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Background Materials for FCIC Commissioner’s Dinner with David Moss and Carmen Reinhart

Historical Lessons from Previous Financial Crises

November 16, 7:00pm – 9:00pm

FCIC Office, Main Board Room

Contents:

1. Speaker Biographies (pp. 2-3)
2. David Moss, Cole Bolton and Eugene Kintgen (2009) “The Pecora Hearings,” Draft. Harvard Business School Case Study, 13 February. (pp. 4-28)
3. David Moss (2009) “An Ounce of Prevention: financial regulation, moral hazard, and the end of “too big to fail,” *Harvard Magazine*, September-October. (pp. 29-33)
4. Carmen M. Reinhart and Kenneth S. Rogoff (2008) “Is the 2007 US Sub-Prime Financial Crisis So Different? An international historical comparison,” *American Economic Review* 98 (2): 339-344. (pp. 34-39)
5. Carmen M. Reinhart and Kenneth S. Rogoff (2009) “The Aftermath of Financial Crises,” *American Economic Review* 99 (2): 466-72. (pp. 40-46)

Speaker Biographies
Historical Lessons from the Financial Crisis
November 16, 2009, 7:00pm-9:00pm

David A. Moss is the John G. McLean Professor at Harvard Business School, where he teaches in the Business, Government, and the International Economy unit. Moss graduated from Cornell University (B.A., 1986) and went on to earn an M.A. in economics (1988) and a Ph.D. in history (1992) from Yale University. In 1992 and 1993, he served as a senior economist at Abt Associates, a public policy consulting firm based in Cambridge, Massachusetts. He joined the Business School faculty in July, 1993.

Professor Moss's research focuses on economic policy and especially the government's role as a risk manager. He has published three books on these subjects: *Socializing Security: Progressive-Era Economists and the Origins of American Social Policy* (Harvard University Press, 1996), which traces the intellectual and institutional origins of the American welfare state; *When All Else Fails: Government as the Ultimate Risk Manager* (Harvard University Press, 2002), which explores the government's pivotal role as a risk manager in policies ranging from limited liability and bankruptcy law to social insurance and federal disaster relief; and *A Concise Guide to Macroeconomics: What Managers, Executives, and Students Need to Know* (Harvard Business School Press, 2007), a primer on macroeconomics and macroeconomic policy.

In addition to these books, Moss has co-edited two volumes and has published numerous articles, book chapters, and case studies, mainly in the fields of institutional and policy history, financial history, political economy, regulation, and comparative social policy. One recent article, "An Ounce of Prevention: Financial Regulation, Moral Hazard, and the End of 'Too Big to Fail'" (Harvard Magazine, Sept-Oct 2009), grew out of his research on financial regulation and regulatory reform for the TARP Congressional Oversight Panel. He has also created a financial history course in the second year of the Harvard MBA program entitled "Creating the Modern Financial System," which traces major developments in financial markets, institutions, and instruments from the early eighteenth century to today.

Professor Moss is the founder of the Tobin Project, a non-profit research organization, and a member of the National Academy of Social Insurance. Recent honors include the Robert F. Greenhill Award, the Editors' Prize from the American Bankruptcy Law Journal, the Student Association Faculty Award for outstanding teaching at the Harvard Business School, and the American Risk and Insurance Association's Annual Kulp-Wright Book Award for the "most influential text published on the economics of risk management and insurance."

Carmen M. Reinhart is Professor of Economics and Director of the Center for International Economics at the University of Maryland. She received her Ph.D. from Columbia University. Professor Reinhart held positions as Chief Economist and Vice President at the investment bank Bear Stearns in the 1980s, where she became interested in financial crises, international contagion and commodity price cycles. Subsequently, she spent several years at the International Monetary Fund. She is a Research Associate at the National Bureau of Economic Research, a Research Fellow at the Centre for Economic Policy Research and a member of the

Council on Foreign Relations. Reinhart has served on numerous editorial boards, panels, and has testified before congress. She has written and published on a variety of topics in macroeconomics and international finance and trade including: international capital flows, exchange rates, inflation and commodity prices, banking and sovereign debt crises, currency crashes, and contagion. Her papers have been published in leading scholarly journals, including the American Economic Review, the Journal of Political Economy, and the Quarterly Journal of Economics.

Her work has helped to inform the understanding of financial crises for over a decade. In the early 1990s, she wrote (with Guillermo Calvo) about the fickleness of capital flows to emerging markets and the likelihood of abrupt reversals--before the Mexican crisis of 1994-1995. Prior to the Asian crisis (1997-1998), she documented (with Graciela Kaminsky) the international historical links between asset price bubbles and banking crises, and how the latter could lead to currency crashes creating a "twin crisis." She identified (with Ken Rogoff) the possibility of severe economic dislocations from the sub-prime crisis in 2007. Her work is frequently featured in the financial press around the world, including The Economist, The Financial Times, The Washington Post, The New York Times, and The Wall Street Journal. She has appeared in CNN, CSPAN, BBC, and NPR, among others.

Her latest book (with Kenneth S. Rogoff) entitled *This Time is Different: Eight Centuries of Financial Folly* (Princeton Press) documents the striking similarities of the recurring booms and busts that have characterized financial history.

DAVID MOSS
COLE BOLTON
EUGENE KINTGEN

The Pecora Hearings

In late October 1929, Wall Street was badly shaken by what later came to be known as the “Great Crash.” On Black Monday and Black Tuesday (October 28 and 29), the Dow Jones Industrial Average fell from 300 to 230, well down from its September 3rd peak of 381. It ultimately bottomed out at 41 during the summer of 1932.¹ By this time, hundreds of banks had failed, prices had dropped dramatically, U.S. real per capita GDP had fallen by approximately 30%, and the unemployment rate stood at over 20%.² Many blamed Wall Street for the onset of the Great Depression; and Franklin Delano Roosevelt, who ultimately won the 1932 presidential election by a wide margin, promised to enact strict regulations on the financial community and put “an end to speculation.”³

In 1932, the Senate Banking Committee began a much-publicized investigation of the nation’s financial sector. The hearings, which came to be known as the Pecora hearings after the Banking Committee’s lead counsel Ferdinand Pecora, revealed how the country’s most respected financial institutions knowingly misled investors as to the desirability of certain securities, engaged in irresponsible investment behavior, and offered privileges to insiders not afforded to ordinary investors. During the famous “Hundred Day” congressional session that began his presidency, Roosevelt signed two bills meant to prevent some of these abuses. The first law required companies to register new securities with the Federal Trade Commission (FTC) and to publish prospectuses with detailed information on their business ventures before they could offer new securities to the public. The second law established insurance for bank deposits and forced financial institutions to choose between investment and commercial banking.⁴

Roosevelt also believed that the government should play a more active role in the financial system by regulating national securities exchanges. In February 1934, the president urged Congress to enact such legislation, prompting the introduction of a bill entitled the Securities Exchange Act. If enacted, this bill would force all securities exchanges to register with the Federal Trade Commission, would curtail the size of loans that could be advanced to securities investors, and would ban a number of practices (such as short-selling) that were thought to facilitate stock manipulation. Additionally, the legislation would require that all companies with exchange-listed securities publish detailed business reports as frequently as the FTC desired and would subject any company or exchange deemed to be in violation of the act’s provisions to increased legal liability.⁵

4 Professor David Moss and Research Associates Cole Bolton and Eugene Kintgen prepared this case. This case was developed from published sources solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Wall Street, represented in particular by New York Stock Exchange (NYSE) President Richard Whitney, took a strong position against the Securities Exchange Act. Whitney quickly broadened the NYSE's internal anti-manipulation rules, in hopes of convincing Washington that stock exchanges could effectively police themselves without any government involvement. The NYSE president also warned of the potentially disastrous effects of the legislation, arguing that the publicity measures of the Securities Exchange Act would enable the FTC to control companies' business practices and would prove so onerous that companies might choose to delist their securities from formal stock exchanges. He insisted, moreover, that the bill would reduce liquidity in securities markets and could even bring about a mass liquidation of shares as the result of its high margin requirements.⁶

While Whitney launched his assault on the bill, the Pecora Committee conducted a public inquiry into stock price manipulation at the New York Stock Exchange. Pecora detailed an instance just a few months earlier in which speculators, unbeknownst to the NYSE management, had artificially driven up the price of shares in alcohol (liquor) companies. Furthermore, the Committee revealed that when the NYSE eventually conducted its own investigation into the matter, its final report concluded that nothing improper had occurred. Pecora claimed that this lax oversight by the NYSE confirmed that exchanges were incapable of adequately regulating themselves and therefore passage of the Securities Exchange Act was vital.⁷

Spectacular financial abuses, like those involving the stocks of alcohol companies, had been routinely uncovered by the Pecora Committee for more than a year, captivating the nation and helping to instill in citizens a strong desire for financial reform.⁸ So when Richard Whitney was summoned to testify during the congressional hearings on the Securities Exchange Act in late February 1934, he had the tough task of trying to prove to citizens and congressmen alike that the proposed bill was too restrictive.⁹ Would he be able to convince lawmakers that the Securities Exchange Act would impose overly burdensome regulations on exchanges and stifle American securities markets, or would his arguments fail to win over those who believed that strict regulations were exactly what financial markets required following the Great Crash?

The Securities Market in the 1920s

During World War I, the U.S. government's massive Liberty Loan drives introduced large numbers of Americans to the idea of investing in bonds, a prospect that would have seemed foreign to many prior to the war. In 1917 and 1918, "the number of bond buyers in the United States increased from 350,000 to 25 million persons" as more and more citizens considered it their patriotic duty to purchase Liberty Bonds.¹⁰ According to historians, these far-reaching wartime loan drives increased Americans' willingness to invest in securities, priming them for the 1920s market surge.¹¹

Indeed, stock indexes boomed in the 1920s as a suddenly investment-hungry populace readily bought up a torrent of newly issued securities. Over the decade as a whole, more than \$28 billion in corporate debt securities were issued, far more than the roughly \$12 billion issued during the 1910s. The growth in corporate equity issues was even more dramatic, with the total value of common and preferred stock issues more than tripling from \$5.8 billion in the 1910s, to \$18 billion in the 1920s. Likewise, the total volume of stocks and the aggregate value of bonds traded on the floor of the New York Stock Exchange nearly tripled from the 1910s to the 1920s.¹² (See Exhibits 1 and 2.)

Helping to fuel this massive surge in investment were margin loans, which allowed investors to borrow heavily from their brokers (often as much as 75 – 90% of the total cost) in order to buy securities. To fund their customers' margin accounts, brokers, in turn, had to take out brokers' loans from banks or other lenders. As a testament to the rapid increase in margin financing during this

time, aggregate brokers' loans surged from \$7.6 billion in 1924 to more than \$26.5 billion just five years later.¹³

Security Affiliates and Investment Trusts

Prior to the 1920s, commercial banks rarely participated in securities markets. Marked by a historic commitment to safe and conservative practices, and bound by state and federal legislation that barred them from partaking in any sort of "nonbanking" activities, commercial bankers tended to focus on their deposit and loan businesses. These bankers generally kept their institutions' funds out of corporate securities and left the origination of stocks and bonds to J.P. Morgan and Company and similar private Wall Street investment firms.¹⁴

However, amid the stock market boom of the 1920s, many commercial banks abandoned their traditional outlooks and established subsidiary companies known as security affiliates. While many commercial banks had long had bond departments, through which they had sold Liberty Bonds during the war, these new subsidiary organizations allowed bankers to circumvent the laws that forbid them from dealing in the full spectrum of stocks and bonds. Additionally, by establishing such affiliates, many banks could bypass restrictions on interstate branching. Whereas only ten nationally-chartered banks and eight state-chartered banks had security affiliates in 1922, 105 national banks and 75 state banks had securities-dealing subsidiaries by 1930.¹⁵

These security affiliates often acted as both investment houses and broker-dealers, not only helping to originate securities—by 1930, about half of all bonds were originated by banks' security affiliates—but also then facilitating customers' purchases of these securities.¹⁶ To attract walk-in clients, the affiliates often set up shop on the ground floor. Additionally, these companies would advertise in the era's most popular magazines, touting the virtues of an investment portfolio.¹⁷

Companies known as investment trusts, which were relatively new to the U.S. at this time, also found a niche selling securities during the 1920s, particularly to smaller investors. Like mutual funds of today, investment trusts sold shares in themselves to customers and invested their income in a securities portfolio. These portfolios could either be fixed or actively managed and often included stocks, bonds, and sometimes even shares of other investment trusts. These investment companies experienced a tremendous rise in popularity during the decade, increasing in count from 40 to more than 750 from 1921 to 1929.¹⁸

Stock Market Manipulations

Schemes aimed at controlling security prices were common during the 1920s, and so-called "stock pools" or "pool operations" were among the most widespread stock market manipulations of the era.¹⁹ The classic explanation of such practices was later given by John Kenneth Galbraith:

The nature of these operations varied somewhat but, in a typical operation, a number of traders pooled their resources to boom a particular stock. They appointed a pool manager, promised not to double-cross each other by private operations, and the pool manager then took a position in the stock which might also include shares contributed by the participants. This buying would increase prices and attract the interest of people watching the tape across the country. The interest of the latter would then be further stimulated by active selling and buying, all of which gave the impression that something big was afloat. Tipsheets and market commentators would tell of exciting developments in the offing. If all went well, the public would come in to buy, and prices would rise on their own. The pool manager would then sell

out [the pool's shares], pay himself a percentage of the profits, and divide the rest with his investors.²⁰

In addition, some observers argued that certain stock pools also engaged in outright fraud, reporting "false statements or fictitious trades" to help inflate stock values.²¹

"Wash sales" were a specific form of manipulation that pool operators used to create the illusion of increased market activity in a given stock. In this practice, a stockholder would sell his shares on an exchange, but would employ a broker working on his behalf to re-purchase the shares, typically at a slightly higher value. Thus, by essentially selling his shares to himself, the market actor generated the appearance of active trading and exerted upward pressure on the stock's price, which, in turn, attracted other market participants to the stock. So-called "matched sales" were identical to wash sales, except that the market actor did not sell shares to himself, but rather sold them to another actor with whom he was colluding. By continually buying and selling the same shares back and forth between themselves, the actors could again entice outside investors to the stock by effecting the appearance of elevated market activity.²² Although these manipulative practices were recognized as fraudulent, they "were seldom detected or penalized by stock exchange officials" of the era.²³

Unlike the preceding manipulations, "bear raids" sought the artificial depression of a stock's price. Through this practice, a group of market actors would engage in intense short-selling of a chosen stock, thereby applying downward pressure on its price. If the share price fell enough, many investors who held the stock on margin would receive margin calls. That is, those investors who had borrowed heavily to purchase the stock would receive calls from their brokers when the stock's price fell below a critical threshold. If the investors could not come up with enough money to cover their margin requirements, they would then be forced to sell off a portion or all of their shares, which, in turn, drove the stock's price down further.²⁴

The Senate Banking Inquiry: A Shaky Start

In early 1932, with the depression deepening and stock indexes continuing to fall, President Herbert Hoover demanded that the New York Stock Exchange enact measures to stop manipulative practices such as stock pools and bear raids. When the NYSE failed to take any substantive action, the president called on Republican Senators Fredrick Walcott and Peter Norbeck, each of whom sat on the Senate Banking Committee, to lead an investigation of manipulative stock practices. On March 4, the Senate officially authorized the inquiry and allotted \$50,000 for the investigation.²⁵

The Committee Falters

On rumors of an impending bear raid, Hoover urged the Banking Committee to begin formal hearings in early April. The Banking Committee convened an emergency session on April 8 and called NYSE President Richard Whitney to testify on April 11. The Committee chose an attorney by the name of Claude Branch to serve as its temporary lead counsel. Branch and the senators had little time to prepare for the inquiry, and Whitney captivated the audience during the inquiry's opening sessions.²⁶ Legal historian Joel Seligman later described the initial hearings:

For the first two days they were a near-total disaster. A smooth, haughty Richard Whitney was the lead-off witness. The self-confident stock exchange president dazzled the five hundred or so reporters and spectators jammed into the modestly proportioned committee room. Suavely he denied knowledge of a bear raid scheduled for the previous Saturday. Indeed, Whitney testified, "constant investigations have shown . . . bear raids [do] not exist."

