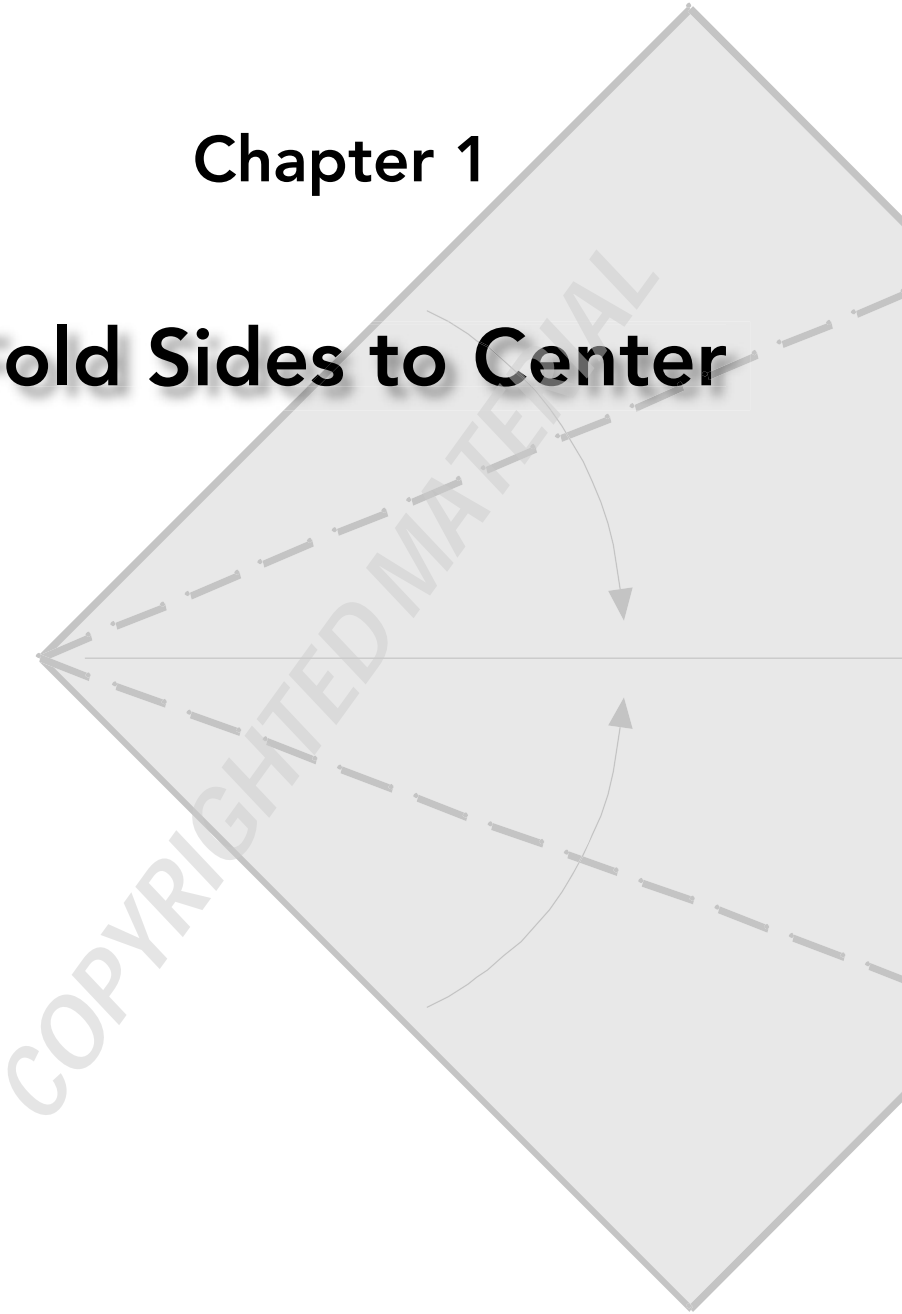


Chapter 1

Fold Sides to Center



On September 16, 2008, investors in the Reserve Primary Fund, the world's first and oldest money market mutual fund, inundated the company with orders to redeem their shares and withdraw their cash. The Reserve was an alternative to a federally insured savings account or certificate of deposit at a bank. Over two days, shareholders pulled out more than 60 percent of the fund's \$64.8 billion in assets. Many investors were unable to get to their money. And as of this writing, June 2010, many still are not.

