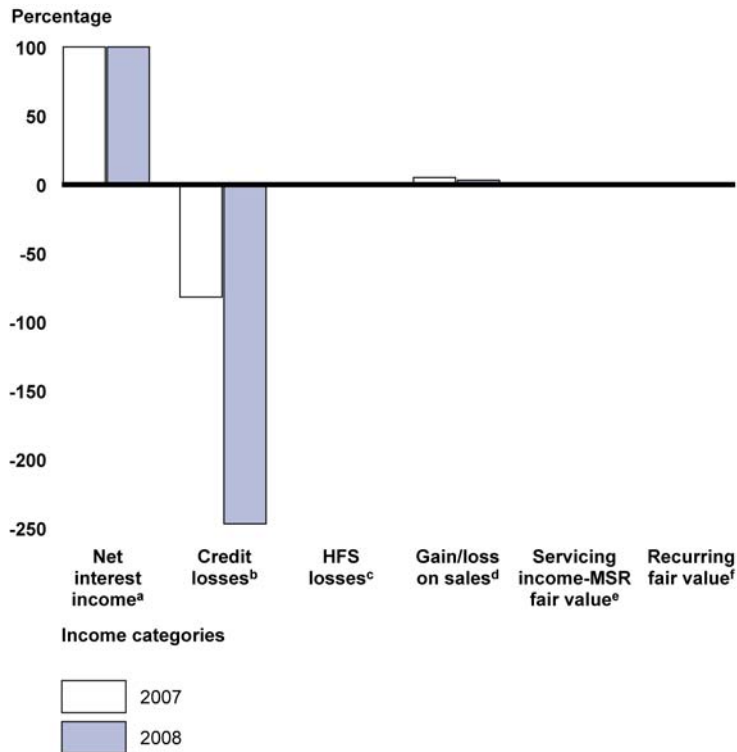
^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Downey

According to regulatory filings, credit losses were the most significant cause of decline in income at Downey, and there were no losses recognized for recurring fair value measurements (fig. 32).

Figure 32: Downey Income Categories as a Percent of Net Interest Income, 2007-2008



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

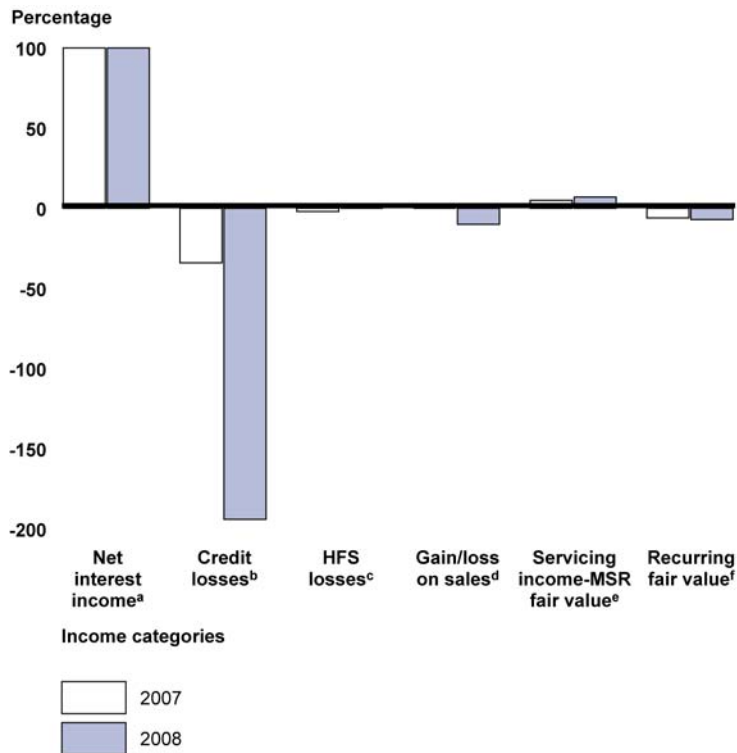
Washington Mutual

Figure 33 shows that credit losses were the most significant cause of declines in income at WaMu. Although WaMu recognized fair value losses during the review period, these losses were significantly less than the credit losses recognized during the same periods. In its 2007 Form 10-K, WaMu disclosed that it recorded a net loss for 2007 of \$67 million compared with net income of \$3.56 billion in 2006. It noted the decline was primarily the result of significant credit deterioration in its single-family residential mortgage loan portfolio and significant disruptions in the capital markets, including the sudden and severe contraction in secondary mortgage market liquidity for nonconforming residential loan products. Based on disclosures made in its 2007 annual regulatory filing, during 2007 WaMu recognized approximately \$500 million of fair value losses for trading securities, which primarily consisted of below investment grade retained interests in credit card securitizations, and \$200 million of losses for fair value write-downs of nonconforming residential mortgage loans HFS. In contrast, it recognized \$3.1 billion of credit losses during that year.

According to its first and second quarter 2008 Forms 10-Q, during the first quarter of 2008, WaMu recognized approximately \$600 million of fair value gains due to derivatives that economically hedged the fair value of MSRs, which were partially offset by fair value declines in the related MSRs. During the second quarter of 2008, WaMu recognized losses on the derivatives it used to economically hedge the fair value of MSRs, which again were partially offset by gains in the fair value of its MSRs. In addition to the fair value effects of hedging activities, WaMu recognized approximately \$500 million of fair value losses for credit card retained interests and securities backed by Alt-A loans that were accounted for as trading securities during the first 6 months of 2008, which was significantly less than the \$9.4 billion of credit losses recognized during the same period.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Figure 33: Washington Mutual Income Categories as a Percentage of Net Interest Income, 2007-2008