Nor did short-selling have much effect on market prices, accounting as it did for less than 5 percent of all stock exchange transactions. If they wanted culprits to blame for the exaggerated price movements of the great bull market and succeeding crash, Whitney suggested they look at "the high-powered political agents of prosperity," who misled the country into a "state of mind that . . . thought poverty was about to be abolished in our country forever."²⁷

The early hearings went so poorly that Senator Norbeck, the Banking Committee's chairman, replaced Branch with the lead counsel's assistant, trial lawyer William Gray. By the end of the month, the investigation began to gather momentum when it was revealed that a publicist had received nearly \$300,000 over a decade-long span to plant articles in respectable newspapers, such as the *New York Times* and the *Wall Street Journal*, which were aimed at increasing the share price of more than 60 different securities.²⁸

In mid-May, after the Committee had returned from a brief adjournment, Gray revealed that the brokerage firm of M.J. Meehan and Company had earned \$5 million over the course of a single week in March 1929 by organizing a pool operation in Radio Corporation of America stock. He also demonstrated how various prominent investors had profited enormously through the exploitation of insider information and through securities-related tax evasion.²⁹

While the Banking Committee's revelations graced the front pages of the nation's leading newspapers, Gray's handling of the inquiry frustrated a number of the Committee members. Gray could not substantiate his claims that some witnesses engaged in wash sales and other questionable stock transfers, and he failed to subpoena one particular witness who later escaped to Europe.³⁰ In June, Senator Norbeck struggled to secure \$50,000 to continue the investigation, and, to the public's surprise, the hearings officially adjourned on June 24. On the same day that the Committee declared the suspension of its inquiry, Norbeck announced that Gray's services would no longer be required.³¹

The Inquiry in Suspension

During the summer and fall of 1932, President Hoover gave little indication that he wished to resume the Banking Committee's hearings. In fact, Hoover seemed to shun any federal involvement in securities markets, believing instead that securities regulation should be left to the states. Additionally, his reelection platform made no mention of stock exchanges. Democratic presidential nominee Franklin Delano Roosevelt, on the other hand, devoted several planks of his campaign platform to the reform of securities trading, pledging to enact sweeping federal legislation to regulate the industry if elected. The Democrat's platform ultimately resonated much more strongly among the nation's voters, and barely a week after Roosevelt's landslide victory in November 1932, Senator Norbeck announced that the Banking Committee's hearings would resume when Congress convened its short lame-duck session in early December.³²

Norbeck, however, encountered difficulties finding a replacement for William Gray. He was turned down by his first three choices before a lawyer by the name of Irving Ben Cooper agreed to take the post on January 10, 1933.³³ A week later, Cooper resigned, claiming in a letter that was published in the *New York Times* that Norbeck had violated an agreement to grant him "a free hand in the conduct of the investigation."³⁴ On January 24, Norbeck announced that Cooper would be replaced by Ferdinand Pecora. The Sicilian-born lawyer had been recommended to Norbeck by former New York District Attorney Joab H. Banton, who praised Pecora as "the best qualified lawyer in the country" to pursue the investigation.³⁵ Although Pecora was known to be quite theatrical, he was also regarded as an adept cross-examiner. After the Cooper debacle, Norbeck assured the public that his new hire would "have all the authority necessary to make a comprehensive investigation."³⁶ Indeed, the new general counsel would play such a major role in the proceedings over the following

months that the Senate Banking Committee's investigative hearings became known as the Pecora hearings.

The Hearings under Pecora

Insull Inquiry

In mid-February, the hearings recommenced with Pecora's investigation of the so-called "Insull empire," a once massive group of utilities assembled by the British-born Samuel Insull, who had worked for a time as Thomas Edison's business and financial manager before striking out on his own to Chicago. At its peak in the mid-1920s, the Insull empire was the nation's third-largest consortium of utility companies, providing an eighth of the country's electricity.³⁷ In late 1931, however, shares in the Insull companies collapsed, with rumors of managerial ineptness and fraud hastening the empire's decline into insolvency. Hundreds of thousands of stock and bondholders were wiped out as a result, and the panic caused by the Insull crash led to runs that closed 25 Chicago-area banks. The Insull name, consequently, came to be widely reviled.³⁸ In the run-up to the 1932 election, Roosevelt had harshly criticized Samuel Insull and denounced the entire power industry as "evil."³⁹ At one particular campaign event, while condemning the selfish and monopolistic practices of industrial and financial barons, Roosevelt referred to "the lone wolf, the unethical competitor, the reckless promoter, the Ishmael or Insull whose hand is against every man's."⁴⁰

Samuel Insull absconded to Greece in 1932 after learning of a pending federal indictment, prompting the Banking Committee to interview his son, Samuel Insull, Jr., instead. With the empire's heir on the stand, the Committee attempted to demonstrate that the Insull family had used its privileged position to take advantage of its companies' shareholders. Specifically, Pecora revealed that Insull family members had signed a contract giving them the option to purchase more than 1.2 million shares in the Insull Utility Investment Company for less than \$12 million at a time when their value on the exchange was over \$36 million. Insull, Jr. defended his family's actions, claiming that the contract had been made at an earlier date and simply went unsigned for some time, and that nobody had expected the stock price to appreciate as it did.⁴¹

In addition to probing the family's questionable dealings in company stock, Pecora targeted the Insull consortium's notoriously convoluted organizational structure. The testimony of Owen D. Young, who served as chairman of General Electric and was one of the Insull companies' creditors, proved especially revealing:⁴²

[The Insull group consisted of great] numbers of operating utilities, with holding companies superimposed on the utilities, and holding companies superimposed on those holding companies, investment companies and affiliates, which made it, as I thought then and think now, impossible for any man, however able, really to grasp the situation. . . . And if I may add: I should like to say here that I believe Mr. Samuel Insull was very largely the victim of that complicated structure, which got even beyond his power, competent as he was, to understand it. . . . [I]f I am right in thinking that Mr. Insull himself was not able ultimately to understand that structure, how can the ordinary investor . . . be expected to know, or even to inform themselves, conscientious and able as they might be, really as to the value of those securities?⁴³

The highly fragmented structure of the utility empire allowed the Insull family to creatively bypass lending laws. By having their myriad companies borrow relatively small sums from a number of

Illinois' biggest banks, the Insull group was able to evade a state law that prevented banks from lending more than 15% of their total capital and surplus to any one entity. That is, while no single Insull firm borrowed more than the 15% limit from any bank, certain individual banks' aggregate lending to all Insull-controlled companies far exceeded the statutory ceiling.⁴⁴

The Committee also revealed major accounting irregularities, including multiple occasions in which Insull firms recorded profits in their annual reports, but reported losses on their official tax filings. Additionally, the Committee drew attention to the actions of Halsey Stuart, an investment bank which owned large caches of Insull securities and which shared many of its directors with Insull firms. Halsey Stuart, Pecora asserted, had used stock pools to maintain Insull company shares at inflated prices.⁴⁵

National City Inquiry

After finishing its inquiry into the Insull empire, the Banking Committee commenced a headline-grabbing examination of National City Bank and National City Company, the latter having been established as a security affiliate of the former in 1911. During the booming 1920s, National City Bank had been the largest bank in the nation, while National City Company had been "reputed to be the world's largest distributor of securities," averaging \$1.5 billion in annual securities sales at the height of its business.⁴⁶

Pecora began the inquiry with a detailed questioning of Charles E. Mitchell, who, as chairman of National City's board, presided over both the Bank and the Company.⁴⁷ The first few days of the hearings produced shocking revelations that *Time* magazine called the "Damnation of Mitchell." The Banking Committee revealed that Mitchell had received the then astounding sums of \$1,081,230 in 1927 (approximately \$13.4 million in 2008 dollars), \$1,341,634 in 1928 (\$16.8 million), and \$1,133,868 in 1929 (\$14.2 million). Additionally, Mitchell came under heavy scrutiny for selling 18,000 shares in National City to his wife during the market crash. In so doing, Mitchell established a \$2.8 million (\$35.1 million) capital loss, which, in spite of his significant earnings, allowed him to avoid paying income taxes for the year 1929. The media feasted on these disclosures and Mitchell quickly became the foremost scapegoat of the inquiry. Just five days into the National City hearings, Mitchell tendered his resignation, allegedly on the urging of then President-elect Roosevelt. Within a month, the former Wall Street titan was indicted on charges of income tax evasion.⁴⁸

Mitchell, however, was not Pecora's only target. The lawyer went on to attack all of the high-ranking officers of National City for their excesses, revealing that a "morale loan fund" had been established by National City in the weeks after the initial market crash.⁴⁹ Through this fund, roughly 100 of National City's officers borrowed \$2.4 million of the firm's money to help them cover personal losses stemming from the market downturn. These officers did not need to pledge collateral to obtain such funds and their loans bore no interest. By the time of the hearings, "[o]nly about five per cent of this money had been repaid" and National City had made no efforts to collect the remainder, simply writing much of it off as a loss.⁵⁰

In addition to disgracing National City's officers, the Banking Committee attempted to demonstrate that National City Bank and National City Company were "inseparably interwoven" and thereby violated laws dividing commercial banking and investment banking functions.⁵¹ Pecora revealed that the very same stockholders that owned the Bank also owned the Company; in fact, the Bank's and the Company's stock certificates were printed on the opposite sides of a single piece of paper. Additionally, Pecora disclosed that the Company's initial capital had been quickly and easily obtained through the declaration of a one-time 40% dividend on the Bank's stock, and that all voting

power in the Company was vested in three trustees, each of whom served as a director or officer at National City Bank.⁵²

To highlight National City Company's high-pressure sales tactics, Pecora called witnesses, including ordinary investors, to testify before the Banking Committee. Questioning revealed that National City representatives had persuaded clients into taking on sizable loans to facilitate larger purchases, that many agents had actively dissuaded customers from cashing out, and that the Company had vigorously pushed certain securities in which it had a particular interest. Indeed, the Company applied especially strong pressure on its customers to buy stock in National City itself, selling nearly 2 million shares in its parent company (totaling some \$650 million) from mid-1927 to the end of 1930.⁵³ Pecora also showed that National City Bank depositors were specifically targeted and solicited by Company sales representatives, and that the management of National City aggressively encouraged agents to sell as many securities as possible—particularly those that were slumping, riskier, and harder-to-move—by making subtle threats on agents' job security and by holding frequent competitions that offered cash prizes to top sellers.⁵⁴

The inquiry also revealed numerous instances in which National City Company had willfully withheld pertinent information from its clients regarding certain securities that it offered. The most dramatic example occurred in 1927 and 1928, when National City Company helped sponsor and market \$90 million in Peruvian bonds in spite of repeated internal reports acknowledging that the country suffered from political instability, an unfavorable balance of trade, a poor credit history, and significant budget problems. The Company's bond prospectuses, however, made no mention of Peru's adverse economic conditions. Within a few years, the entire issue of Peruvian bonds had gone into default, costing bondholders some \$75 million by early 1933.⁵⁵

Pecora further demonstrated that National City Company had engaged in pool operations (though company officials used more euphemistic terms such as "joint accounts") to prop up the price of particular securities in which it had a strong interest. Additionally, the Company was shown to have traded heavily in National City Bank shares. Although banks were expressly forbidden from trading in their own stock, because National City Company was a security affiliate of National City Bank, such dealing effectively skirted the law.⁵⁶

The Banking Committee also accused National City of offering special privileges to insiders that were not available to normal investors and shareholders. Pecora showed that National City Company had purchased a large quantity of the newly organized Boeing Corporation's shares in 1928, but instead of passing the stock on to the public as in normal investment banking procedure, National City distributed shares at favorable prices to an assortment of its "officers, directors, key men, and special friends."⁵⁷ When Boeing stock began trading on exchanges soon thereafter, prices immediately surpassed the rates paid by the firm's "special friends." Many, including the National City Company itself, made handsome profits. Additionally, the Banking Committee highlighted an instance in 1931 in which National City Company, just weeks after underwriting a \$66 million issue of bonds on behalf of the Port Authority of New York, extended an unsecured \$10,000 loan to the Port Authority's general manager. By the time of the inquiry, Pecora noted, none of the loan had been repaid.⁵⁸

Finally, Pecora showed how National City Bank used its security affiliate and its shareholders to bail itself out of bad loans. Amid a boom in sugar prices during World War I, the Bank had lent significant sums to Cuban sugar firms. When sugar prices plummeted in the early 1920s, however, the Cuban firms proved unable to pay back their loans. In response, National City called on its shareholders to purchase \$50 million in new stock. The shareholders complied, and the Bank and the Company evenly split the newly raised capital. Immediately, the Company used its \$25 million capital increase to buy every share in the newly created General Sugar Corporation. This new

corporation, entirely controlled by National City Company, used its \$25 million capital injection to purchase the bad Cuban sugar loans from National City Bank. Eventually, the Company wrote down the value of its General Sugar holdings to \$1, effectively realizing a \$25 million loss on this investment. Of course, the investment was never intended to make money for the Company or its stockholders; rather, it was a calculated plan by which the Company was able to erase what would have been a serious point of concern—the imprudent loans to Cuban sugar companies—from its parent bank's balance sheets. At the time of the \$50 million stock issue, investors were completely unaware of the chicanery that the Bank and the Company planned to employ, as National City opted not to inform shareholders of its true intent in raising the capital.⁵⁹

Financial Reforms of 1933

On March 4, 1933, just two days after Pecora finished his examination of National City, Franklin Delano Roosevelt was sworn in as president. In his inaugural address, Roosevelt decried “unscrupulous money changers” and promised to bring about “strict supervision of all banking and credits and investments.”⁶⁰ Indeed, with panicking depositors running on banks throughout the country, Roosevelt sprang into action, declaring a national bank holiday within two days of assuming the presidency. Roosevelt then publicly directed federal inspectors to scrutinize the finances of every single national bank in the U.S., pledging to reopen all those institutions that the inspectors deemed solvent.⁶¹

The Glass-Steagall Banking Act of 1933

With Roosevelt's bank holiday underscoring the dire straits of the American banking industry, Congress reconsidered and ultimately passed a banking reform bill that had been repeatedly revived and revised since its initial introduction in January 1932.⁶² This legislation, which was popularly referred to as the Glass-Steagall Act* after its sponsors Senator Carter Glass and Representative Henry Steagall, reformed American banking in two major ways.⁶³

The first of these reforms was the establishment of deposit insurance. A Temporary Deposit Insurance Fund, which was financed by contributions from member banks, was established on January 1, 1934, and provided \$2,500 in insurance per depositor (this level was soon raised to \$5,000 per depositor). Though slightly later than prescribed in the Glass-Steagall Act, this temporary entity was eventually replaced by the permanent Federal Deposit Insurance Corporation in 1935.⁶⁴ The banking legislation of 1933 and 1935 also provided for significant federal supervision of insured banks.⁶⁵

The second major component of the Glass-Steagall Act of 1933 separated the deposit banking and investment banking industries. Specifically, the act gave national banks, such as National City, one year to break with their security investment affiliates, and barred the officers and directors of a commercial bank from acting as officers or directors of an investment bank. The act also required private banks, like J.P. Morgan and Company, to choose between their deposit banking business and their securities underwriting business, as they could no longer engage in both.⁶⁶

* The Banking Act of 1933 should not be confused with the first Glass-Steagall Act passed in 1932. The first Glass-Steagall Act expanded the acceptable collateral that banks could post in order to receive Federal Reserve loans and also allowed the nation's money supply to be backed, in part, by Treasury securities. For more, see Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton, N.J.: Princeton University Press, 1963), pp. 191, 321.