The fund's shares had "broken the buck." That is, their net asset value had fallen below the \$1 per share floor all such funds promise to maintain by investing in high-quality, short-term, interest-bearing securities. As long as the value of those securities does not fall below their promised payback amount—an unlikely event given the high credit rating and proximity to maturity—the money fund's shares are worth at least \$1. The Reserve Fund, however, had invested in \$785 million of debt from Lehman Brothers Holding Co., which filed for bankruptcy the day before.

It was the first time in history that a money fund designed for individuals had broken that threshold.¹ It was a so-called *Black Swan* event, a metaphor that Aristotle used more than 2,000 years ago to describe the “improbable,” and popularized in 2007 in a best-selling book by the same title, by Nassim Nicholas Taleb.² Within a week, four of the five largest independent investment banks ceased to exist: Lehman Brothers filed for bankruptcy, Merrill Lynch & Co. sold to Bank of America, and Morgan Stanley & Co., and Goldman & Sachs Inc. became commercial bank holding companies. The fifth, Bear Stearns Cos., was sold to JPMorgan Chase six months earlier.

Baffled investors wondered, how could this happen? How could an investment bank file for bankruptcy, especially since the federal government six months earlier had arranged for the ailing investment bank Bear Stearns & Co. to be purchased by a commercial bank, JPMorgan Chase? How could the largest money fund in the world break the buck? How could the Wall Street business model break? If Wall Street is *broken*, can't we just go back to a time when it was *fixed*?

Flash back to the days just before the Reserve Primary Fund opened to the public for business on October 8, 1971, when plenty was fixed. The United States had a fixed exchange rate for the dollar, fixed interest-rate ceilings banks could pay on deposits, fixed-rate mortgages, fixed oil prices, and fixed commissions when buying and selling stocks on the New York Stock Exchange. The government had a fixed minimum investment in U.S. Treasury bills: \$10,000. And that was real money, about \$53,000 in 2010 dollars, when President Richard Nixon severed the link between the U.S. dollar and gold just two months before the Reserve Fund opened. Since the end of World War II, foreign central banks could exchange gold for dollars, and vice versa, at a fixed \$35 per ounce. Nixon's move marked the first time in more than 2,000 years that a major world currency was not backed by a precious metal. There was even a fixed amount of gold U.S. citizens were allowed to hold of gold coin or bullion: zero. In 1933 Franklin Delano Roosevelt, in one of his first acts as president, issued executive order

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6102, which made it illegal for U.S. citizens to own gold except for small amounts in jewelry. Under the Trading with the Enemy Act, violating the order was punishable by a fine of \$10,000 (about \$170,000 in 2010 dollars), up to 10 years in prison, or both. There was even a monetary reward offered for turning in people who failed to comply.

In this “fixed” environment, people had few alternatives for putting their savings to work. Generally, unspent money was deposited into a commercial bank such as Citibank, a savings and loan such as Glendale Federal S&L, or a securities firm such as Merrill Lynch. Tracing a deposit through these types of institutions helps reveal the flaws and conflicts of interest that developed over the past several decades, eventually breaking the Wall Street business model.

Commercial Banks

In 1971 median household income in the United States was about \$10,000, which gave the typical family about \$400 in savings at the end of the year.³ Depositing the \$400 into a savings account earned a maximum 5 and 3/4 percent, a fixed ceiling set by the Federal Reserve Board, the central bank of the United States. The government prohibited banks from paying interest on checking accounts. A certificate of deposit paid a maximum of 8 percent, fixed by the Federal Reserve.

Thousands of people would deposit money into a bank, which pooled the funds and lent them out to businesses or consumers. This effectively made the bank a clearinghouse, bringing savers and borrowers together and shifting the risk of holding cash to others who did not have enough for their purposes.

As required by law, before lending any of the deposits, the bank set aside 10 percent into a special account just in case the depositors wanted to make a withdrawal or write a check. If the bank had lent out all the funds, depositors would not have access to even a portion of their money. The set-aside was effectively *dead capital*, leaving the bank with only

90 percent of the deposit on which to earn enough to pay depositors and make a profit for itself. The notion of dead capital will arise in several other contexts in coming chapters; minimizing it, obviously, boosts profits for a bank and became an obsession in recent years.