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

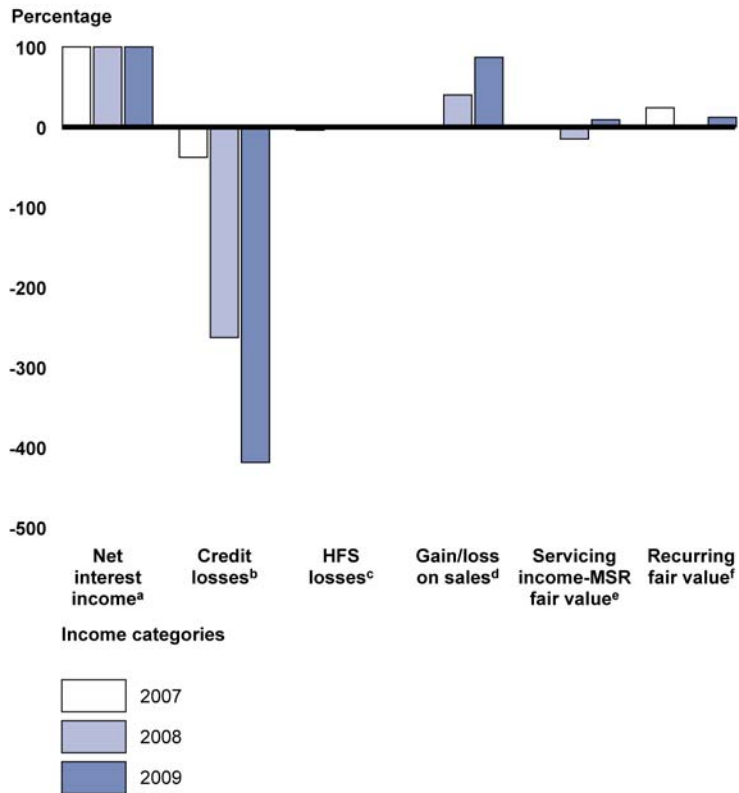
AmTrust

Credit losses resulting from increased nonperforming loan levels were the main driver for the decline in income at AmTrust (fig. 34). In 2007, AmTrust's nonperforming loans were already over 3 percent of its total loans and had more than doubled in 2008. In 2009, AmTrust's

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

nonperforming loans climbed to over 12 percent. The Treasury IG's material loss review for AmTrust identified significant losses in AmTrust's loan portfolio associated with its high concentrations of ADC loans and high-risk residential mortgage loans, including interest-only, reduced documentation, and subprime loans. As the levels on nonperforming loans increased rapidly in 2008 and 2009, AmTrust's net losses exceeded \$513 million and \$308 million, respectively. From 2007 to 2009, AmTrust's credit losses averaged close to 250 percent of net interest income. The substantial credit losses associated with AmTrust's growing nonperforming loans eroded the bank's earnings and capital. On November 4, 2009, OTS notified AmTrust that it had become significantly undercapitalized and required AmTrust to file a capital restoration plan by November 30, 2009. On December 1, 2009, AmTrust informed OTS that its efforts to raise capital were unsuccessful, and that there were no known near-term investors or acquirers.

Figure 34: AmTrust Income Categories as a Percentage of Net Interest Income, 2007-2009



Source: GAO analysis of FDIC thrift financial report data.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

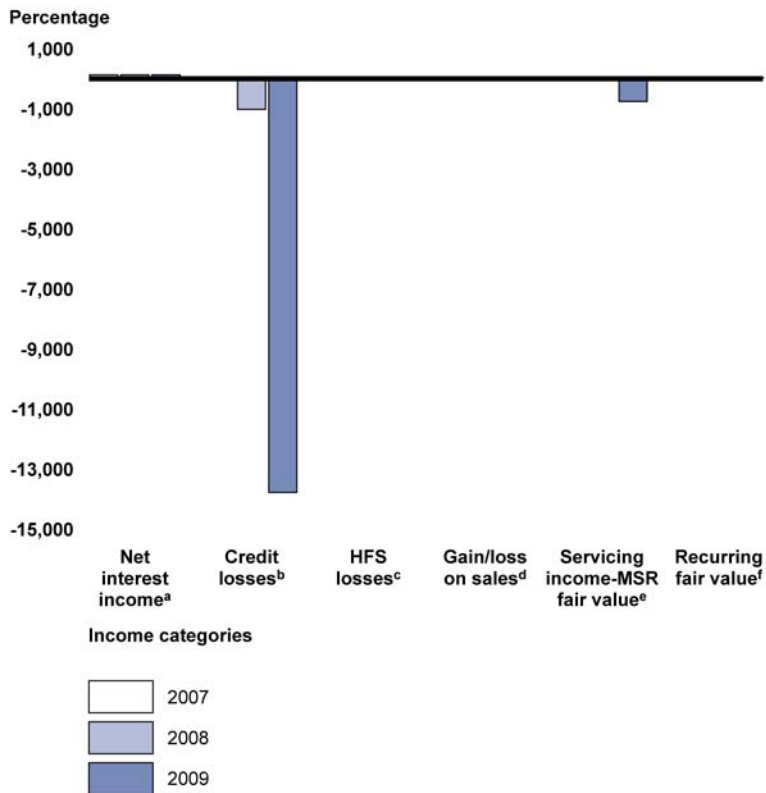
^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

BankUnited

Credit losses resulting from increased nonperforming loan levels were the main driver for the decline in income at BankUnited. In 2007, BankUnited nonperforming loans were just below 2 percent of its total loans. However, by December 2007, BankUnited's payment option adjustable rate mortgages increased to \$7.5 billion, comprising 52 percent of its total assets. The rapid decline in real estate market resulted in the deterioration of the thrift's asset quality and a rise in nonperforming loans, which led to significant credit losses that diminished earnings. For example, in 2007, BankUnited's credit losses averaged about 27 percent of net interest income, but in 2008, BankUnited's credit losses substantially increased to an average of 1,000 percent of net interest income (fig.35). BankUnited's losses during the first quarter of 2009 almost reached 14,000 percent of net interest income. The increase in BankUnited's nonperforming real estate loans in all categories, totaling \$1.8 billion as of March 31, 2009, resulted in increases in its loan loss allowance and large losses that significantly diminished the thrift's earnings and capital.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

Figure 35: BankUnited Income Categories as a Percentage of Net Interest Income, 2007-2009



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.

^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.

^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.