While Roosevelt praised the Glass-Steagall Act, which he signed into law on June 16, 1933, many in the banking community were highly critical of the new legislation. A number of detractors, including the president of the American Bankers' Association, attacked the act's deposit insurance provision, claiming that it would reward unstable banks at the expense of strong and solvent institutions. Other critics made broader arguments, claiming that the act was highly detrimental to the banking and investment industries and that it was "likely to slow up the recovery" from the ongoing depression.⁶⁷

Securities Act of 1933

Back on March 29, when the American public was still fuming over the disclosures of Pecora's National City inquiry, President Roosevelt presented Congress with his outline for new securities legislation, which he claimed would "give impetus to honest dealing in securities and thereby bring back public confidence."⁶⁸ Through such a bill, the president proposed to add to "the ancient rule of caveat emptor [let the buyer beware], the further doctrine 'let the seller also beware.'"⁶⁹ Over the next eight weeks, several versions of a securities bill were drawn up, debated, and revised.⁷⁰

In its final form, the Securities Act of 1933, which was also known as the Truth in Securities Act, required issuers of new securities to file application papers with the Federal Trade Commission (FTC)^{*} and to publish prospectuses providing extensive details about their companies, including:

1. The names and addresses of all directors, high-level officers, and large shareholders[†], plus details about their overall holdings of the company's securities and their stakes in the impending securities issue.
2. The amount of compensation received by each director, and the amount of compensation, if in excess of \$25,000 annually, received by each officer or other employee.
3. The names and addresses of those underwriting the issue of securities, and details about their stakes in the impending securities issue and their overall holdings of the company's securities.
4. Detailed information about the company's operations and business dealings, and detailed information about all of its outstanding securities and options.
5. Details on how the proceeds from the securities' sale were intended to be employed by the company, how the price was determined, and all compensation received by the issue's underwriters and promoters.
6. A recent balance sheet noting all assets and liabilities, along with a profit and loss statement.⁷¹

^{*} Many types of securities were exempt from FTC registration, including all extant securities, all securities issued by banks and savings and loan institutions, all railroad securities, and all federal, state and local government securities. Other securities that had a repayment period of nine months or less, were issued intrastate, represented "insurance annuity contracts," and totaled no more than \$100,000 were also subject to FTC exemption. For more see, Joel Seligman, *The Transformation of Wall Street* (Boston: Northeastern University Press, 1995), p. 71.

[†] Large shareholders were those owning or with the option to own greater than 10% of the company's overall stock, or those owning or with the option to own greater than 10% of any single class of the company's securities. For more, see "'Truth in Securities' Bill Repassed by House, Senate," *Wall Street Journal*, May 25, 1933, p. 10.

According to the act, the FTC had 20 days to review the company's registration material before the firm would be allowed to offer its new securities for public sale, and the entire securities issue could be delayed if the FTC found any problems with the company's documentation. Also, the Securities Act contained stringent liability rules, allowing investors who discovered inaccuracies or material omissions in the FTC filing to sue all parties involved in the registration's preparation. In the event of such a suit, the act stated that the burden of proof would fall on the security-issuer and all other parties involved in the security's issuance to demonstrate that they had not intentionally misled investors. Finally, the Truth in Securities Act gave the FTC the power to enact standardized accounting guidelines, as variability in such methods had been a cause of much confusion over the years and had disallowed investors from easily comparing one firm's books to another's.⁷²

Exchange Control?

On the same day that he introduced the initial Truth in Securities bill in March 1933, Roosevelt made clear that he wanted to extend government regulation to include securities exchanges. However, Roosevelt also stated that his administration was "not yet ready" to propose such legislation.⁷³ Fearing an eventual regulatory bill, New York Stock Exchange President Richard Whitney asked to meet with President Roosevelt. At their meeting, Whitney attempted to convince Roosevelt that federal securities exchange regulations were unnecessary, stating that the NYSE was both willing and capable of policing itself. Whitney also tried to show that his organization's interests were actually in line with Roosevelt's, claiming that "the vast majority of the members of the Exchange are anxious to put the security business on a higher plane than it has ever been before."⁷⁴ Not long after the meeting, the NYSE enacted new internal regulations that required all trading pools and similar accounts to file weekly reports, imposed minimum balances on customers' margin accounts, and dissuaded securities distributors from engaging in aggressive sales policies. Nevertheless, it appeared that Roosevelt still favored federal regulation.⁷⁵

Criticism and the Dickinson Committee

Criticism of the Securities Act began immediately, and rose to a crescendo during the summer and fall of 1933. Detractors claimed that the law was too complex and that its liability rules were too harsh, making it virtually impossible for new companies to obtain startup financing and for existing firms to increase capital. Because of these restrictive effects on business, opponents argued, the law could potentially serve to exacerbate the ongoing depression. Some within the Roosevelt Administration also came to believe that the legislation needed to be revised, and Roosevelt responded by having two separate committees study the bill's alleged detrimental effects on securities sales. One of the committees, the so-called "Dickinson Committee," which was named after Assistant Commerce Secretary John Dickinson, was also charged with the additional task of drafting an outline for a new bill to regulate securities exchanges.⁷⁶

The Pecora Hearings Resume

J.P. Morgan and Company

On May 23, 1933, just four days before President Roosevelt signed the Securities Act into law, the Pecora Committee commenced an investigation of J.P. Morgan and Company. The publicity generated by the Pecora hearings peaked during the inquiry into the House of Morgan, which *Time*

magazine had described as "the greatest and most legendary private business of modern times."⁷⁷ The company had traditionally kept a lower profile than other major Wall Street institutions, and its top partner, J.P. Morgan, Jr., had long avoided the public spotlight. Thus, when the scion of the House of Morgan was called to testify, droves of reporters and spectators flocked to the Senate Office Building, forcing the Banking Committee to move the hearings to a larger venue.⁷⁸ During the first day of Morgan, Jr.'s testimony, Pecora's questioning revealed that neither the banker nor any of his partners had paid income taxes for the years 1931 and 1932. In fact, because of major investment losses, many of the nation's wealthiest citizens earned no net taxable income during these years, a revelation which proved to be one of the most sensational of the entire hearings and prompted the *Washington Post* to print an article entitled "Rich Men Pay No Tax."⁷⁹

Over the twelve-day inquiry, Pecora attempted to demonstrate that J.P. Morgan and Company's dealings had benefited insiders at the expense of ordinary investors and that the company had abandoned its exacting standards in order to capitalize on the market boom. Specifically, Pecora exposed how the company's use of "preferred lists" enabled well-connected investors to make enormous and immediate capital gains. On at least five occasions, J.P. Morgan offered stock to its firm members and other influential figures (including prominent national politicians and business leaders) at prices well below the prevailing market rates. For example, the company had given insiders a chance to purchase shares in the Alleghany Corporation for \$20 while such securities were trading at \$35 on the floor of the New York Stock Exchange.⁸⁰ Those lucky enough to be on J.P. Morgan's preferred lists could make an immediate profit by quickly selling the stocks on the exchange. Such preferred lists violated no laws, but their existence strengthened the perception that Wall Street insiders were given opportunities not available to ordinary investors.⁸¹

Although Pecora admitted that "the investigation of the Morgan firm elicited no such disclosures of glaring abuses" as those exhibited by other Wall Street firms, the public was still outraged by the secretive and disreputable, albeit technically legal, practices that the Morgan hearings had uncovered.⁸² An editorial in the *New York Times* announced:

Here was a firm of bankers, perhaps the most famous and powerful in the whole world, which was certainly under no necessity of practicing the small arts of petty traders. Yet it failed under a test of its pride and prestige. By a mistake which had with the years swollen into a grievous fault, it sacrificed something intangible, imponderable, that has to do with the very highest repute. The members of such a partnership forgot that they must not only be beyond reproach in their financial dealings—as they doubtless are—but must always appear to be so.⁸³

Some observers argued that the public's bitter reaction to the J.P. Morgan disclosures galvanized support for the Glass-Steagall banking bill, which the Senate abruptly and resoundingly passed amid the Morgan hearings.⁸⁴

Chase National Bank

After concluding its inquiry into the dealings of J.P. Morgan and Company, the Banking Committee investigated two more prominent investment banks, Kuhn, Loeb and Company and Dillon, Read and Company. In mid-October, however, Pecora turned his attention to Chase National Bank, which had overtaken National City in 1930 as the country's largest bank.⁸⁵

Pecora revealed that Chase National Bank had established no less than five security affiliates, the most important of which was Chase Securities Company. Just like National City Company, Chase Securities Company was owned by the exact same stockholders as its parent bank, with the two

companies' stock certificates again "printed on reverse sides of the same piece of paper."⁸⁶ The Banking Committee showed that Chase Securities Company had conducted pool operations in a wide range of corporate stocks and foreign bonds during the late 1920s and early 1930s. Additionally, it was shown that the security affiliate had participated in at least eight pool operations in its parent bank's stock, which, Pecora argued, had helped drive Chase's share price from \$575 in the autumn of 1927 to \$1,415 two years later.⁸⁷ When former Chase Chairman Albert H. Wiggin was asked flatly why Chase Securities Company had decided to engage in such stock pools (Wiggin preferred the term "trading accounts"), he could only muster the response, "I think the times."⁸⁸ Shortly thereafter, Wiggin suggested that he "certainly would not do anything today that, if it turned out unfortunately, was going to be criticized."⁸⁹

Much as he had done with Charles E. Mitchell, Pecora went on the attack with Wiggin. Pecora focused on the former chairman's income, showing that in addition to his compensation from Chase, Wiggin held 59 directorships in other firms, some of which paid him up to \$40,000 annually for his services. Many of these firms were also clients of Chase National Bank. Pecora highlighted a particular instance in which Wiggin, who served on a committee of the Brooklyn-Manhattan Transit Company, used his inside knowledge of Brooklyn-Manhattan's financial dealings with Chase to sell off his personal holdings of the transit company's stock while its share price was still high. Had he waited to sell his shares until knowledge of the company's dealings became publicly known, as a lay investor would have, Wiggin's sale would likely have netted less than half of what it actually did.⁹⁰

Additionally, the Banking Committee went on to show how Wiggin had established six companies, either owned by himself or his immediate family, which seemed to do little more than speculate and engage in stock pools with money borrowed from Chase National Bank. Through these companies, Wiggin sold his own bank's stock short, resulting in a \$4 million personal profit in just a three-month period in late 1929.⁹¹ Like Mitchell, Wiggin left the hearings in disgrace, having felt compelled by a "storm of popular disapproval" to refuse his \$100,000 annual pension from Chase.⁹²

The shocking disclosures regarding Chase National prompted the bank's current chairman Winthrop T. Aldrich, who had already received stockholder consent to disaffiliate Chase Securities Company from Chase National Bank in May, to distance the firm further from Wiggin and the speculative practices of the 1920s. Said Aldrich, "as long as I have anything to do with the management, the market in Chase stock shall not be affected by the operation of trading accounts by the affiliates of the bank."⁹³ Aldrich backed his tough words by explicitly banning all of the bank's subsidiaries from engaging in pool operations in Chase stock.⁹⁴

The Proposed Securities Exchange Act

The Dickinson Committee Report

In late January 1934, several weeks after Pecora finished up his examination of Chase National Bank, the Dickinson Committee released its official report on a new securities exchange bill. While the Dickinson group had previously announced that it was in favor of a bill that allowed exchanges to "discipline [their] own members and conduct their [own] affairs," the committee's formal report elaborated considerably on this initial sentiment.⁹⁵ Most notably, the report suggested the creation of a "Federal Stock Exchange Authority," either as an independent body or as a part of the Federal Trade Commission. The committee favored granting this new body the authority to study the securities industry further and make its own rules regarding pools, short selling, margin

requirements (in conjunction with the Fed), security listing requirements, reporting and accounting standards, and the role of exchange specialists.* Additionally, the Dickinson group maintained that the Federal Stock Exchange Authority should be given adequate power to punish violators.⁹⁶

While the Dickinson Committee wanted to leave much of the regulatory decision-making to the proposed Federal Stock Exchange Authority, the report did make a few specific recommendations, namely that all exchanges engaging in interstate commerce should be licensed by the federal government (licensure of over-the-counter exchanges and individual brokers, the committee stated, should not be required). Additionally, the Dickinson group advised that any new legislation should ban wash sales and matched sales, and should compel all companies with listed securities to take steps to increase their transparency, including requiring them to release quarterly reports and to submit to annual examinations of their books by independent accountants.⁹⁷

Introduction of the Bill

President Roosevelt disagreed with the Dickinson Committee's recommended approach, believing instead that a new securities bill should grant the government more explicit regulatory authority over the nation's exchanges. On February 9, 1934, the president wrote a message to Congress which briefly outlined his vision for a new securities exchange bill.⁹⁸ He stated:

The exchanges in many parts of the country which deal in securities and commodities conduct, of course, a national business because their customers live in every part of the country. The managers of these exchanges have, it is true, often taken steps to correct certain obvious abuses. We must be certain that abuses are eliminated, and to this end a broad policy of national regulation is required.⁹⁹

After the president's statement was presented, Senator Duncan U. Fletcher introduced the National Securities Exchange Act of 1934. As written, the bill would deny all exchanges the right to use the postal system or to engage in any form of interstate commerce unless they registered with the Federal Trade Commission. Additionally, the act would prohibit margin lending on any security not listed on a registered exchange. Margin lending would be permitted on exchange-listed securities, but would be capped at the higher of two values: either 40% of the security's current price, or 80% of the security's lowest selling price over the previous three years. In addition, the act would impose an outright ban on all wash sales, matched sales, any actions aimed at artificially raising or lowering a security's price (e.g., pool operations and bear raids), the dissemination of rumors or other deceptive information about a security, any actions aimed at holding a security's price steady (unless the FTC was first informed about such actions), cornering a security (i.e., taking a controlling stake in a security with the intent of manipulating its price), the exercising of options (such as puts and calls) on securities, and the short selling of exchange-listed securities. The act would also impose strict civil liability rules on violators of the bill's provisions, allowing injured parties to file suit.¹⁰⁰

In addition, Fletcher's bill would ban exchange members and brokers from both underwriting securities and dealing in securities on their own accounts. The act would also require the registration of exchange specialists and would prohibit these specialists from disclosing information that was not publicly available. Furthermore, the bill would require all listed securities to be registered with both the exchange and the FTC. Securities issuers would also be compelled to publish reports detailing their business on an annual, quarterly, and even monthly basis. The act would require that

* The Securities Exchange bill defined a specialist as "any person who specializes in the execution of orders in respect of any security or securities on an exchange and who commonly receives from other members of the exchange orders for execution in respect of such security or securities." See "Text of Bill for Regulating Stock Exchanges," *Wall Street Journal*, Feb. 10, 1934, p. 4.