If no one wanted to borrow or if the bank didn't want to lend to less-than-credit-worthy applicants, it alternatively could invest in U.S. Treasury securities. It was able to pool the deposits to meet the Treasury's \$10,000 minimum investment requirement. The bank would buy, say, \$1,000,000 of two-year U.S. Treasury notes paying 6 percent per year. Each year, the bank would earn \$60,000 in interest. If the bank's deposit rate was 3 percent, it would be paying its customers \$30,000 a year. Carrying that position for the full two years would generate \$30,000 in profit each year for the bank risk-free.

Banks lent to consumers and businesses, but they were only allowed to do so within state lines. Federal law, via the McFadden Act, prohibited interstate banking. Commercial bank deposits were federally insured up to \$40,000. The Federal Reserve, through so-called Regulation Q (part of the 1933 Securities Act, also known as the Glass-Steagall Act), placed interest rate ceilings on saving accounts and CDs and prohibited paying interest on checking accounts.

The payments of interest and principal in bank accounts are federally insured by the Federal Depository Insurance Corporation (FDIC). All federally chartered commercial banks are required by law to pay insurance premiums into the fund, so all deposits up to a maximum ceiling are guaranteed. Federally insured deposits were a great idea, but they might provide incentives for banks to make reckless, irresponsible, or questionable loans. This raised the specter of so-called *moral hazard* whereby people behave more recklessly because they are not exposed to the full risk of their actions. Knowing that their deposit base was insured, bank officers might have incentives to make riskier loans than they would if they did not have the insurance.

So the government required banks to have some of the shareholders' money at risk to absorb any initial wave of losses on loans it might make.

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It may not have removed moral hazard altogether, but at least the bank had some proverbial “skin in the game.” This is akin to a potential homeowner having to have at least some money as a down payment as an equity interest in the property. So banks, and savings and loans for that matter, were required to set aside money for potential losses on the loans they made.

Familiarity with a bank savings account is all that’s needed to understand how Wall Street prices its securities and derivatives. All a depositor needs to know is how to answer the following question: How much does a bank deposit of \$100 grow to in one year at 5 percent interest? The simple math answer is $\$100 \times (1.05) = \105 . Even if the depositor doesn’t know, the bank teller can provide the answer. In fact, anyone capable of the simple arithmetic will calculate the *same* figure. The same is true for pricing the securities and derivatives in question: How much do I deposit into a bank account today at 5 percent interest in order to have \$100 in the account in one year? Instead of *multiplying* to calculate future value, *divide* to get present value: $\$100/(1.05) = \95.24 . That present value calculation on future streams of cash is how all financial instruments are priced. There is transparency in the savings account and a government guarantee of payment of interest and repayment of the principal. If the borrower of the money fails to make the promised interest payments and/or failed to repay the loan, the depositor need not worry. Getting one’s money back is certain.

Financial markets in 1971 were restrictive. Mortgages had fixed rates; no variable-rate products were offered. It took about a month for a banker to process a mortgage application. Once the loan was approved, the homeowner had to file updated annual financial statements to the bank. Additionally, the bank often conducted so-called drive-bys to view the upkeep of the property. A banker would literally drive past the property to see that it was in good repair, the lawn was mowed, and so on. The bank hadn’t so much lent the money to buy the house as it had lent the house itself. If the homeowner failed to make monthly

mortgage payments, the bank simply repossessed the house. Refinancing was rarely an option, as mortgages often had prepayment penalties. When buying a home, a buyer *could* get the lower rate of the current owner by “assuming the mortgage,” making a down payment equal to the seller’s equity in the house. First-time homebuyers were unlikely to match the equity of a seller who had lived in the house for 15 or 20 years, for example.

If depositors wanted to withdraw their money before those who had borrowed it from the bank paid it back, the bank would have to either call in some loans or else find some new depositors with enough money to repay the withdrawing depositors. If interest rates had risen in the meantime, the bank would have to offer higher, competitive rates to attract new depositors. The biggest risk was that market rates had risen above the ones the bank was receiving on its loans, so that the bank had to pay more for deposits than it was earning on loans or Treasury securities.