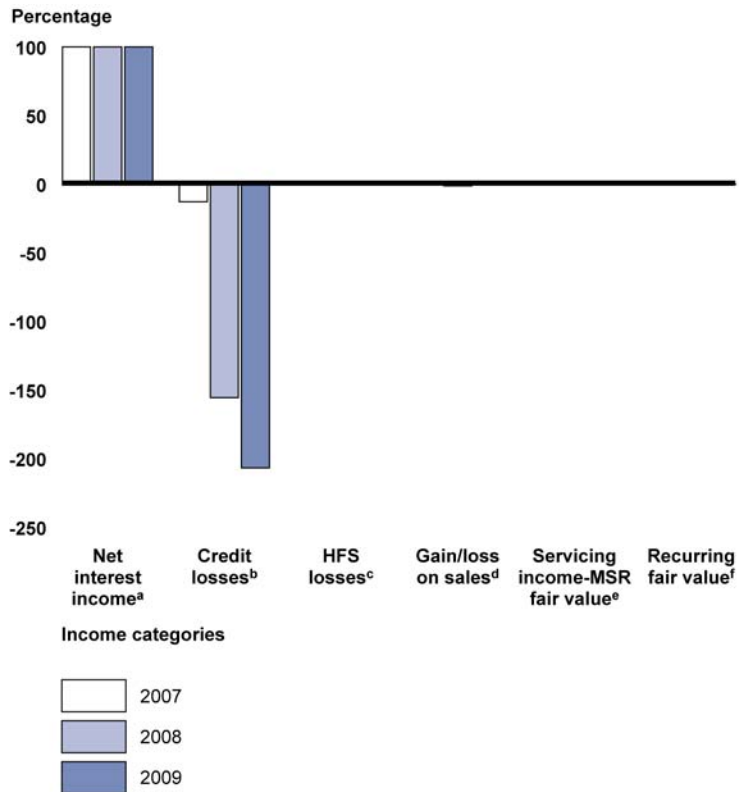
^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Guaranty

Large credit losses resulting from increased nonperforming loan levels coupled with significant losses in nonagency mortgage-backed securities

were the main drivers for the decline in income and resulting failure at Guaranty. Guaranty held a substantial level of nontraditional mortgage loans with option ARM features concentrated in volatile real estate markets such as California, Florida, and Arizona. In its regulatory filing for third quarter 2008, Guaranty disclosed that credit losses for nonperforming loans increased from \$33 million in December 2007 to \$58 million in March of 2008, and to \$99 million in June of 2008. From 2008 to 2009, Guaranty's credit losses averaged 181 percent of net interest income (fig.36). In 2008, Guaranty also sustained a \$1.2 billion loss in the value of its \$3.5 billion nonagency mortgage backed securities portfolio. The mounting losses depleted its capital.

Figure 36: Guaranty Income Categories as a Percentage of Net Interest Income, 2007-2009



Source: GAO analysis of FDIC thrift financial report data.

^aNet interest income reported in the thrift financial report, schedule statement of operations. We show net interest income as 100 percent and for each income category calculate its percentage of net interest income.

^bCredit losses are based on provisions for losses on interest bearing assets as reported in the thrift financial report schedule statement of operations, which includes fair value losses recognized on foreclosed property and impairment losses recognized on debt and equity securities.

Appendix V: Analysis of the Impact of Fair Value Accounting on Recent Thrift Institution Failures

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- ^cThe impact on income of losses on HFS loans is based on the lower-of-cost-or-fair-value adjustments made to HFS assets as reported in the thrift financial report schedule statement of operations of the thrift financial report, which does not include gains or losses recognized upon sale.
- ^dThe impact on income of gain/loss on sales is based on the sale of HFS assets and AFS securities as reported in the thrift financial report schedule statement of operations, which does not include impairment losses.
- ^eThe impact on income of servicing income is based on mortgage loan servicing fees and servicing amortization and valuation adjustments as reported in the thrift financial report schedule statement of operations.
- ^fThe impact on income of recurring fair value measurements is based on gains and losses on financial assets and liabilities carried at fair value as reported in the thrift financial report schedule statement of operations.

Appendix VI: Analysis of HFI Loans Compared to HFS Loans of Large Banks

Loans held for investment (HFI) recorded at amortized cost represent for most banks the largest proportion of their assets between 2007 and 2011. Conversely, loans held for sale (HFS) represented a much smaller share of assets for most of the larger banks and thrifts. However, as a result of severe contraction in the secondary market for mortgage-backed securities in 2007, several of the large banks and thrifts that failed between 2008 and 2011 determined that a significant amount of real estate loans that had been designated as HFS prior to the market disruption were no longer held for sale and transferred the loans to HFI. HFI loans are those loans that the bank has the intent and ability to hold for the foreseeable future or until maturity or payoff.¹ Failed institutions' primary reason for reclassifying HFS loans to HFI was to better reflect their prevailing intentions in light of the severity and duration of unfavorable secondary market conditions that existed during the crisis, especially if they did not anticipate liquidity to return in the foreseeable future. In addition, HFS loans are more susceptible to earnings volatility particularly when real estate values are falling because the accounting standards require that these loans be carried on the balance sheet at the lower of cost or fair value, with any declines reflected in current earnings.² Loans held for investment, by contrast, are reported on the balance sheet at amortized cost, net of an impairment allowance for estimated credit losses (loan loss allowance). Impairment on HFI loans must be recognized when credit losses are determined to probable and estimable. An increase to the loan loss allowance results in a charge to expenses, termed a provision for loan losses, which reduces current earnings. We discuss five large commercial banks and thrifts that failed between 2008 and 2011 that reclassified significant amounts of HFS loans to HFI during the financial crisis: AmTrust Bank (AmTrust); IndyMac Bank (IndyMac); Washington Mutual Bank (Wamu); Downey Savings and Loan, FB (Downey); and United Commercial Bank (UCB).