exchanges, and all of those doing business on such exchanges, maintain detailed transaction records, which were to be made available for FTC inspection upon request. Additionally, the act contained a so-called "anti-Wiggin" rule, which would compel directors, officers, and major shareholders to disclose their dealings and holdings in their companies' securities and would forbid them from speculating in such securities. Also, the FTC would be empowered to revoke an exchange's or a security's registration if violations were discovered. Finally, the FTC would be given the authority to establish rules for over-the-counter (non-exchange-based) securities markets and be granted broad leeway to modify the abovementioned rules as it saw fit.¹⁰¹

Whitney Responds

On February 13, four days after Senator Fletcher introduced the Securities Exchange Act, Richard Whitney announced three additions to the New York Stock Exchange's governing regulations. The first new rule disallowed NYSE members, or their affiliated companies, from engaging in any trading pools or other actions aimed at "unfairly influencing the market price of any security."¹⁰² The second new regulation prohibited NYSE specialists, or their affiliated companies, from either granting or obtaining options relating to the securities in which they specialized. And the final new rule barred NYSE specialists from revealing any information about the orders with which they had been entrusted (certain NYSE committees were exempt from this final prohibition).¹⁰³

In addition to announcing the new rules, Whitney gave his first interviews in over a year. He attacked a number of the "rigid and unworkable provisions" of the proposed Securities Exchange Act, claiming that the New York Stock Exchange had already adopted sufficient rules "to prevent excessive speculation."¹⁰⁴ In particular, he argued that the bill's high margin requirements "might force the liquidation of many accounts," that the bill's prohibition on lending against unlisted securities would "deprive people owning unlisted securities of the right to use them as the basis of credit in brokerage accounts," and that the bill's ban on exchange members acting as securities dealers would unduly harm the nation's smaller regional securities markets and would "destroy the odd-lot business which now affords the only market to investors holding less than one hundred shares of stock."¹⁰⁵ But Whitney reserved his harshest criticism for the publishing requirements of the bill:

Probably the worst features of the bill are those which purport to regulate corporations and corporate practices by imposing conditions upon the listing of securities upon exchanges. The bill requires every corporation listed on an exchange to register its securities with the Federal Trade Commission. The minimum requirements set forth in the bill are so burdensome that corporations may be unwilling to keep their securities listed on any exchange. Furthermore, the Federal Trade Commission is given unlimited power to require additional information in regard to corporate affairs which like all other reports or information furnished to the Commission, must be made available to the public. These powers are so extensive that the Federal Trade Commission might, in effect, control the management of every listed company.¹⁰⁶

Additionally, Whitney stated that the potential dissemination of a company's "confidential statistics," which could result under the bill's publishing mandate, "would be destructive of American industry because it would furnish vital information to foreign competitors."¹⁰⁷

Led by Whitney, the heads of the nation's stock exchanges and brokerages quickly began a wide-reaching campaign against the Securities Exchange Act, rallying their colleagues across the country via telegram and swamping congressmen with a flood of messages, phone calls, and letters aimed at

crushing support for the bill. Brokers argued that the act was far too harsh and restrictive and that it would likely drive "speculation and investing in American stocks to foreign markets" if enacted.¹⁰⁸

On February 15, Whitney sent a copy of the bill and a letter criticizing it to all companies listed on the NYSE, claiming that the proposed legislation could end up "destroying the market for their securities."¹⁰⁹ On the same day, he also sent a copy of the bill and a different letter to every member of the exchange. The letters, which were printed in the following day's *Wall Street Journal*, highlighted specific facets of the proposed legislation that exchange members and listed firms would likely find disagreeable. In his letter to listed companies, for example, Whitney drew attention to provisions in the bill that would impose high fines on firms for noncompliance, would increase companies' vulnerability to lawsuits brought by investors, and would place securities trading limitations on directors, officers, and other large shareholders. In his letter to NYSE members, Whitney highlighted a number of other provisions, including those that would ban short selling, limit how much members could borrow, and grant the FTC the right to suspend or expel exchange members for perceived violations.¹¹⁰

The *New York Times* wrote that Whitney's response to the bill "was regarded in Wall Street as the broadest program of education on a Federal measure which the Exchange has ever directed toward the financial and business communities."¹¹¹ Senator Fletcher chose different words to describe the response:

The propaganda released by the Exchange officials is intended to persuade the people that regulation of that Exchange and the other Exchanges by the Federal Government will hurt business. Whose business? Only that of brokers who have lined their pockets by disregarding the interest of their customers.¹¹²

Pecora Attacks the NYSE

In mid-February, while Whitney and others were attempting to discredit the newly introduced Securities Exchange bill, Pecora was busy revealing several instances in which the New York Stock Exchange had failed to prevent the manipulation of security prices. Specifically, the Banking Committee detailed trading pools in the stock of alcohol corporations that had occurred over the previous summer. The Committee presented an internal NYSE report which showed that the stock exchange had conducted its own examination of these suspect alcohol-stock transactions several months earlier. According to its report, the New York Stock Exchange had concluded that there had been "no material deliberate improprieties."¹¹³ Pecora, however, showed that there had indeed been a concerted effort to artificially drive up the price of alcohol stocks and that those involved benefited considerably. Regarding the Banking Committee's findings, the chairman of the New York Stock Exchange's listing committee admitted to Pecora that "a cog slipped somewhere" and that his office was to blame for making a rare mistake.¹¹⁴

Whitney to Testify

On February 22, 1934, Whitney was called to testify during the congressional hearings on the proposed Securities Exchange Act.¹¹⁵ Whitney aimed to persuade lawmakers to strike down the bill, but he faced significant resistance. The Pecora hearings had impressed upon the nation a desire for financial reform, and the recent inquiry into the 1933 alcohol pools had just shown that Whitney's New York Stock Exchange had failed in one key area of self-regulation. However, in the two weeks since the bill was introduced, Whitney had effectively mobilized much of the financial world to oppose the act and to publicly denounce it as a heavy-handed overreaction. With these two opposing

forces at play, would Whitney be able to convince Congress that the Securities Exchange Act granted the FTC too much regulatory power and that it was in the nation's best interest to let stock exchanges police themselves? Or would Whitney's comments fall on deaf ears, with the legacy of the Pecora hearings helping to carry another sweeping financial reform bill through to law?

Exhibit 1 Dow Jones Industrial Average, January 1, 1920 to February 21, 1934



Source: Adapted from Dow Jones, "Dow Jones Index | Averages | Index Data," Dow Jones Indexes website, Dow Jones Averages, Historical Values, <http://www.djindexes.com/mdsidx/index.cfm?event=showavgIndexData>, accessed September 25, 2008.

Exhibit 2 Securities Market Data, 1910-1933

	Dow Jones Industrial Index (year-end values)	Corporate Security Issues (\$ millions)		Sales on the New York Stock Exchange		Common Stock Price Indexes (1910=100)			
		Bonds and Notes	Common and Preferred Stocks	Volume of Stocks (millions)	Par Value of Bonds (\$ millions)	Railroads	Industrial	Utilities	Composite
1910	59.60	1,113	405	164	635	100.0	100.0	100.0	100.0
1911	59.84	1,387	352	127	890	101.0	97.4	103.6	100.6
1912	64.37	1,350	904	131	675	100.4	105.8	105.7	102.6
1913	57.71	1,194	452	83	502	87.5	91.2	92.9	89.3
1914	54.58	1,175	262	48	462	76.9	83.6	88.5	80.1
1915	99.15	1,111	325	173	961	91.9	136.3	105.5	105.8
1916	95.00	1,405	782	233	1,150	88.7	140.9	107.2	105.6
1917	74.38	1,076	455	186	1,057	68.4	105.8	77.2	78.5
1918	82.20	1,047	298	144	2,063	73.1	123.0	75.8	87.0
1919	107.23	1,122	1,546	317	3,809	66.4	161.1	69.7	99.1
1920	71.95	1,750	1,038	227	3,977	63.3	105.3	66.9	76.5
1921	81.10	1,994	275	173	3,324	64.5	113.1	79.0	80.1
1922	98.73	2,329	621	259	4,370	76.0	141.4	93.7	98.8
1923	95.52	2,430	736	236	2,790	71.6	140.3	94.2	95.8
1924	120.51	2,655	865	282	3,804	89.2	165.0	109.6	114.8
1925	156.66	2,975	1,247	454	3,384	102.9	209.1	128.4	139.9
1926	157.20	3,354	1,220	451	2,987	109.4	214.1	131.8	144.1
1927	202.40	4,769	1,738	577	3,269	129.0	278.8	162.7	183.6
1928	300.00	3,439	3,491	920	2,903	142.4	381.9	232.9	245.5
1929	248.48	2,620	6,757	1,125	2,982	137.9	299.5	265.9	211.4
1930	164.58	3,431	1,526	810	2,764	94.1	202.0	200.6	146.8
1931	77.90	2,028	343	577	3,051	32.3	106.0	115.8	75.6
1932	59.93	620	23	425	2,967	25.6	91.1	100.7	65.2
1933	99.90	227	152	655	3,369	41.8	162.8	87.0	97.7

Source: Adapted from Peter L. Rousseau, "Common stock prices: 1802-1999," and "Corporate security issues: 1910-1934," and "Sales of stocks and bonds on the New York Stock Exchange: 1879-1999," *Historical Statistics of the United States, Earliest Times to the Present: Millennial Edition*, eds. Susan B. Carter et al. (New York: Cambridge University Press, 2006), tables Cj800, Cj801, Cj802, Cj803, Cj834, Cj837, Cj857, Cj858; Dow Jones Industrials Average (Actual), Global Financial Data, Inc., accessed February 10, 2009.

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April 18, 1932. After passing the Senate, the bill died in the House, as the congressional session ended before the bill was brought to a vote. On the very first day of the special congressional session that Roosevelt called following his inauguration, the bill was again introduced. The bill was disregarded, however, as congress focused on the more pressing matter of the emergency bank holiday. Revised to include federal deposit insurance, the bill was again presented to the Senate on May 1, 1933. The revised senate bill, proposed by Carter Glass, was eventually merged with a very similar bill proposed by Representative Henry Steagall. Congress passed the resulting Glass-Steagall bill on June 13, 1933. For more, see Edwin Walter Kemmerer, *The ABC of the Federal Reserve System*, 10th ed. (Princeton, NJ: Princeton University Press, 1936), pp. 190-192; Marcus Nadler and Jules I. Bogen, *The Banking Crisis: The End of an Epoch* (New York: Dodd, Mead & Company, 1933), pp. 52-53.

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¹⁰³ "Three Tight Rules Added by Exchange," p. 29.

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A N ★ O U N C E ★ O F PREVENTION

3CROT

Financial regulation, moral hazard,
and the end of "too big to fail"

★★★

by **David A. Moss**

THE MAGNITUDE of the current financial crisis reflects the failure of an economic and regulatory philosophy that proved increasingly influential in policy circles during the past three decades. This philosophy, guided more by theory than historical experience, held that private financial institutions not insured by the government could be largely trusted to manage their own risks—to regulate themselves. The crisis has suggested otherwise, particularly since several of the least regulated parts of the system (including non-bank mortgage originators and the major broker-dealer Bear Stearns) were among the first to run into trouble. Former Federal Reserve Chairman Alan Greenspan acknowledged in October 2008, "Those of us who have looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief."

★ FROM CRISIS TO CALM

OF COURSE, financial panics and crises are nothing new. For most of the nation's history, they represented a regular and often debilitating feature of American life. Until the Great Depression, major crises struck about every 15 to 20 years—in 1792, 1797, 1819, 1837, 1857, 1873, 1893, 1907, and 1929-33.

But then the crises stopped. In fact, the United States did not suffer another major banking crisis for just about 50 years—by far the longest such stretch in the nation's history. Although there were many reasons for this, it is difficult to ignore the federal government's active role in managing financial risk. This role began to take shape in 1933 with passage of the Glass-Steagall Act, which introduced federal deposit insurance, significantly expanded federal bank supervision, and required the separation of commercial from investment banking.

The simple truth is that New Deal financial regulation worked. In fact, it worked remarkably well. Banking crises essentially disappeared after 1933 (see chart, page 26), without any apparent

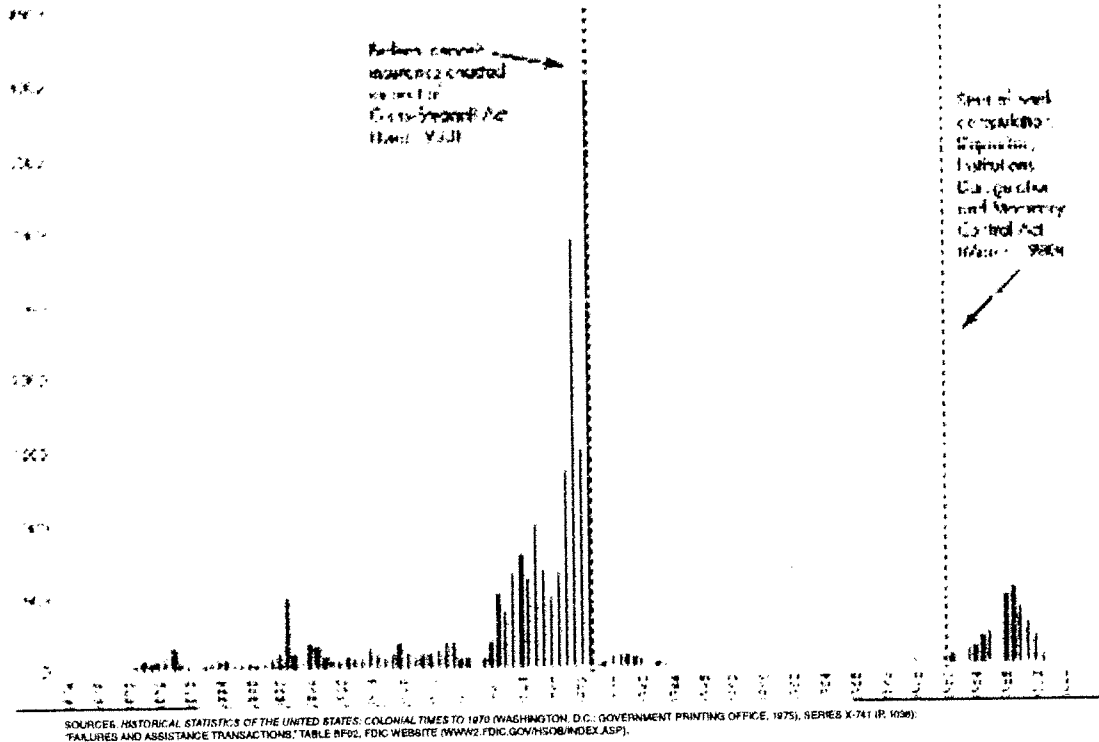
reduction in economic growth. Not only was the period of 1933-1980 one of unusually strong growth, but the growth was broad based, associated with stable or *falling* income inequality, rather than with the *rising* inequality that took hold after 1980.

Perhaps even more striking, America's post-Glass-Steagall financial system soon became the envy of the world. Although critics had warned that the forced separation of commercial from investment banking could undermine the nation's financial system, American financial institutions from Morgan Stanley to Goldman Sachs dominated global high finance for the remainder of the century.

Critics of Glass-Steagall had also warned that federal deposit insurance would encourage excessive risk-taking, what economists call "moral hazard." According to this argument, because depositors would no longer have to worry about the soundness of their banks and might well be attracted by the higher interest rates offered by riskier institutions, funds would ultimately flow to weak banks—rather than strong—and losses could mount. Said one opponent in 1933, "A reputation for high character [in banking] would be cheapened and recklessness would be encouraged."