Thus banks brought together lenders and borrowers, shouldering the risk of short-term borrowing and longer-term lending. That maturity mismatch risk is a perennial problem for the financial industry. Nineteenth-century journalist and essayist Walter Bagehot addressed the phenomenon when he famously wrote, “The only securities which a banker using money that he may be asked at short notice to repay, ought to touch are those which are easily saleable and easily intelligible.”⁴

Institutional investors such as insurance companies and pension funds could bypass the banks and lend directly to companies. These short-term loans, called commercial paper, are generally used for funding business operating expenses, such as to meet payrolls. They have a maximum of 270 days to maturity, which was a way of avoiding having to register the securities with the Securities and Exchange Commission. The rationale for allowing institutional investors to lend via commercial paper was that sophisticated investors didn’t need as much government oversight or protection.

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Savings and Loans

Deposits in a savings and loan were similar to the bank deposits, with the exception that the money was only lent for home mortgages, home improvements, and/or real estate development. The S&Ls didn't make business loans or consumer loans. And like a bank, if demand for mortgages was low, the S&L could pool the deposits and buy U.S. Treasury securities instead of extending loans. The interest earned on the Treasuries was used to pay interest to the depositors in the same way banks did.

The depositors actually owned the institutions, and profits were distributed to these *shareholders*. Recall George Bailey (played by Jimmy Stewart) in the classic movie *It's a Wonderful Life* and his travails at the "little old building and loan." A particular scene in the movie helps explain the S&L: George faces the depositors who'd lined up at the counter to withdraw their deposits.

George: No, but you . . . you . . . you're thinking of this place all wrong.

As if I had the money back in a safe.

The, the money's not here.

Well, your money's in Joe's house . . . that's right next to yours.

And in the Kennedy house, and Mrs. Macklin's house, and, and a hundred others.

Why, you're lending them the money to build, and then, they're going to pay it back to you as best they can.

Now what are you going to do? Foreclose on them?

Tom: I got two hundred and forty-two dollars in here and two hundred and forty-two dollars isn't going to break anybody.

George: Okay, Tom. All right. Here you are. You sign this. You'll get your money in sixty days.

Tom: Sixty days?

George: Well, now that's what you agreed to when you bought your shares.

George couldn't return deposits to the customers demanding their money because he'd lent it to their neighbors, who in turn had bought their homes and were repaying the loans over time. So there wasn't enough money in the Building & Loan to give all the depositors their money back, all at one time. Either George would have to call loans and force people to sell their homes in order to repay the withdrawing depositors or else he would have to raise new deposits to replace the funds of those withdrawing.

The primary difference between George Bailey's day and 1971 was that in the latter the federal government, via the Federal Savings and Loan Insurance Corporation (FSLIC), guaranteed deposits up to \$40,000, so there was no, or at least less, fear that depositors would be scared into withdrawing their deposits in a "run on the bank." The S&Ls paid an annual insurance premium to FSLIC, just like the commercial banks paid premiums to the FDIC for insurance.

Securities Firms

People willing to forego federally insured deposits and accept some risk with their money could open an account at a securities/brokerage firm and become "investors" buying stocks and/or bonds instead of being merely "savers."

The income stream on that money was not from loans the firm made to institutions, and neither was it, nor the principal, government insured. The investors were *directly* participating in the "ownership" (stock) or "loanership" (bond) of the company, whose fortunes or misfortunes dictated the *return on* and *return of* principal. If the company for whatever reason failed to earn enough money, bondholders and stockholders might not get anything back.

Separated from commercial banks by the Glass-Steagall Act of 1933, securities firms did not take deposits to lend to borrowers. The Act's intent was to protect depositors from having their money lent to stock market speculators who might more easily fail to pay back the loans to

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the banks. The *source* and *reliability* of interest payments and the return of principal is the central question when lending money in the first place, whether depositing money in a bank or buying a bond. Also, banks underwriting stocks and bonds could lend money on easy terms to investors, thus helping to create demand for the very securities the banks were bringing to market and trying to sell to those investors.

A company borrowing money from depositors, via the bank, uses the funds in what it hopes will be a profitable enterprise, from which it promises to pay the interest and repay the principal. Loans to stock market speculators, whose “profits” evaporate if security prices fall, are a much riskier proposition and could in turn put the entire financial system at risk. Instead, such firms were conduits between investors providing capital and companies seeking it to build or expand their businesses, transferring risk in the process.