AmTrust

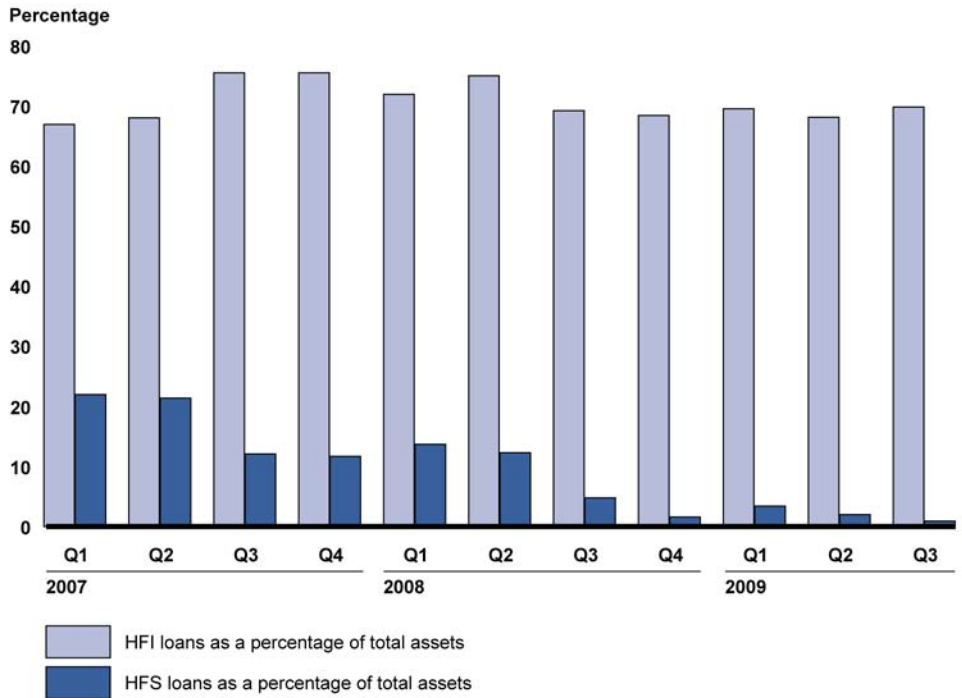
From the first quarter of 2007 to the first quarter of 2008, AmTrust's HFS loans ranged between about 12 percent to 21 percent of its total assets (fig. 37). In July 2008, AmTrust began curtailing the volume of its HFS

¹Call report instructions, schedule report of income RI-C.

²FASB Statement No. 65, *Accounting for Certain Mortgage Banking Activities* (SFAS 65), Paragraph 6, states that a mortgage loan transferred to a long-term investment classification shall be transferred at the lower of cost or fair value on the transfer date. Any difference between the carrying amount of the loan and its outstanding principal balance shall be recognized as an adjustment to yield by the interest method.

loans, which included a large volume of acquisition, development, and construction loans.

Figure 37: Amtrust Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets

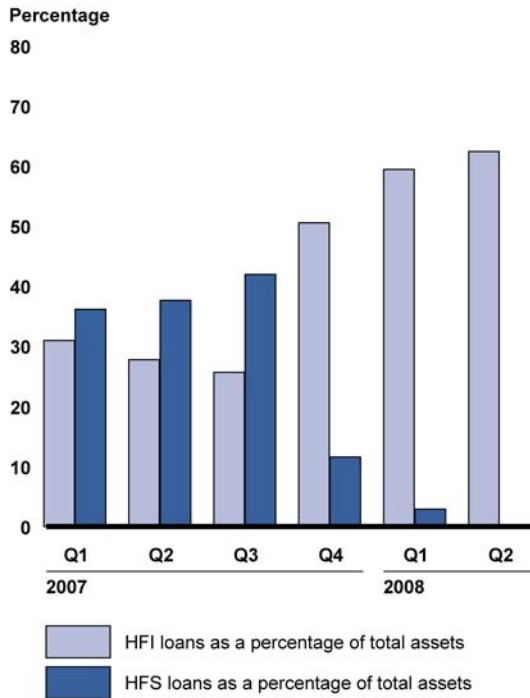


Source: GAO analysis of FDIC thrift financial report data.

IndyMac

IndyMac was the failed bank with the largest share of HFS loans as a percent of its total assets. From the first quarter of 2007 to the third quarter of 2007, IndyMac’s HFS loans ranged between about 36 percent to 42 percent of its total assets (fig. 38). However, as of the fourth quarter of 2007, it started curtailing the volume of its HFS loans, which included significant amounts of payment option adjustable rate mortgage loans. In its regulatory filing with the Securities Exchange Commission (SEC), IndyMac reported that in the fourth quarter of 2007, it transferred HFS loans with an original cost basis of \$10.9 billion to HFI loans as it no longer intended to sell these loans given the extreme disruption in the secondary mortgage market.

Figure 38: IndyMac Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets

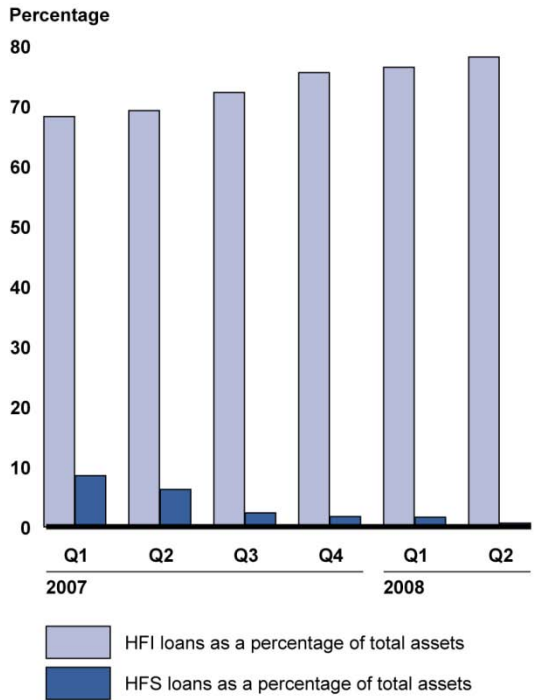


Source: GAO analysis of FDIC thrift financial report data.