Fortunately, the authors of Glass-Steagall (and the follow-on Banking Act of 1935) prepared for this threat, authorizing not only public deposit insurance but also meaningful bank regulation, designed to ensure the safety and soundness of insured banks. Regulation was necessary to deal with the moral hazard that critics warned about. The combination of insurance and regulation adopted as part of Glass-Steagall engendered a powerful dose of consumer protection, a remarkable reduction in systemic risk, and a notable increase in public confidence in the financial system. By all indications, this well designed risk-management policy strengthened the financial markets and helped prevent subsequent crises.

CALM AMIDST THE STORM: BANK FAILURES (SUSPENSIONS), 1864-2000



In retrospect, it appears that the New Dealers hit on a successful strategy: stringent regulation (combined with mandatory public insurance) for commercial banks, the biggest systemic threat at the time, and a lighter regulatory touch for most of the rest of the financial system. This approach helped ensure financial stability and financial innovation—the best of both worlds—for half a century. In fact, significant bank failures (in the form of the savings and loan crisis) did not reappear until after the start of bank deregulation in the early 1980s, when oversight was relaxed and the essential link between insurance and regulation was temporarily severed.

★ A MISTAKE, NOT AN ACCIDENT

LIKE THE SAVINGS AND LOAN FIASCO of the 1980s, the current financial crisis is the product of a mistaken regulatory philosophy—only this time the consequences have proved far more severe. In too many cases, regulators chose not to use tools they already had, or they neglected to request new tools to meet the challenges of an evolving financial system. The failure to regulate the sprawling market for credit default swaps (CDS) in the late 1990s and the Securities and Exchange Commission's 2004 decision to allow voluntary regulation on the part of major investment firms are two particularly striking examples.

In both of these cases and many others, the prevailing view of financial regulation was that less was more, because private actors could be trusted to optimize financial decisionmaking on their own. For example, Alan Greenspan in 2002 explained his view on "the issue of regulation and disclosure in the over-the-counter derivatives market" this way: "By design, this market, presumed to involve dealings among sophisticated professionals, has been largely exempt from government regulation. In part, this exemption reflects the view that professionals do not require the investor protections commonly afforded to markets in which re-

tail investors participate. But regulation is not only unnecessary in these markets, it is potentially damaging, because regulation presupposes disclosure and forced disclosure of proprietary information can undercut innovations in financial markets just as it would in real-estate markets." Sophisticated economic reasoning seemed to validate the point; and as the bubble inflated, the results spoke for themselves.

Ironically, it is possible that the success of New Deal financial regulation actually contributed to its own undoing. After nearly 50 years of relative financial calm, academics and policymakers alike may have begun to take that stability for granted. Given this mindset, financial regulation looked like an unnecessary burden. It was as if, after sharply reducing deadly epidemics through public-health measures, policymakers concluded that these measures weren't really necessary, since major epidemics were not much of a threat anymore.

But private financial markets and institutions have *always* had trouble managing risk—and especially systemic risk—on their own. The long series of financial crises that punctuated American history up through 1933 testifies to this fact, as does the current crisis, which exploded not coincidentally during a period of aggressive financial innovation and deregulation. Unfortunately, the timing of this most recent swing toward financial deregulation could not have been worse.

★ THE CURSE OF BIGNESS?

AT THE VERY TIME that policymakers were downplaying the importance of regulation—especially in the 1980s and 1990s—the financial system was changing in ways that greatly magnified their mistake. In particular, we began to see the emergence of a new systemic threat: the growth of massive financial institutions outside of commercial banking. For example, the assets of the nation's

security brokers and dealers increased from \$45 billion (1.6 percent of gross domestic product) in 1980 to \$262 billion (4.5 percent of GDP) in 1990 to more than \$3 trillion (22 percent of GDP) in 2007. All by itself, Bear Stearns saw its assets increase from about \$37 billion in 1990 to nearly \$400 billion at the start of 2007, and the behemoth Citigroup, after consolidating a broad range of financial services under one roof, grew its balance sheet from less than \$700 billion at the start of 1999 to more than \$2 trillion by 2007!

The rise of these massive institutions represented a profound change in our financial system and a powerful new source of systemic risk. Yet we didn't update our regulatory policies in response—a critical mistake.

Although there were obviously many causes of the current crisis (including irresponsible lending and borrowing in the mortgage markets, asset securitization carried to a dangerous extreme, a severely dysfunctional credit-rating system, and excessive leverage throughout the financial system), perhaps the biggest culprits of all were the supersized financial institutions. At root, this was a crisis of big institutions.

As asset prices rose, many of the huge financial conglomerates played a pivotal role in inflating the bubble. They used their pristine credit ratings (and their *illusion of permanence*) to access cheap funds on a tremendous scale, and they employed those funds in support of countless high-risk transactions and investments. Once the bubble began to deflate, it was many of these same huge (and hugely leveraged) firms that helped precipitate a vicious downward spiral as they all began desperately trying to sell troubled assets simultaneously. And when the bubble finally burst, federal officials concluded that they had to save these very same institutions from collapse, because the failure of any one of them could have triggered an avalanche of losses, potentially threatening the financial system as a whole.

★ IMPLICIT GUARANTEES AS FAR AS THE EYE CAN SEE

DURING THE COURSE of 2008 and early 2009, federal officials made absolutely clear that there was almost no limit to the resources they would devote to preventing or halting a systemic panic at a time of general financial distress. The Federal Reserve extended unprecedented support to investment banks, money-market funds, and the commercial-paper market; it also helped rescue Bear Stearns, AIG, and Citigroup. The Treasury guaranteed all money-market funds, injected capital into a broad range of financial institutions under the Troubled Asset Relief Program (TARP), supported the takeover of Fannie Mae and Freddie Mac, and also supported the operations of the Federal Reserve. The Federal Deposit Insurance Corporation (FDIC), meanwhile, increased deposit insurance coverage from \$100,000 to \$250,000 per account, guaranteed senior unsecured bank debt, and contributed to the rescue of Citigroup. In all, by the end of 2008, federal agencies had already disbursed more than \$2 trillion in responding to the crisis and had taken on potential commitments in excess of \$10 trillion, and those figures continued to increase in 2009.

As these extraordinary interventions prove, federal policymakers view many of the nation's largest financial institutions as too big—or, more precisely, too systemic—to fail. The only major non-bank financial institution that has been allowed to fail and enter Chapter 11 was Lehman Brothers, and the shock waves emanating from that event made it the exception that proved the rule.

The implicit federal guarantees that were once regarded as a special privilege of Fannie Mae, Freddie Mac, and other government-sponsored enterprises have now, by all accounts, been extended, essentially, to every major (systemically significant) financial institution in the country.

All such guarantees have the potential to invite excessive risk-taking—as a result of moral hazard. Unfortunately, implicit guarantees are *particularly* dangerous because they are typically open-ended, not always tightly linked to careful risk monitoring (regulation), and almost impossible to eliminate once in place. The costly federal takeover of Fannie Mae and Freddie Mac illustrates this point, as do the ever-rising costs of federal disaster relief—following floods and hurricanes, for instance—which represents another open-ended, and implicit, federal guarantee.

The extension of implicit guarantees to *all* systemically significant financial institutions takes moral hazard in the financial system to an entirely new level. Creditors of these institutions will monitor less aggressively, knowing that the federal government stands as a backstop, and they are likely to pay less attention to the riskiness of these institutions in chasing the highest yields. If we are not careful, the inevitable result will be more (and more excessive) risk-taking, greater losses, and further crises. If we are going to provide guarantees—and that decision has already been made—it is essential that we create effective mechanisms for monitoring and controlling the inevitable moral hazard.

★ RETHINKING REGULATION: TARGETING SYSTEMIC RISK

TODAY, FEDERAL OFFICIALS WAIT until *after* a financial institution is in trouble to decide if it poses a systemic threat to the broader economy. In 2008, Bear Stearns, Fannie Mae, Freddie Mac, AIG, and Citigroup were all deemed too systemic to fail—and taxpayers were put on the hook for hundreds of billions and perhaps trillions of dollars to help keep them alive.

This is the wrong approach. Regulators should not have to wait until the very last minute, when they are under enormous time pressure and often in the dead of night, to make such momentous decisions. By that point, financial regulation has already failed. The underlying problem can no longer be prevented. All that can be done is to stabilize the institution with an extraordinary infusion of taxpayer dollars. Even then there is no guarantee that the infusion will be sufficient.

A much better approach would be to identify financial institutions with “systemic significance” *in advance*—that is, in normal times—and to regulate them accordingly. These are institutions that are so big or so deeply interconnected with other financial actors that their failure could trigger cascading losses and even contagion across the financial system. They are also the institutions that, as we have seen, helped drive the crisis on the way up (by inflating the bubble) and on the way down (by provoking a fire sale in the financial markets). The Obama administration now calls these institutions “Tier 1 Financial Holding Companies.” Providing proper oversight of such institutions would help to prevent a crisis from striking in the first place, and it would put public officials in a much better position to deal with the consequences in the unlikely event that a crisis did occur. It would also help to update the highly successful New Deal regulatory strategy by ensuring vigorous regulation of today's greatest sys-

temic threats. As the saying goes, an ounce of prevention is worth a pound of cure.

★ REFORMING AMERICAN FINANCIAL REGULATION

CONGRESS AND THE PRESIDENT should direct a new regulatory agency to identify financial institutions whose failure would pose a systemic threat to the broader financial system. Such determinations would be made *continuously*, not simply in bad times, so that a complete list of financial institutions deemed to have “systemic significance” would always be publicly available.

The regulatory body designated to make these determinations (call it a Systemic Risk Review Board) would have broad powers to collect information, both from other regulatory agencies and directly from financial institutions themselves. All financial institutions—from banks to hedge funds—would be required to report to this body, irrespective of other regulatory coverage. Financial institutions would have the right to appeal a determination, but ultimately (if it was upheld or not challenged) the determination would be binding.

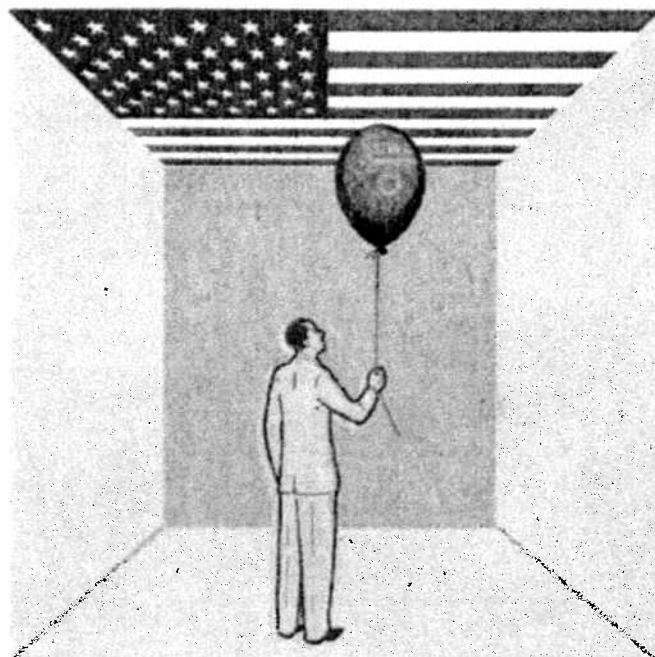
Once systemically significant institutions were clearly identified, it would then be necessary to provide appropriate oversight and, at the same time, to clarify (in advance) how such institutions would be regulated and governed at moments of distress.

PRUDENTIAL REGULATION. Precisely because of the potential threat they pose to the broader financial system, systemically significant institutions should face enhanced prudential regulation to limit excessive risk-taking and help ensure their safety. Such regulation might include relatively stringent capital and liquidity requirements, most likely on a counter-cyclical basis (to limit excessive lending in boom markets and the need for fire sales in down markets); a maximum leverage ratio (on the whole institution and potentially also on individual subsidiaries); well-defined limits on contingent liabilities and off-balance-sheet activity; and perhaps also caps on the proportion of short-term debt on the institution's balance sheet.

However implemented, an important advantage of the proposed system is that it would provide financial institutions with a *strong incentive to avoid becoming systemically significant*. This is exactly the opposite of the existing situation, where financial institutions have a strong incentive to become “too big to fail,” precisely in order to exploit a free implicit guarantee from the federal government. This unhealthy state of affairs can be corrected by being clear about the systemic nature of financial institutions and regulating them appropriately, rather than waiting until they are already in trouble to act.

FEDERAL INSURANCE. To the extent that systemically significant financial institutions will receive federal support in the event of a general financial crisis, such support should be formalized (and paid for) *in advance*. Historical experience suggests that government guarantees that are explicit, well defined, and closely monitored generate far less moral hazard than open-ended, implicit guarantees. It is important to convert what are now massive *implicit* guarantees into *explicit* ones that are clear, delimited, and well understood.

One option for doing this would be to create an explicit system of federal capital insurance for systemically significant financial



institutions. Under such a program, covered institutions would be required to pay regular and appropriate premiums for the coverage; the program would pay out “claims” only in the context of a systemic financial event (determined perhaps by a presidential declaration); and payouts would be limited to pre-specified amounts. For example, if a systemically significant financial institution with \$500 billion in assets were required to buy federal capital insurance equal to 10 percent of total assets, the potential payout by the federal capital insurance program in a systemic event would be \$50 billion. In return, the federal government would receive \$50 billion in non-voting preferred shares (which the affected institution would have the obligation to repurchase after the crisis had passed).

Such capital insurance would *not* create a new federal liability. Rather, it would make an existing *implicit* liability *explicit*. Because it is now understood that the federal government will support systemically significant financial institutions in the event of a crisis, it is only reasonable that these institutions pay premiums for this expected federal coverage in advance of any crisis and that the potential support be well defined and limited. In fact, such a program might well *reduce* the federal government's ultimate liability, because its obligation would be pre-specified and no longer open-ended.

There are other options as well, beyond federal capital insurance. One potentially attractive option—a convertible debt rule—would involve a regulatory requirement and trigger, but no government guarantee. The basic idea (patterned after a recent proposal by a group of distinguished financial economists) is that systemically significant institutions would be required to carry a sizable amount of special debt, which would automatically convert to equity capital in the event of a systemic crisis. In this way, systemic financial institutions could count on a significant—and potentially vital—reduction in leverage in times of general distress. With a portion of their debt turned into equity, these institutions ideally would not have to undertake emergency asset sales in disrupted markets or seek additional financial support from

the federal government to shore up their balance sheets. Whether such an approach would be sufficient on its own remains an open question, but at a minimum it might present a useful complement to a federal capital-insurance program.

RECEIVERSHIP PROCESS FOR FAILING INSTITUTIONS.

Ultimately, under the system proposed here, *no* financial institution would be too big to fail. Systemically significant institutions might receive automatic capital infusions in times of general financial distress (as just described), but an individual institution would *not* be propped up or bailed out when it was on the verge of failure. Instead, it would be promptly taken over by a federal receiver and either restructured, sold, or liquidated—in much the same way that FDIC takes over (and, in many cases, promptly restructures and reopens) failing banks.

Although non-financial firms enter bankruptcy when they can no longer make good on their debts, the federal bankruptcy system was simply not designed for large, systemically significant financial institutions. As a result, regulators often feel the need to prop up such institutions when they falter to avoid a messy and potentially destructive bankruptcy process. But this cannot be tolerated any longer. Instead, we need a receivership process that works, so regulators don't have to be afraid to let a systemically significant financial institution fail. The FDIC has proved that this can be done for commercial banks, and it is now time to extend the FDIC-receivership model to all systemically significant institutions. No private entity should ever be too big to fail.