Through commercial banks and S&Ls, savers were *indirect* lenders to companies and consumers, using federally insured deposit accounts to channel the funds. Investors became *direct* “owners in” or “loaners to” the companies by purchasing the “securities” that the companies issued and securities firms “underwrote” and “distributed.” That is, securities firms took the illiquid asset of a company and made it liquid by selling claims on its financial fortunes, effectively *securitizing* claims on the company’s income stream by issuing stocks or bonds or both.

Even though securities firms do not take demand deposits, they are still subject to the vicissitudes of the short-term funding and fluctuating interest rates. In order to hold an inventory of stocks and bonds, either for selling to clients or as part of their own trading and investing, the firms pledge the securities on an overnight basis (sometimes up to several days) to borrow money from banks. The bank does not lend the full value of the securities, but instead an amount slightly less so as to protect itself from any adverse move in their prices. This so-called *haircut* in price varies depending on the firm’s leverage and credit rating as well as the rating of the collateral securities being pledged.

This short-term financing leaves the securities firms with the same maturity mismatch problem that banks and S&Ls have. If for any reason the banks refuse to roll over the overnight loans or take a larger haircut due to a ratings change, the securities firms are forced to come up with more capital, sometimes by selling some of the securities in the inventory.

Transferring Risk

Following the trail of money through banks, S&Ls, and securities firms shows that Wall Street's business is to *transfer risk* from those who don't want it to those who do. As shown in Figure 1.1, selling stock to investors in an initial public offering is risk-transfer; so is underwriting the company's bonds.

The mix of a company's stock and bonds is the simplest example of what is called *creating tranches*, which rank investors' claims on the company's earnings and assets, as well as the risk characteristics according to security type. The document chartering the firm is folded in such a way that bondholders precede stockholders in a claim on the firm's income, with interest being paid before dividends. In the event of a bankruptcy, bondholders also have a prior claim to the assets of the company compared

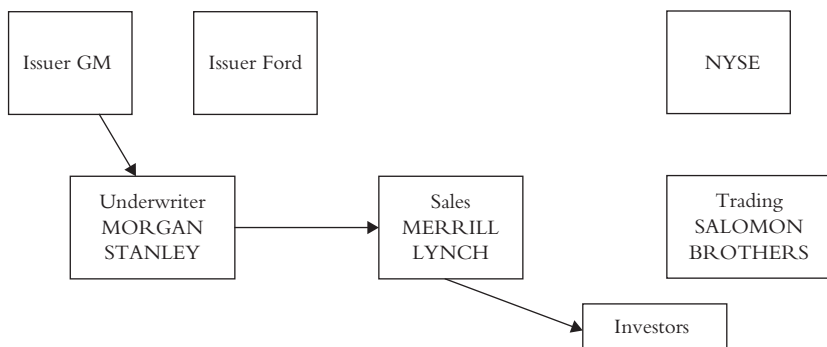


Figure 1.1 1960s Wall Street Primary Market

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to shareholders. Broking shares and bonds previously brought to market is also an exercise in risk transfer, as shown in Figure 1.2.

Wall Street *connects and collects* in this risk-transfer business, bridging those with surplus capital to those with a deficit, exacting a toll for the service. It earns revenue by charging commissions and fees for transaction and advisory services related to the issuance, purchase, and sale of stocks, bonds, and insurance products, as well as from extracting bid/ask spreads and taking proprietary trading positions sometimes against those of its customers.

During the era of fixed commissions, the only access to these securities was through member firms of the country's stock exchanges, and the toll was high. In 1971, buying 100 shares of AT&T at \$50 had a fixed commission of \$440, or \$4.40 a share. This put investors at an immediate 9 percent disadvantage on their purchase and another 9 percent on the sale. Today, investors can do the same transaction for about \$8.50, or 8.5 cents a share. The SEC phased in competitive commission rates beginning in April 1971 and ending four years later.