WaMu

From the first quarter of 2007 to the fourth quarter of 2007, WaMu’s HFS loans declined from 8.5 percent to 1.7 percent of its total assets (fig.39). The company reported in its regulatory filings with the SEC that it transferred \$17 billion of real estate loans designated as HFS loans to its HFI loan portfolio, which represented substantially all of its loans designated as HFS prior to the market disruption.

Figure 39: WaMu Volume of HFI Loans Compared to HFS Loans as a Percent age of Total Assets

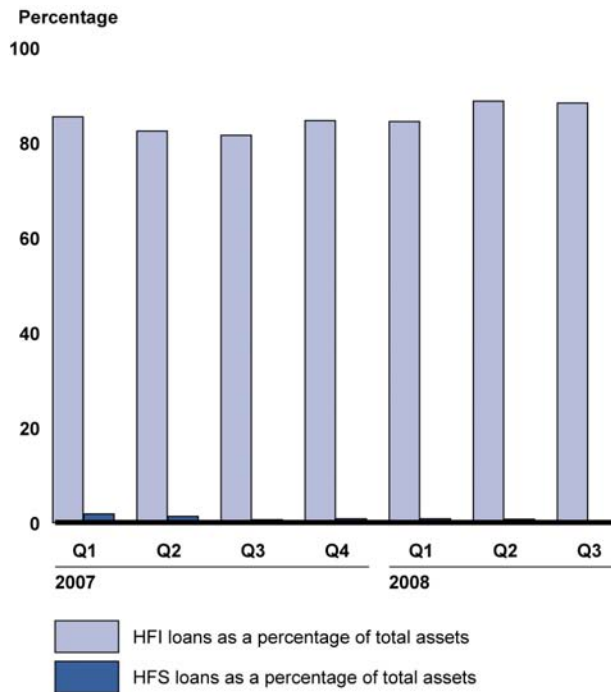


Source: GAO analysis of FDIC thrift financial report data.

Downey

From first quarter of 2007 to third quarter of the same year, Downey's volume of HFS loans declined from 1.8 percent to 0.6 percent (fig.40). Downey disclosed in a regulatory filing dated August 2007 that total loans and mortgage-backed securities, including those designated HFS, declined \$818 million during the second quarter of 2007 to a total of \$12.4 billion. The company also disclosed in regulatory filings that during the third quarter of 2008, loans HFI increased \$119 million while loans HFS declined \$78 million.

Figure 40: Downey Volume of HFI Loans compared to HFS Loans as a Percentage of Total Assets

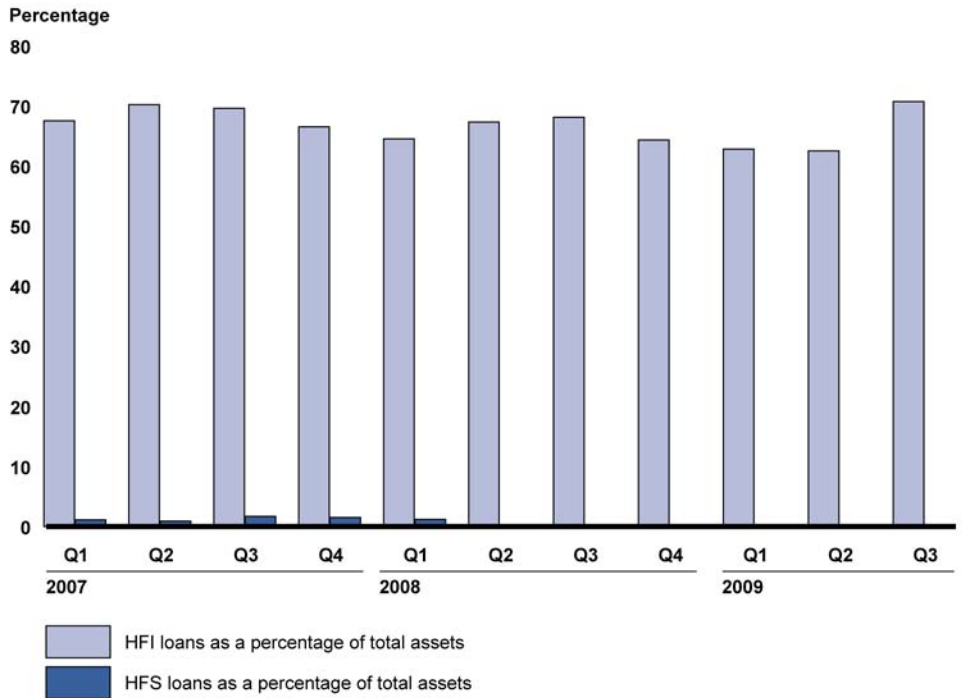


Source: GAO analysis of FDIC thrift financial report data.

UCB

From first quarter 2007 to first quarter of 2008, UCB's HFS loans ranged between 0.9 percent and 1.7 percent of total assets (fig. 41). In the second quarter of 2008 it began curtailing its HFS portfolio.

Figure 41: UCB Volume of HFI Loans Compared to HFS Loans as a Percentage of Total Assets



Source: GAO analysis of FDIC call report data.

Appendix VII: GAO Analysis of Net Credit Extended by Failing Banks and Acquiring Banks

To analyze the impact of bank failures on credit availability, we estimated net credit extended by failing banks in the quarters leading up to failure and by acquiring banks in the quarters following acquisition of a failed bank. We used the change in the size of a bank's loan portfolio over a quarter to measure the net amount of credit it extended over that quarter. Several factors affect the size of a bank's loan portfolio. It grows when the bank makes new loans or purchases existing loans. It shrinks when the bank charges off a delinquent loan; when the bank forecloses on a delinquent real estate loan, charges off the difference between the market and face values of the loan, and reclassifies the collateral as "other real estate owned;" and when a the bank sells or securitizes a loan. It also changes when loans are paid down, extended, or repurchased. Thus, the change in the size of a bank's loan portfolio is a measure of the net effect of increases in the amount of credit a bank is extending (e.g., from making new loans or purchasing loans) and reductions in the amount of credit a bank is extending (e.g., from charging-off delinquent loans or selling loans).