★ REGULATION FOR THE LONG TERM

IN DESIGNING THIS NEW SYSTEM, lawmakers need to remember that they are building a regulatory infrastructure for the long term. In general, major financial crises strike rather infrequently—perhaps once in 20 or even 50 years—making it exceedingly difficult for regulators to stay vigilant. And because a systemic regulator would be charged with regulating the most powerful financial institutions in the country, it would be highly vulnerable to falling under their influence—a phenomenon that social scientists call “regulatory capture.”

The best weapon against both complacency and capture is sunlight. This is one of the reasons why Congress should create a new agency, rather than house a systemic regulator in an existing one. Although the Federal Reserve might seem an attractive home, because it has a great deal of financial expertise already, the “Fed” was never designed to be particularly transparent. On the contrary, it has long been thought that an effective central bank requires a substantial degree of insulation from democratic impulses. A successful systemic regulator, by contrast, would need to be far more open and responsive to democratic scrutiny.

The need for sunlight is also the reason why a list of systemically significant institutions (which the regulator would compile) must be public, not private. Such a list would help to ensure not only *public engagement* in the process of systemic regulation, but also *public pressure* if the systemic regulator were to fall down on the job (or fall under the spell of the firms it was regulating). Imagine, for example, the outcry that would ensue if a major financial firm mysteriously disappeared from the list. It is precisely the fear of such unwelcome attention that would help keep regulators on the straight and narrow. Without the discipline of a public list, regu-

latory diligence would invariably weaken over time in the face of unrelenting pressure from the regulated firms.

Some critics contend that a public list of this sort would confer special status on the named firms, *increasing* moral hazard by strengthening the implicit guarantee these firms already enjoy. But it is a fantasy to believe that the government's implicit guarantee of all systemically significant institutions will magically disappear (or even diminish meaningfully) if we simply stop talking about it. After more than a year of massive federal rescues and bailouts of major financial firms, that guarantee is now rock solid.

As past experience has shown, implicit guarantees don't disappear on their own and can't be ignored or denied into oblivion. Nor is it credible to pretend that such institutions would receive no federal support at a moment of crisis. The right approach is to be explicit about which institutions represent a true systemic threat; regulate them effectively on the basis of strong prudential standards; promise a reasonable—but strictly limited—amount of support in times of crisis (through a capital-insurance program); and be clear in advance that they will face an FDIC-style receivership process (rather than ad hoc government bailouts) if they fail. This is the best way to limit moral hazard and, at the same time, avoid regulatory complacency and capture over the long term.

★ RESTORING CALM, AVOIDING CRISES

THE PRESENT FINANCIAL CRISIS should remind us that private financial institutions and markets cannot always be counted upon to manage risk optimally on their own. Almost everyone now recognizes that the government has a critical role to play—as the lender, insurer, and spender of last resort—in times of crisis. But effective public risk management is also needed in normal times to protect consumers and investors and to help prevent financial crises in the first place.

New Deal reforms helped produce nearly a half-century of relative financial calm, without quashing essential financial innovation. Today, the biggest threat to our financial system is posed not by volatile commercial banks (as in 1933), but rather by huge, systemically significant financial institutions (think AIG, Citigroup, Fannie Mae) that have the potential to trigger financial avalanches. And the threat posed by these institutions is only compounded by the unprecedented federal guarantees introduced in response to the current crisis and the pervasive moral hazard they spawn.

The best way to address this threat is by identifying, regulating, and potentially insuring systemically significant financial institutions continuously, *before* crisis strikes. This would mark a major but essential reform to ensure a healthy and productive financial system for the next half-century. ▽

David A. Moss is McLean professor of business administration. He is also the author of *When All Else Fails: Government as the Ultimate Risk Manager*, a broad historical analysis of public risk-management, including strategies for addressing the moral hazard associated with public guarantees and other market interventions. This essay is adapted and updated from “An Ounce of Prevention: The Power of Public Risk Management in Stabilizing the Financial System,” January 2009, a Harvard Business School working paper (available, with supporting footnotes, at www.hbs.edu/research/pdf/09-087pdf). That paper grew out of his work for the TARP Congressional Oversight Panel and a draft report on financial regulatory reform he prepared for the panel. It was also presented at the Tobin Project Conference on Government and Markets at White Oak.

Is the 2007 US Sub-Prime Financial Crisis So Different? An International Historical Comparison

By CARMEN M. REINHART AND KENNETH S. ROGOFF*

The first major financial crisis of the twenty-first century involves esoteric instruments, unaware regulators, and skittish investors. It also follows a well-trodden path laid down by centuries of financial folly. Is the “special” problem of sub-prime mortgages really different?

Our examination of the longer historical record, which is part of a larger effort on currency and debt crises, finds stunning qualitative and quantitative parallels across a number of standard financial crisis indicators. To name a few, the run-up in US equity and housing prices that Graciela L. Kaminsky and Reinhart (1999) find to be the best leading indicators of crisis in countries experiencing large capital inflows closely tracks the average of the previous 18 post-World War II banking crises in industrial countries. So, too, does the inverted v-shape of real growth in the years prior to the crisis. Despite widespread concern about the effects on national debt of the tax cuts of the early 2000s, the run-up in US public debt is actually somewhat below the average of other crisis episodes. In contrast, the pattern of US current account deficits is markedly worse.

At this juncture, the book is still open on how the current dislocations in the United States will play out. The precedent found in the aftermath of other episodes suggests that the strains can be quite severe, depending especially on the initial degree of trauma to the financial system (and to some extent, the policy response). The average drop in (real per capita) output growth is over 2 percent, and it typically takes two years to return to trend. For the five most catastrophic cases (which include episodes in Finland, Japan,

Norway, Spain, and Sweden), the drop in annual output growth from peak to trough is over 5 percent, and growth remained well below pre-crisis trend even after three years. These more catastrophic cases, of course, mark the boundary that policymakers particularly want to avoid.

I. Postwar Bank-Centered Financial Crises: The Data

Our comparisons employ a small piece of a much larger and longer historical dataset we have constructed (see Reinhart and Rogoff 2008.) The extended dataset catalogues banking and financial crises around the entire world dating back to 1800 (in some cases earlier). In order to focus here on data most relevant to the present US situation, we do not consider the plethora of emerging market crises, nor industrialized country financial crises from the Great Depression or the 1800s. Nevertheless, even in the smaller sample considered in this paper, the “this time is different” syndrome has been repeated many times.

First come rationalizations. This time, many analysts argued, the huge run-up in US housing prices was not at all a bubble, but rather justified by financial innovation (including sub-prime mortgages), as well as by the steady inflow of capital from Asia and petroleum exporters. The huge run-up in equity prices was similarly argued to be sustainable thanks to a surge in US productivity growth and a fall in risk that accompanied the “Great Moderation” in macroeconomic volatility. As for the extraordinary string of outsized US current account deficits, which at their peak accounted for more than two-thirds of all the world’s current account surpluses, many analysts argued that these, too, could be justified by new elements of the global economy. Thanks to a combination of a flexible economy and the innovation of the technology boom, the United States could be expected to enjoy superior productivity growth for decades,

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while superior American know-how meant higher returns on physical and financial investment than foreigners could expect in the United States.

Next comes reality. Starting in the summer of 2007, the United States experienced a striking contraction in wealth, increase in risk spreads, and deterioration in credit market functioning. The 2007 United States sub-prime crisis, of course, has its roots in falling US housing prices, which have in turn led to higher default levels, particularly among less creditworthy borrowers. The impact of these defaults on the financial sector has been greatly magnified due to the complex bundling of obligations that was thought to spread risk efficiently. Unfortunately, that innovation also made the resulting instruments extremely nontransparent and illiquid in the face of falling house prices.

As a benchmark for the 2007 US sub-prime crisis, we draw on data from the 18 bank-centered financial crises from the postwar period, as identified by Kaminsky and Reinhart (1999) and Gerard Caprio et. al. (2005). These crisis episodes include:

The "Big Five" Crises: Spain (1977), Norway (1987), Finland (1991), Sweden (1991), and Japan (1992), where the starting year is in parentheses.

Other Banking and Financial Crises: Australia (1989), Canada (1983), Denmark (1987), France (1994), Germany (1977), Greece (1991), Iceland (1985), Italy (1990), New Zealand (1987), United Kingdom (1974, 1991, 1995), and United States (1984).

The Big Five crises are all protracted, large-scale financial crises that are associated with major declines in economic performance for an extended period. Japan (1992), of course, is the start of the "lost decade," although all the others left deep marks as well.

The remaining rich country financial crises represent a broad range of lesser events. The 1984 US crisis, for example, is the savings and loan crisis. In terms of fiscal costs (3.2 percent of GDP), it is just a notch below the Big Five.¹

¹ The fiscal costs of cleaning up after banking crises can be enormous. The fiscal cleanup from Sweden's 1991

Some of the other 13 crises are relatively minor affairs, such as the 1995 Barings (investment) bank crisis in the United Kingdom or the 1994 Credit Lyonnaise bailout in France. Excluding these smaller crises would certainly not weaken our results, as the imbalances in the run-up were minor compared to the larger blowouts.

II. Comparisons

We now proceed to a variety of simple comparisons between the 2007 US crisis and previous episodes. Drawing on the standard literature on financial crises, we look at asset prices, real economic growth, and public debt. We begin in Figure 1 by comparing the run-up in housing prices. Period T represents the year of the onset of the financial crisis. By that convention, period $T-4$ is four years prior to the crisis, and the graph in each case continues to $T+3$, except of course in the case of the US 2007 crisis, which remains in the hands of the fates.² The chart confirms the case study literature, showing the significant run-up in housing prices prior to a financial crisis. Notably, the run-up in housing prices in the United States exceeds that of the Big Five.

Figure 2 looks at real rates of growth in equity market price indices. (For the United States, the index is the S&P 500; Reinhart and Rogoff (2008) provide the complete listing for foreign markets.)

Once again, the United States looks like the archetypal crisis country, only more so. The Big Five crisis countries tended to experience equity price falls earlier on than the United States has, perhaps because the US Federal Reserve pumped in an extraordinary amount of stimulus in the early part of the most recent episode.

Figure 3 looks at the current account as a share of GDP. Again, the United States is on a typical trajectory, with capital inflows accel-

crisis was 6 percent of GDP and Norway's 1987 crisis was 8 percent. Spain's post-1977 cleanup cost over 16 percent of GDP. Estimates for Japan's bill vary widely, with many in excess of 20 percent of GDP.

² For the United States, house prices are measured by the Case-Shiller index, described and provided in Robert Shiller (2005). The remaining house price data were made available by the Bank for International Settlements and are described in Gregory D. Sutton (2002).

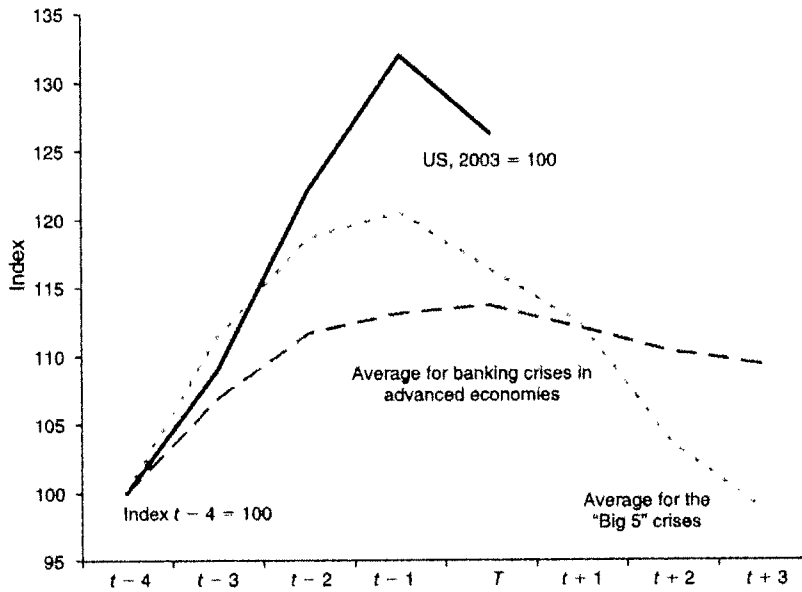


FIGURE 1. REAL HOUSING PRICES AND BANKING CRISES

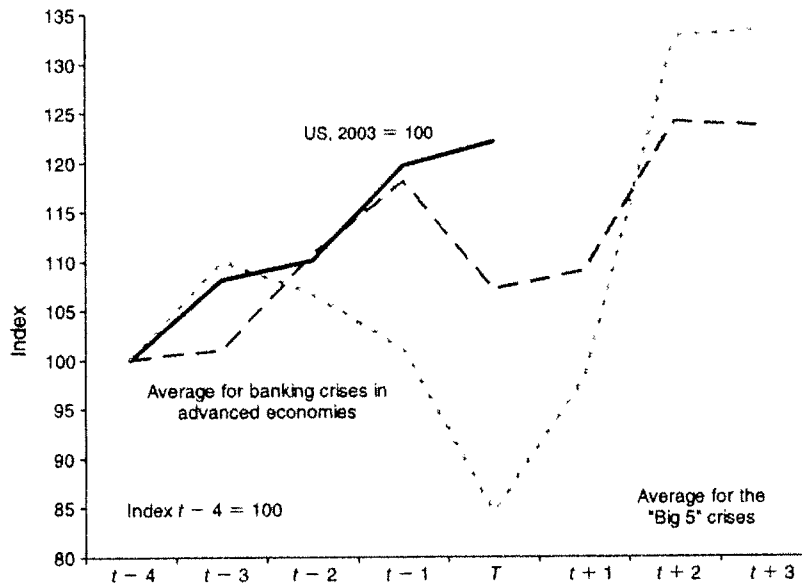


FIGURE 2. REAL EQUITY PRICES AND BANKING CRISES

erating up to the eve of the crisis. Indeed, the US deficits are more severe, reaching over six percent of GDP. As already mentioned, there is a large and growing literature that attempts to rationalize why the United States might be able to run a large sustained current account deficit

without great risk of trauma. Whether the US case is quite as different as this literature suggests remains to be seen.

Real per capita GDP growth in the run-up to debt crises is illustrated in Figure 4. The United States 2007 crisis follows the same inverted V

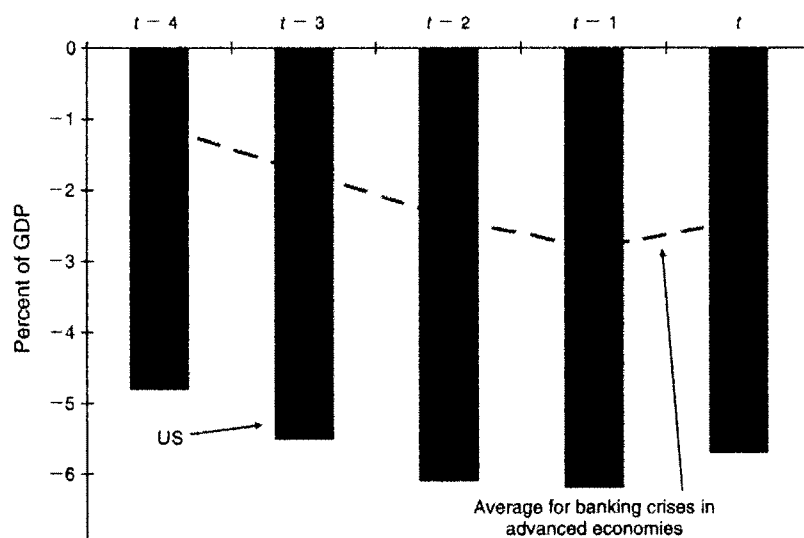


FIGURE 3. CURRENT ACCOUNT BALANCE/GDP ON THE EVE OF BANKING CRISES

shape that characterizes the earlier episodes. Growth momentum falls going into the typical crisis, and remains low for two years after. In the more severe Big Five cases, however, the growth shock is considerably larger and more prolonged than for the average. Of course, this implies that the growth effects are quite a bit less severe in the mildest cases, although the US case has so many markers of larger problems that one cannot take too much comfort in this caveat.