The federal government didn't (and still doesn't) guarantee *funds* at a securities firm the way it had guaranteed them at banks and S&Ls since the 1930s. It wasn't until 1970 that Congress created the Securities

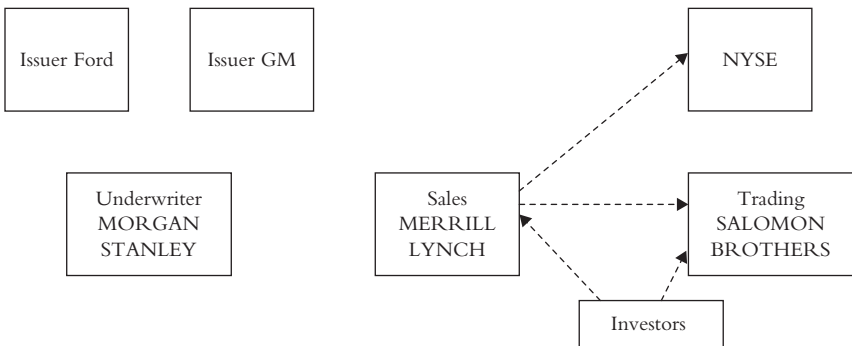


Figure 1.2 1960s Wall Street Secondary Market

Investor Protection Corporation, which was designed to be the investors' first line of defense in the event a brokerage firm failed and owed customers cash and securities missing from their accounts. The FDIC protected deposits at banks, and Congress wanted some protection for investors' money at securities firms. This is not a guarantee on the securities themselves, only the content of the accounts at the firms. But it is an insurance fund, not a federal government agency.

End of an Era

Harry Brown, the co-creator of the world's first money-market mutual fund, which opened to the public just weeks after Nixon severed the dollar's link to gold in 1971, died on August 11, 2008. He was 82. A month later, in the wake of the Lehman bankruptcy, his Reserve Primary Fund met its own demise: Tuesday, September 16, at 4:00 p.m., the Reserve Fund "broke the buck." Its net asset value fell below \$1 a share. Shareholders clamored to exchange their shares for cash just like the mob had at George Bailey's Building & Loan in *It's a Wonderful Life*. Investors rushed to redeem their shares because the Reserve held \$785 million in debt of Lehman Brothers Holdings Inc., which the day before had filed the largest bankruptcy (\$639 billion) in U.S. history when weekend meetings with the Fed and the Treasury failed to secure a shotgun wedding akin to the one carried out between Bear Stearns Cos. and JPMorgan Chase & Co. six months earlier.

On Saturday, September 13, 2008, the U.S. Treasury and the Federal Reserve had summoned the chief executive officers of Wall Street firms for a second day of talks to find a solution to the plight of Lehman Brothers Holdings Inc. On September 14, Bank of America Corp. abandoned talks to buy Lehman Brothers Holdings Inc., less than three hours after Barclays Plc said it wouldn't buy the faltering investment bank, and instead agreed to buy Merrill Lynch.⁵

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Within hours of the Reserve Fund suspending redemptions September 16, American International Group Inc, the biggest U.S. insurer, was effectively nationalized by the U.S. government with an \$85 billion loan from the Federal Reserve in exchange for a 79.9 percent ownership interest in the company. Five days later, the two remaining bulge-bracket Wall Street investment banks, Goldman Sachs and Morgan Stanley, applied to the Federal Reserve for status as bank holding companies. The Fed approved the applications, which converted the investment banks into commercial banks subject to Fed regulation. The Wall Street business model had broken.

To grasp the magnitude of how things changed in September 2008, consider the following: Lehman, the oldest bulge-bracket securities firm on Wall Street, filed the biggest bankruptcy in history after Bank of America and Barclays Plc pulled out of talks to buy the New York-based investment bank. Bank of America, the biggest U.S. consumer bank, instead agreed to acquire Merrill Lynch, the biggest U.S. brokerage firm. Next, the oldest U.S. money-market fund, Reserve Primary Fund, broke the buck after writing off \$785 million of debt issued by the bankrupt Lehman. The largest U.S. mortgage lenders and biggest U.S. corporate borrowers, Fannie Mae and Freddie Mac, had been taken over by the U.S. government the week before. IndyMac Bankcorp, the largest independent mortgage lender, had failed in August, and in the biggest bank failure in history, Washington Mutual, the country's largest S&L, filed for bankruptcy in late September, a month that marked the end of an era.