We used FDIC and Federal Financial Institutions Examination Council (FFIEC data on FDIC-insured commercial banks and savings banks (banks) over the period from 2006 through 2011. We first used an econometric model to estimate the relationship between net credit extended by banks and the characteristics of banks associated with the likelihood of failure—capital adequacy; asset quality; earnings; liquidity; ADC lending; nonfarm, nonresidential real estate lending; commercial real estate lending not secured by real estate; multifamily real estate lending; brokered deposits funding; and size. We included indicators for each quarter to control for factors affecting net credit extension that are common to all banks at the same time, such as the regulatory environment, the state of the market for bank products and services, and the condition of the overall economy. We have observations on each bank over one or more quarters (a panel) so we also included indicators for each bank to control for unobserved characteristics of banks that do not change over time. We estimated the parameters of the model using observations on all banks. We then used the estimated parameters along with observations on failed banks and acquiring banks to predict net credit extended by failing banks over the 2 years preceding failure and to predict net credit extended by acquiring banks over the period from one quarter preceding acquisition of a failed bank to six quarters following the acquisition of a failed bank. To examine the robustness of our results, we repeated our analysis separately for small and medium-sized banks. The number of large failed banks was not large enough for us to separately analyze large banks. We used this approach because it allowed us to

connect net credit extended by failed and acquiring banks to the characteristics of the balance sheets, rather than just their status as failed or acquiring banks, as these categories may not fully reflect the factors associated with net credit extension. In addition, our approach allowed us to improve our estimates by incorporating banks that neither failed nor acquired a failed bank as a control group since they may have had balance sheet characteristics that were similar to the characteristics of failed or acquiring banks for a period of time.

As shown in table 25, our econometric model suggests that many of the characteristics that help explain the likelihood of failure also help explain net credit extended by banks. Our estimates suggest that capital adequacy and asset quality were associated with more net credit, while ADC lending was associated with less net credit, all else being equal. In addition, higher earnings, nonfarm, nonresidential real estate lending, multifamily real estate lending, and size were also associated with less net credit, all else being equal.

Table 25: Estimated Effect of Bank Characteristics on Net Credit, 2006-2011

Characteristic	All banks	Small banks	Medium-sized banks
Capital adequacy	2.005 ^a (0.0720)	2.119 ^a (0.0729)	0.221 (0.289)
Asset quality	0.76 ^a (0.0493)	0.738 ^a (0.0503)	0.617 ^a (0.176)
Earnings	-4.168 ^a (0.314)	-4.407 ^a (0.336)	0.376 (0.644)
Liquidity	0.0133 (0.0199)	0.0215 (0.0213)	-0.0706 (0.0565)
ADC lending	-0.467 ^a (0.0358)	-0.489 ^a (0.0378)	-0.0203 (0.0878)
Non-farm, non-residential real estate lending	-0.555 ^a (0.0339)	-0.549 ^a (0.0342)	-0.170 (0.153)
Multifamily real estate lending	-0.818 ^a (0.133)	-0.854 ^a (0.141)	-0.339 (0.425)
Commercial real estate, construction, and land development loans not secured by real estate	-0.327 ^a (0.0844)	-0.315 ^a (0.0817)	-0.228 (0.619)
Brokered deposits	0.0208 (0.0301)	0.00301 (0.0254)	0.111 (0.0707)

Appendix VII: GAO Analysis of Net Credit Extended by Failing Banks and Acquiring Banks

Characteristic	All banks	Small banks	Medium-sized banks
Size	-6.046 ^a (0.941)	-3.926 ^a (0.979)	-13.70 ^a (2.302)
Observations	168,225	155,664	10,520
R-squared	0.336	0.406	0.060
Number of banks	8,307	7,644	548

Source: GAO analysis of data from FDIC and the Federal Financial Institutions Examinations Council.

Notes: This table shows the estimated parameters and standard errors for a regression of net credit extended by banks on capital adequacy, asset quality, earnings, liquidity, ADC lending, nonfarm, nonresidential real estate lending, multifamily real estate lending, commercial real estate lending not secured by real estate, brokered deposits, size, indicators for each quarter, and indicators for each bank. Parameters were estimated separately using observations on all banks, on small banks only, and on medium-sized banks only. Parameters for quarter and bank indicators are not reported. We used t-tests to determine statistical significance.

^aSignificant at the 1 percent level.

Our analysis of small banks produced estimates that are generally similar to the results of our baseline analysis of all banks. For medium-sized banks, our estimates suggest that net credit was positively associated with asset quality and negatively associated with size, but it was not significantly associated with any other characteristics.

We used the estimates from our econometric model to predict net credit extended by failing banks in the eight quarters preceding failure and by acquiring banks from the quarter preceding failure to six quarters following the acquisition of a failed bank (table 26). To do so, we first calculated the predicted value of net credit for every bank in every quarter using the actual values of the independent variables for each observation and the parameters we estimated with our baseline econometric model for all banks. Next, we calculated the average of the predicted values for observations on failed banks in the last quarter prior to failure to produce the average net credit extended by failing banks in the last quarter prior to failure. Similarly, we calculated the average of the predicted values for observations on failed banks two quarters prior to failure, the average of the predicted values of the observations on failed banks three quarters prior to failure, and so on up to eight quarters prior to failure. We also calculated the average of the predicted values for observations on acquiring banks one quarter prior to acquisition of a failed bank, the average of the predicted values for observations on acquiring banks the quarter they acquired a failed bank, the average of the predicted values for observations on acquiring banks the quarter after they acquired a failed bank, and so on up to six quarters after acquiring a failed bank.

Appendix VII: GAO Analysis of Net Credit Extended by Failing Banks and Acquiring Banks

Finally, we calculated the average of the predicted values for observations on open, nonacquiring banks to produce average predicted net credit for these banks for all quarters. We repeated these steps using only observations on small banks along with the estimated parameters for small banks and also using only observations on medium-sized banks along with the estimated parameters for medium-sized banks.