Figure 5 looks at public debt as a share of GDP. Rising public debt is a near universal precursor of other postwar crises, not least the 1984 US crisis. It is notable that US public debt rises much more slowly than it did in the run-up to the Big Five crises. However, if one were to incorporate the huge buildup in private US debt into these measures, the comparisons would be notably less favorable.

The correlations in these graphs are not necessarily causal, but in combination nevertheless suggest that if the United States does not experience a significant and protracted growth slowdown, it should either be considered very lucky or even more “special” than most optimistic theories suggest. Indeed, given the severity of most crisis indicators in the run-up to its 2007 financial crisis, the United States should consider itself quite fortunate if its downturn ends up being a relatively short and mild one.

III. Conclusions

Tolstoy famously begins his classic novel *Anna Karenina* with, “Every happy family is alike, but every unhappy family is unhappy in their own way.” While each financial crisis no doubt is distinct, they also share striking similarities in the run-up of asset prices, in debt accumulation, in growth patterns, and in current account deficits. The majority of historical crises are preceded by financial liberalization, as documented in Kaminsky and Reinhart (1999). While in the case of the United States, there has been no striking *de jure* liberalization, there certainly has been a *de facto* liberalization. New unregulated, or lightly regulated, financial entities have come to play a much larger role in the financial system, undoubtedly enhancing stability against some kinds of shocks, but possibly increasing vulnerabilities against others. Technological progress has plowed ahead, shaving the cost of transacting in financial markets and broadening the menu of instruments.

Perhaps the United States will prove a different kind of happy family. Despite many superficial similarities to a typical crisis country, it may yet suffer a growth lapse comparable only to the mildest cases. Perhaps this time will be different as so many argue. Nevertheless, the quantitative and qualitative parallels in run-ups to earlier postwar industrialized-country financial crises

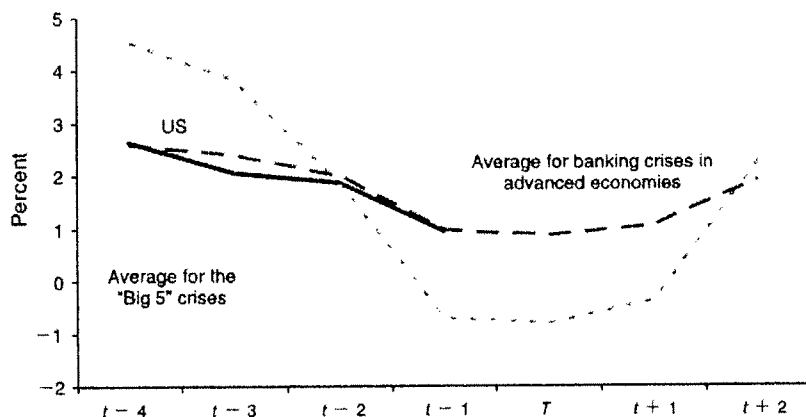


FIGURE 4. REAL GDP GROWTH PER CAPITA AND BANKING CRISES (PPP basis)

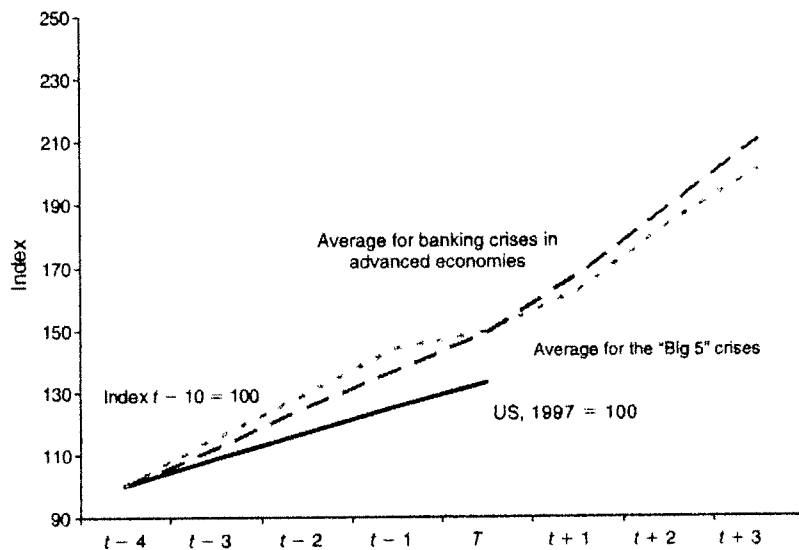


FIGURE 5. PUBLIC DEBT AND BANKING CRISES

are worthy of note. Of course, inflation is lower and better anchored today worldwide, and this may prove an important mitigating factor. The United States does not suffer the handicap of a fixed exchange rate system. On the other hand, the apparent decline in US productivity growth and in housing prices does not provide a particularly favorable backdrop for withstanding a credit contraction.

Another parallel deserves mention. During the 1970s, the US banking system stood as an

intermediary between oil-exporter surpluses and emerging-market borrowers in Latin America and elsewhere. While much praised at the time, 1970s petro-dollar recycling ultimately led to the 1980s debt crisis, which in turn placed enormous strain on money center banks.³ It is

³ See Rudi Dornbusch's concise assessment of the recycling of petrodollars in the third and fourth chapters of Dornbusch (1986).

true that, this time, a large volume of petrodollars are again flowing into the United States, but many emerging markets have been running current account surpluses, lending rather than borrowing. Instead, a large chunk of money has effectively been recycled to a developing economy that exists within US borders. Over a trillion dollars was channeled into the subprime mortgage market, which is comprised of the poorest and least creditworthy borrowers within the United States. The final claimant is different, but in many ways, the mechanism is the same.

Finally, we note that although this paper has concentrated on the United States, many of the same parallels hold for other countries that began experiencing housing price duress during 2007, including Spain, the United Kingdom, and Ireland. There can be similarities across unhappy families, too.

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INTERNATIONAL ASPECTS OF FINANCIAL-MARKET IMPERFECTIONS[†]

The Aftermath of Financial Crises

By CARMEN M. REINHART AND KENNETH S. ROGOFF *

A year ago, we presented a historical analysis comparing the run-up to the 2007 US subprime financial crisis with the antecedents of other banking crises in advanced economies since World War II (Reinhart and Rogoff 2008a). We showed that standard indicators for the United States, such as asset price inflation, rising leverage, large sustained current account deficits, and a slowing trajectory of economic growth, exhibited virtually all the signs of a country on the verge of a financial crisis—indeed, a severe one. In this paper, we engage in a similar comparative historical analysis that is focused on the aftermath of systemic banking crises.

In our earlier analysis, we deliberately excluded emerging market countries from the comparison set, in order not to appear to engage in hyperbole. After all, the United States is a highly sophisticated global financial center. What can advanced economies possibly have in common with emerging markets when it comes to banking crises? In fact, as Reinhart and Rogoff (2008b) demonstrate, the antecedents and aftermath of banking crises in rich countries and emerging markets have a surprising amount in common. There are broadly similar patterns in housing and equity prices, unemployment, government revenues, and debt. Furthermore, the frequency or incidence of crises does not differ much historically, even if comparisons are limited to the post-World

War II period (provided the ongoing late-2000s global financial crisis is taken into account). Thus, this study of the aftermath of severe financial crises includes a number of recent emerging market cases to expand the relevant set of comparators. Also included in the comparisons are two prewar developed country episodes for which we have housing price and other relevant data.

Broadly speaking, financial crises are protracted affairs. More often than not, the aftermath of severe financial crises share three characteristics. *First*, asset market collapses are deep and prolonged. Real housing price declines average 35 percent stretched over six years, while equity price collapses average 55 percent over a downturn of about three and a half years. *Second*, the aftermath of banking crises is associated with profound declines in output and employment. The unemployment rate rises an average of 7 percentage points over the down phase of the cycle, which lasts on average over four years. Output falls (from peak to trough) an average of over 9 percent, although the duration of the downturn, averaging roughly two years, is considerably shorter than for unemployment. *Third*, the real value of government debt tends to explode, rising an average of 86 percent in the major post-World War II episodes. Interestingly, the main cause of debt explosions is not the widely cited costs of bailing out and recapitalizing the banking system. Admittedly, bailout costs are difficult to measure, and there is considerable divergence among estimates from competing studies. But even upper-bound estimates pale next to actual measured rises in public debt. In fact, the big drivers of debt increases are the inevitable collapse in tax revenues that governments suffer in the wake of deep and prolonged output contractions, as well as often ambitious countercyclical fiscal policies in advanced economies aimed at mitigating the downturn.

[†]*Discussants:* Pierre-Olivier Gourinchas, University of California-Berkeley; Andrew Atkeson, University of California-Los Angeles; Joshua Aizenman, University of California-Santa Cruz.

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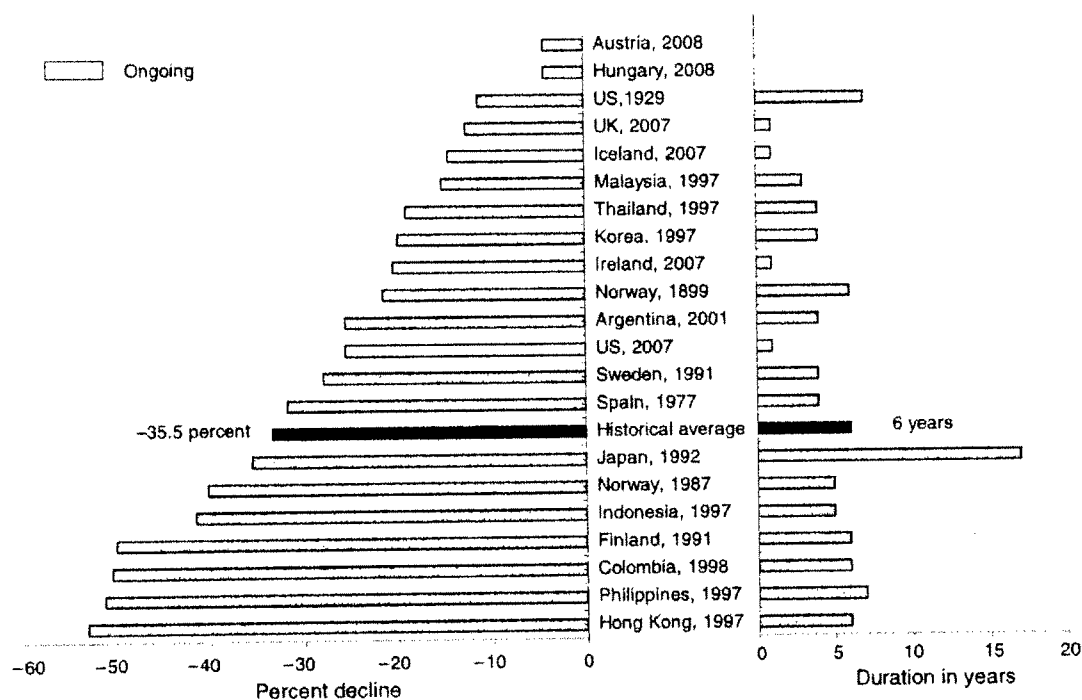


FIGURE 1. PAST AND ONGOING REAL HOUSE PRICE CYCLES AND BANKING CRISES: PEAK-TO-TROUGH PRICE DECLINES (left panel) AND YEARS DURATION OF DOWNTURN (right panel)

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crisis episodes are included, subject to data limitations. The historical average reported does not include ongoing crisis episodes. For the ongoing episodes, the calculations are based on data through the following periods: October 2008, monthly, for Iceland and Ireland; 2007, annually, for Hungary; and 2008:III, quarterly, for all others. Consumer price indices are used to deflate nominal house prices.

Sources: Reinhart and Rogoff (2008b) and sources cited therein.

I. The Historical Comparison Group

Reinhart and Rogoff (2008a) included all the major postwar banking crises in the developed world (a total of 18) and put particular emphasis on the ones dubbed “the big five” (Spain 1977, Norway 1987, Finland 1991, Sweden 1991, and Japan 1992). It is now beyond contention that the present US financial crisis is severe by any metric. As a result, we now focus only on systemic financial crises, including the “big five” developed economy crises plus a number of famous emerging market episodes: the 1997–1998 Asian crisis (Hong Kong, Indonesia, Korea, Malaysia, the Philippines, and Thailand); Colombia 1998; and Argentina 2001. These are cases where we have all or most of the relevant data that allow for thorough comparisons. Central to the analy-

sis is historical housing price data, which can be difficult to obtain and are critical for assessing the present episode.¹ We also include two earlier historical cases for which we have housing prices, Norway in 1899 and the United States in 1929.

II. The Downturn after the Crisis: A Comparison of Depth and Duration

Figure 1 looks at the bust phase in housing price cycles surrounding banking crises,

¹ In Reinhart and Rogoff (2008b), we look at financial crises in 66 countries over 200 years, emphasizing the broad parallels between emerging markets and developed countries, including, for example, the nearly universal run-up in government debt.

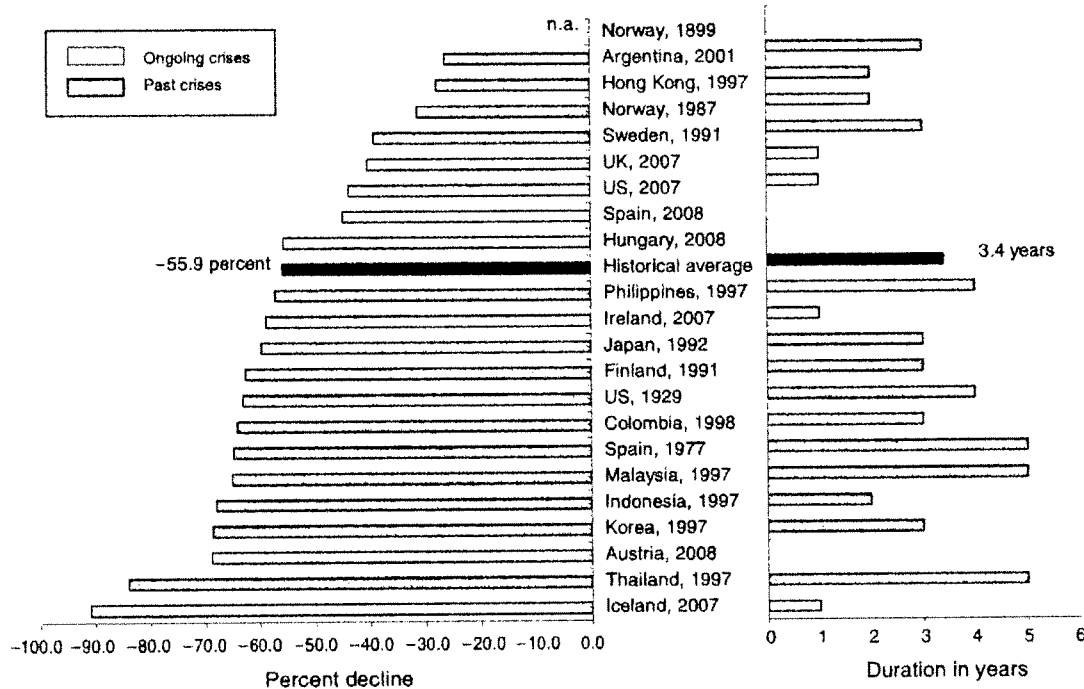


FIGURE 2. PAST AND ONGOING REAL EQUITY PRICE CYCLES AND BANKING CRISES: PEAK-TO-TROUGH PRICE DECLINES (*left panel*) AND YEARS DURATION OF DOWNTURN (*right panel*)

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crisis episodes are included subject to data limitations. The historical average reported does not include ongoing crisis episodes. For the ongoing episodes, the calculations are based on data through December 2, 2008. Consumer price indices are used to deflate nominal equity prices.