Table 26: Estimated Net Credit Extended by Failing, Acquiring, and Nonfailing, Nonacquiring Banks, 2008-2011

	Failing banks, quarters prior to failure (percent)								Average net credit extended by non-failing, non-acquiring banks (percent)
	8	7	6	5	4	3	2	1	—
All banks	3.6	2.2	0.9	-0.4	-2.1	-4.4	-6.3	-8.4	2.8
Small banks	3.6	2.2	0.8	-0.5	-2.2	-4.6	-6.8	-8.8	2.8
Medium-sized banks	3.9	3	1.9	1.1	-0.3	-1.2	-3.5	-4.2	2.5
	Acquiring banks, quarters following failed bank acquisition (percent)								
	-1	0	1	2	3	4	5	6	—
All banks	5.2	5.0	0.1	1.9	1.3	0.8	1.3	0.9	2.8
Small banks	7.0	6.4	-1.4	1.5	1.5	1.4	1.6	1.2	2.8
Medium-sized banks	3.3	3.6	2.2	1.4	0.0	-1.4	-0.8	-1.7	2.5

Source: GAO analysis of data from FDIC and the Federal Financial Institutions Examinations Council.

Note: Table cells contain average predicted net credit extended by failing banks in quarters prior to failure and by acquiring banks in quarters following acquisition of a failed bank. We used an econometric model to estimate the relationship between net credit extended by banks and the characteristics of banks associated with the likelihood of failure—capital adequacy, asset quality, earnings, liquidity, ADC lending, nonfarm, nonresidential real estate lending, commercial real estate lending not secured by real estate, multifamily real estate lending, brokered deposits funding, and size. We included indicators for each quarter to control for factors affecting the likelihood of failure that are common to all banks at the same time and we included indicators for each bank to control for unobserved characteristics of banks that do not change over time. We estimated the parameters of the model using observations on all banks. We used the estimated parameters along with observations on failed banks and acquiring banks to predict average net credit extended by failing banks over the two years preceding failure and to predict net credit extended by acquiring banks over the period from one quarter preceding to six quarters following the acquisition of a failed bank. We used the estimated parameters along with observations on open, non-acquiring banks to predict average net credit extended by these banks in all quarters. We repeated this procedure using only observations on small banks and using only observations on medium-sized banks.

Our estimates suggest that, on average, net credit extended by banks that failed in the period from 2008 through 2011 decreased continuously over the eight quarters prior to failure and actually became negative about five quarters prior to failure, indicating that failing banks were contracting the sizes of their loan portfolios and reducing the overall amount of credit they were providing. Our estimates also suggest that net credit extended

by banks that acquired failed banks during the same period generally decreased immediately after the acquisition and then partially recovered, but remained positive. Acquiring banks continued to expand the amount of credit they were making available, albeit more slowly than they did prior to the acquisition of the failed bank.

The results of our separate analysis of small and medium-size banks are broadly similar to the results of our baseline analysis of all banks, with the exception of medium-size acquiring banks. On average, net credit extended by both small and medium-size failing banks declined continuously in the quarters preceding failure and became negative 4-5 quarters prior to failure. On average, net credit extended by small acquiring banks declined immediately following the acquisition of a failed bank and then partially recovered, but remained positive except in the first quarter following the acquisition. For medium-size acquiring banks, on average, net credit appears to have declined more slowly following the acquisition of a failed bank, remaining positive for several quarters but actually becoming negative around a year after acquiring the failed bank. Overall, however, our estimates suggest that failing banks extended less and less credit as they failed and that acquiring banks continued to extend additional credit after they acquired failed banks.

The results of this analysis are subject to several limitations and should be interpreted with caution. As discussed above, we used the change in the size of a bank's loan portfolio over a quarter to measure the net amount of credit it extended over the quarter. This measure reflects the net effects of new loan originations, loan purchases, charge-offs, loan sales and securitizations, and other factors, and does not reflect only the extension of new credit. Our results likely reflect both factors that are generally associated with net credit extended by banks and factors that are specific to the particular time period we analyzed. Thus, the extent to which our results can be generalized to other time periods is limited. Furthermore, our results reflect average relationships between bank characteristics and net credit extended by banks for all of the observations we used. As such, they may not reflect the particular circumstances of any one bank or local community. Finally, we note that the list of characteristics we analyzed is meant to highlight important characteristics of banks that are related to the provision of credit, but many other factors—including demand for credit by borrowers—play a role in the amount of credit a bank extends and our list of characteristics is not exhaustive.

Appendix VIII: GAO Analysis of the Effect of Bank Failures on State Economic Conditions

To assess the relationship between bank failures and overall economic conditions in a state, we used an econometric model to analyze the relationship between bank failures, income, unemployment, and real estate prices for U.S. states and the District of Columbia (states) using data for the period from 1994 through 2011. That is, we estimated four sets of relationships: (1) the relationship between personal income and past values of personal income, past values of the unemployment rate, past values of the house price index, and past values of failed banks' share of deposits; (2) the relationship between the unemployment rate and past values of the unemployment rate, past values of personal income, past values of the house price index, and past values of failed banks' share of deposits; (3) the relationship between the house price index and past values of the house price index, past values of personal income, past values of the unemployment rate, and past values of failed banks' share of deposits; and (4) the relationship between failed banks' share of deposits and past values of failed banks' share of deposits, past values of personal income, past values of the unemployment rate, and past values of the house price index.

Limitations

The results of our analysis are limited by several factors and thus should be interpreted with caution. First, we used the concept of Granger causality to determine the extent to which variables are associated with each other. However, Granger causality only measures whether the current value of one variable is correlated with past values of another variable and it does not imply that one variable is the result of or the effect of another variable. In addition, our results likely reflect factors specific to the time period we analyzed and may not apply to other time periods. Second, our results likely reflect relationships among the variables at the state level and may not generalize to other geographic units—either larger units, such as a nation, or smaller units, such as cities or counties. Furthermore, our results reflect average relationships among the variables and thus may not apply to the specific circumstances of any one state. Finally, the specific group of variables we analyzed was chosen to highlight particular relationships and may not contain all of the variables that contribute to explaining personal income, unemployment, house prices, or failed bank deposits in states.