Sources: Reinhart and Rogoff (2008b) and sources cited therein.

including the current episode in the United States and a number of other countries now experiencing banking crises: Austria, Hungary, Iceland, Ireland, Spain, and the United Kingdom. Ongoing crises are in light shading; past crises are in dark shading. The cumulative decline in real housing prices from peak to trough averages 35.5 percent.² The most severe real housing price declines were experienced by Finland, the Philippines, Colombia, and Hong Kong. Their crashes were over 50 percent, measured from peak to trough. The housing price decline experienced by the United States to date during the current episode (almost 28 percent according to the Case-Shiller index) is already more

than twice that registered in the US during the Great Depression.

Notably, the duration of housing price declines is quite long-lived, averaging roughly six years. Even excluding the extraordinary experience of Japan (with its 17 consecutive years of price declines), the average remains over five years.

As Figure 2 illustrates, the equity price declines that accompany banking crises are far steeper than are housing price declines, if somewhat shorter lived. The shorter duration of the downturn when compared with real estate prices is consistent with the observation that equity prices are far less inertial. The average historical decline in equity prices is 55.9 percent, with the downturn phase of the cycle lasting 3.4 years. Notably, during the current cycle, Iceland and Austria have already experienced peak-to-trough equity price declines far exceeding the average of the historical comparison group.

² The historical average, which is shaded in black in the diagram, does not include the ongoing crises.

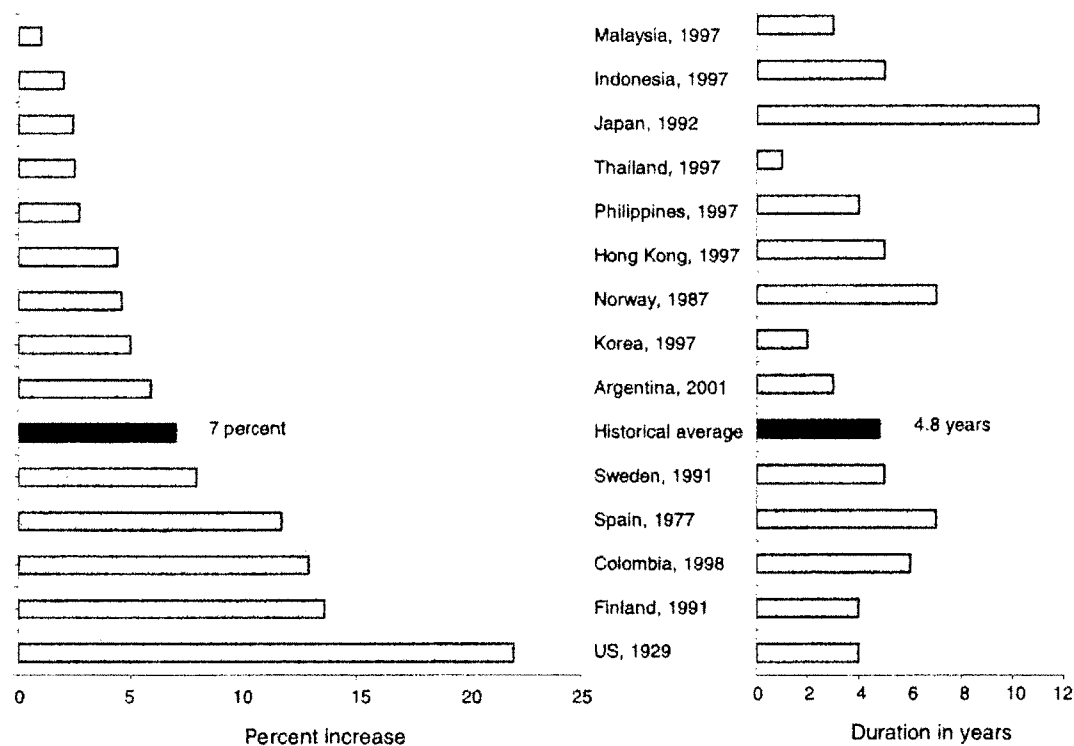


FIGURE 3. PAST UNEMPLOYMENT CYCLES AND BANKING CRISES: TROUGH-TO-PEAK PERCENT INCREASE IN THE UNEMPLOYMENT RATE (*left panel*) AND YEARS DURATION OF DOWNTURN (*right panel*)

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crisis episodes are included, subject to data limitations. The historical average reported does not include ongoing crisis episodes.

Sources: OECD, IMF, Historical Statistics of the United States (HSOUS), various country sources, and authors' calculations.

Figure 3 looks at increases in unemployment rates across the historical comparison group. (As the unemployment rate is classified as a lagging indicator, we do not include the current crisis.) On average, unemployment rises for almost five years, with an increase in the unemployment rate of about 7 percentage points. While none of the postwar episodes rivals the rise in unemployment of over 20 percentage points experienced by the United States during the Great Depression, the employment consequences of financial crises are nevertheless strikingly large in many cases.

It is interesting to note in Figure 3 that when it comes to banking crises, the emerging markets, particularly those in Asia, seem to do better in terms of unemployment than do the advanced

economies. While there are well-known data issues in comparing unemployment rates across countries,³ the relatively poor performance in advanced countries suggests the possibility that greater (downward) wage flexibility in emerging markets may help cushion employment during periods of severe economic distress. The gaps in the social safety net in emerging market economies, when compared to industrial ones, presumably also make workers more anxious to avoid becoming unemployed.

³ Notably, widespread "underemployment" in many emerging markets is not captured in the official unemployment statistics.

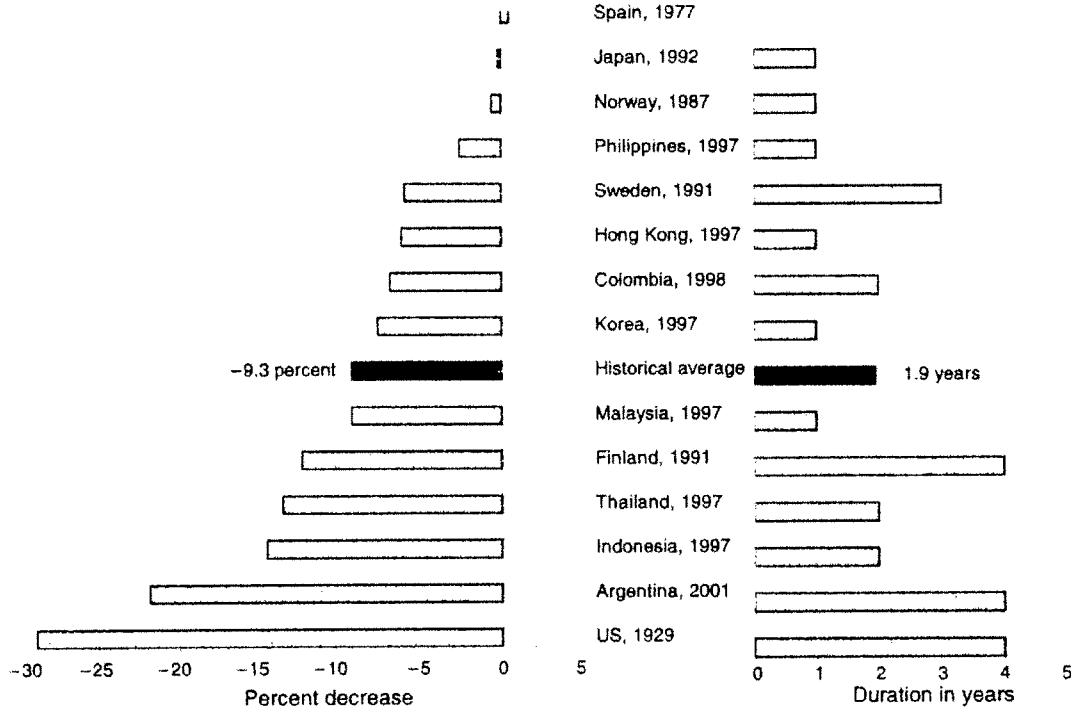


FIGURE 4. PAST REAL PER CAPITA GDP CYCLES AND BANKING CRISES: PEAK-TO-TROUGH DECLINE IN REAL GDP (left panel) AND YEARS DURATION OF DOWNTURN (right panel)

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crisis episodes are included, subject to data limitations. The historical average reported does not include ongoing crisis episodes. Total GDP, in millions of 1990 US\$ (converted at Geary Khamis PPPs) divided by midyear population.

Sources: Total Economy Database (TED), Historical Statistics of the United States (HSOUS), and authors' calculations.

Figure 4 looks at the cycles in real per capita GDP around banking crises. The average magnitude of the decline, at 9.3 percent, is stunning. Admittedly, for the post-World War II period, the declines in real GDP are smaller for advanced economies than for emerging market economies. A probable explanation for the more severe contractions in emerging market economies is that they are prone to abrupt reversals in the availability of foreign credit. When foreign capital comes to a “sudden stop,” to use the phrase coined by Guillermo Calvo, Alejandro Izquierdo, and Rudy Loo-Kung (2006), economic activity heads into a tailspin.⁴

Compared to unemployment, the cycle from peak to trough in GDP is much shorter, only two years. Presumably, this is partly because potential GDP growth is positive, and we are measuring only absolute changes in income, not gaps relative to potential output. Even so, the recessions surrounding financial crises have to be considered unusually long compared to normal recessions that typically last less than a year.⁵ Indeed, multiyear recessions typically occur only in economies that require deep restructuring, such as Britain in the 1970s (prior to Thatcher), Switzerland in the 1990s, and Japan post-1992 (the last due not only to its financial collapse, but also to the need to reorient the economy in light

⁴ When no foreign financing is possible, emerging markets have seen consumption and investment implode during severe financial crises.

⁵ See International Monetary Fund (2002, chap. 3).

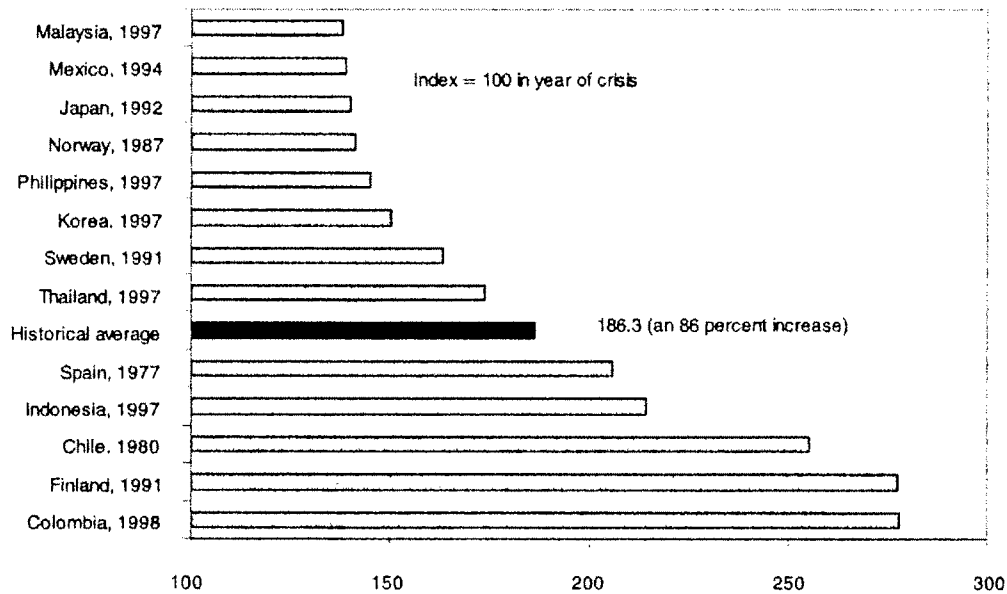


FIGURE 5. CUMULATIVE INCREASE IN REAL PUBLIC DEBT IN THE THREE YEARS FOLLOWING THE BANKING CRISIS

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crisis episodes are included, subject to data limitations. The historical average reported does not include ongoing crisis episodes, which are omitted altogether, as these crises begin in 2007 or later, and debt stock comparison here is with three years after the beginning of the banking crisis.

Sources: Reinhart and Rogoff (2008b) and sources cited therein.

of China's rise). Banking crises, of course, usually require painful restructuring of the financial system, and so are an important example of this general principle.

Figure 5 shows the rise in real government debt in the three years following a banking crisis. The deterioration in government finances is striking, with an average debt rise of over 86 percent. Reinhart and Rogoff (2008b), taking advantage of newly unearthed historical data on domestic debt, show that this same buildup in government debt has been a defining characteristic of the aftermath of banking crises for over a century. We look at percentage increase in debt, rather than debt-to-GDP, because sometimes steep output drops would complicate interpretation of debt-GDP ratios. As Reinhart and Rogoff (2008b) note, the characteristic, huge buildups in government debt are driven mainly by sharp falloffs in tax revenue and, in many cases, big surges in government spending to fight the recession. The much ballyhooed bank bailout costs are, in several cases, only a

relatively minor contributor to post-financial crisis debt burdens.

III. Concluding Remarks

An examination of the aftermath of severe financial crises shows deep and lasting effects on asset prices, output, and employment. Unemployment rises and housing price declines extend out for five and six years, respectively. On the encouraging side, output declines last only two years on average. Even recessions sparked by financial crises do eventually end, albeit almost invariably accompanied by massive increases in government debt.

How relevant are historical benchmarks for assessing the trajectory of the current global financial crisis? On the one hand, the authorities today have arguably more flexible monetary policy frameworks, thanks particularly to a less rigid global exchange rate regime. Some central banks have already shown an aggressiveness to act that was notably absent in the 1930s, or in

the latter-day Japanese experience. On the other hand, one would be wise not to push too far the conceit that we are smarter than our predecessors. A few years back many people would have said that improvements in financial engineering had done much to tame the business cycle and limit the risk of financial contagion.

Since the onset of the current crisis, asset prices have tumbled in the United States and elsewhere along the tracks laid down by historical precedent. The analysis of the post-crisis outcomes in this paper for unemployment, output, and government debt provide sobering benchmark numbers for how the crisis will continue to unfold. Indeed, these historical comparisons were based on episodes that, with the notable exception of the Great Depression in the United States, were individual or regional in nature. The global nature of the crisis will make it far more difficult for many countries to grow their way out through higher exports, or to smooth the consumption effects through foreign borrowing. In such circumstances, the recent lull in sovereign defaults is likely to come to an

end. As Reinhart and Rogoff (2008b) highlight, defaults in emerging market economies tend to rise sharply when many countries are simultaneously experiencing domestic banking crises.

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