Analysis

We measured bank failures in a state as the fraction of deposits in a state that were in banks that failed during the past year. We measured income in a state using state personal income, adjusted for inflation. We measured unemployment in a state using the unemployment rate. We

measured real estate prices using house price indices for single-family detached properties with conventional conforming mortgages. For each variable, we estimated the relationship between the variable, its past values, and past values of the other three variables. We used a technique that controls for time-invariant characteristics of states, that controls for features of the national economy that affect all states at the same time, and that allows for the possibility that all four variables are jointly determined and affected by each other. We then estimated the likelihood that the past values of each variable help explain current values of the other variables.

We used data on the price level, state gross domestic product, and state personal income from the Bureau of Economic Analysis; on state unemployment rates from the Bureau of Labor Statistics; on deposits and failures of commercial banks, savings banks, savings associations, and insured branches of foreign banks (banks) from the Federal Deposit Insurance Corporation (FDIC); and on house prices in states from the Federal Housing Finance Administration (FHFA) for the period from 1994 to 2011 for U.S. states and the District of Columbia (states).

We used linear dynamic panel models to estimate relationships among bank failures, income, unemployment, and house prices in states. Linear dynamic panel models are appropriate for analysis of panels with a large number of cross-section units and a small number of time periods, dynamic dependent variables that depend on past values of themselves, potentially endogenous explanatory variables, fixed cross-section effects, and heteroskedasticity and autocorrelation within cross-section units but not across them. We separately estimated the parameters of four equations—one each for failed bank deposits, personal income, unemployment, and house prices—in which the dependent variable is a linear function of past values of itself, as well as past values of the other three variables, indicators for each state, and indicators for each year. For example, for the personal income equation, personal income was the dependent variable and was a linear function of past values of personal income, past values of unemployment, failed bank deposits, and house prices, indicators for each state, and indicators for each year. Then, we used Granger causality tests to assess the extent to which the dependent variable is “Granger caused” by the other three variables in the sense that past values of the other three variables help explain the current value of the dependent variable. For example, for the personal income equation, we used Granger causality tests to assess whether past values of unemployment, failed bank deposits, and house prices help explain the current value of personal income. We chose the number of past values by

starting with six past values and then using F-tests to determine if fewer past values were appropriate. We also examined our models for the presence of first-order autocorrelation. Linear dynamic panel models use lagged values of variables as instruments. However, instrument proliferation can overfit endogenous variables and fail to expunge their endogenous components. To address this limitation, we examined specifications with the default number of instruments and with a severely reduced number of instruments.

In general, our results suggest that bank failures in a state were more likely to affect its real estate sector than its labor market or overall economy (table 27). We did not find evidence of a significant relationship between personal income in a state and failed banks' share of deposits in a state. Our results suggest that failed banks' share of deposits in a state did not "cause" personal income in a state in the sense that past values of failed banks' share of deposits do not help explain the current level of personal income. Similarly, past values of personal income do not help explain the current value of failed banks' share of deposits.

Table 27: Granger Causality Tests for Personal Income, Unemployment, House Price, and Failed Bank Deposit Equations, 1994-2011

Panel A. Default number of instruments				
Equation	Granger causality test			
	Personal income	Unemployment	House prices	Failed bank deposits
Personal income (4 lags, 323 instruments)	— (0.00)	33.44 (0.00)	32.33 (0.00)	0.90 (0.93)
Unemployment (4 lags, 323 instruments)	12.63 (0.01)	—	36.93 (0.00)	7.07 (0.13)
House prices (6 lags, 250 instruments)	15.85 (0.02)	15.17 (0.02)	—	31.71 (0.00)
Failed bank deposits (6 lags, 241 instruments)	8.90 (0.18)	15.28 (0.02)	27.46 (0.00)	—
Panel B. Restricted instrument count				
Equation	Granger causality test			
	Personal income	Unemployment	House prices	Failed bank deposits
Personal income (3 lags, 60 instruments)	— (0.02)	9.45 (0.02)	4.70 (0.20)	4.11 (0.25)
Unemployment (4 lags, 56 instruments)	12.69 (0.01)	—	3.14 (0.54)	1.54 (0.82)

**Appendix VIII: GAO Analysis of the Effect of
Bank Failures on State Economic Conditions**

House prices (4 lags, 56 instruments)	7.10 (0.13)	15.00 (0.01)	—	12.86 (0.01)
Failed bank deposits (2 lags, 65 instruments)	2.27 (0.32)	6.55 (0.04)	12.4 (0.00)	—

Source: GAO analysis of data from the Bureau of Economic Analysis, the Bureau of Labor Statistics, FDIC, and FHFA.

Notes: Cells contain the chi-squared statistics and p-values (in parentheses) of F-tests of the null hypothesis that the lagged values of the variable in the column header are jointly equal to zero in the regression of the variable in the row header on lagged values of itself and the other three variables. The lag length for each equation is determined by starting with a model with 6 lags and then using F-tests to identify the highest order lags that are not jointly significant at the 10 percent level.

To the extent that there was a relationship between the unemployment rate and failed banks' share of deposits in a state, it appears that the unemployment rate had more bearing on failed banks' share of deposits than vice versa. Past values of unemployment appear to partially explain the current value of failed banks' share of deposits, but failed banks' share of deposits did not help explain the current value of unemployment.

Finally, failed banks' share of deposits and the house price index in a state appear to be significantly related to each other. Past values of failed banks' share of deposits appeared to help explain the current value of the house price index in a state, and vice versa. Altogether, these results suggest that the effects of bank failures on a state's economy were more likely to appear in the real estate sector and less likely to appear in the labor market or in the broader economy.

Appendix IX: GAO Contacts and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, Karen Tremba, Assistant Director; William Cordrey, Assistant Director; Gary Chupka, Assistant Director; William Chatlos; Robert Dacey; Rachel DeMarcus; M'Baye Diagne; Courtney LaFountain; Patricia Moye; Lauren Nunnally; Stefanie Jonkman; Akiko Ohnuma; Michael Osman; and Jay Thomas made key contributions to this report.

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