

Forefront

New Ideas on Economic Policy from the FEDERAL RESERVE BANK
of CLEVELAND



The Dry, Wonky, and Utterly **Essential** World of Financial Stability Analysis

INSIDE:

The bankruptcy of Detroit

Women, work, and war

Interview with the head of the
new Office of Financial Research

Forefront

New Ideas on Economic Policy from the FEDERAL RESERVE BANK
of CLEVELAND



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PRESIDENT'S MESSAGE

Sandra Pianalto

President and Chief Executive Officer
Federal Reserve Bank of Cleveland



The burgeoning field of financial stability analysis is showing promise as an important resource in identifying threats in the financial system.

One of the first lessons I and my colleagues in the Federal Reserve drew from the financial crisis was that both regulators and financial institutions lacked a clear grasp of the risks that had been building up in the financial system. In the five years since the crisis, I have been advocating a “macroprudential” approach to monitoring the financial system—a way to make sure that threats to financial stability do not go unnoticed. The Dodd–Frank Act of 2010 went a long way toward establishing this approach. It closed many of the gaps that caused regulators to miss signs of systemic risk, and it widened our view of the financial system. There remains, however, plenty of room to improve the ability of both financial market supervisors and financial institutions to identify problems before they grow into a full-blown crisis.

The burgeoning field of financial stability analysis is already showing promise as an important resource in this effort. Economists, mathematicians, cryptographers, and many other experts from different disciplines are developing new models that aim to detect financial market risks sooner than was possible before. They are also creating tools that can help regulators decide whether and how to take corrective action.

Researchers at the Federal Reserve Bank of Cleveland have been at the forefront of financial stability analysis. The Cleveland Financial Stress Index and associated early-warning models are among a new class of tools that financial market regulators are increasingly relying on to spot emerging risks. Our Bank’s expertise in this area led us to partner with the newly created Office of Financial Research earlier this year to sponsor the conference, Financial Stability Analysis: Using the Tools, Finding the Data. The cover story in this issue of *Forefront* provides a tour of the field of financial stability analysis through the voices of participants at the conference. You will hear from economists and computer scientists talking about how their efforts are helping to ensure that the next financial crisis can be prevented before it ever gets started.

Also in this issue is an interview with Richard Berner, the director of the Office of Financial Research, who talked with us after his conference keynote address. I encourage you to visit our website, www.clevelandfed.org/forefront for a video overview of the conference, as well as the speech I delivered on the importance of providing enhanced information about financial firms and clearer expectations for the future actions of financial regulators.

We learned some painful lessons during the financial crisis, but it is heartening that we have made tangible strides in efforts to prevent another one. ■



Still Squeezed: Small Business Lending

Bank lending to small businesses has fallen significantly. Cleveland Fed analysis shows that multiple sources contribute to the decline, and any intervention should take all of them into consideration.

Everybody agrees that small businesses aren't borrowing as much as they did before the recession. Nobody, it seems, agrees why.

Is it:

- A. Less demand by small firms themselves?
- B. Lack of enthusiasm by banks to lend to small businesses of any stripe (but especially those deficient of collateral)?
- C. Lending standards on steroids?
- D. Consolidation in the banking industry?

The answer, a new report from the Cleveland Fed suggests, is **E**: All of the above.

"It's not just demand. It's not just supply. There are multiple issues here," says Ann Marie Wiersch, a policy analyst with the Cleveland Fed who co-authored "Why Small Business Lending Isn't What It Used to Be" with Scott Shane, a Case Western University economist.

In some ways, it's a chicken-and-egg paradox. Small business growth is down since the recession, which translates into muted demand for

loans. But at the same time, growth might be lower because small firms can't get the credit they need to expand.

From the banks' perspective, it's just a fact that lending to small businesses isn't as profitable as lending to large ones. The loan values are smaller, for starters. Also, small business loans tend to be very heterogeneous (one is not like the other) and cannot go through automated approval processes, which are cheaper for the banks to administer. Because of their dissimilarities, small business loans are also difficult to securitize.

Meanwhile, credit standards are stiffer in the wake of the financial crisis, thanks in part to stepped-up scrutiny by supervisors. And a 15-year trend of consolidation in the banking industry has dwindled the number of community banks, which historically have made small business lending their bread and butter. Gone are the days of the loan by handshake with your friendly neighborhood banker.

Small businesses employ roughly half of the private sector labor force. And that's the reason it's so important to carefully identify the real sources of the small business credit crunch—money thrown at the wrong problems won't help small businesses get the credit they need, and the whole economy could suffer right along with them.

For example: It's clear from the data and anecdotal evidence that banks have sufficient capital right now and more than enough cash sitting on the sidelines that could be deployed to activities such as small business lending. So at this moment, policies that aim to strengthen banks' capacity for lending won't help the problem. Instead, perhaps efforts should be aimed at addressing the widely diverse credit needs small businesses, or ways to make these businesses more profitable.

—Forefront Staff

Read more



"Why Small Business Lending Isn't What It Used to Be," by Ann Marie Wiersch and Scott Shane. Federal Reserve Bank of Cleveland, *Economic Commentary*, August 2013.

www.clevelandfed.org/research/commentary/2013/2013-10.cfm

A Little Bit on Bitcoin

It is part of the Fed's job to ensure the safety and security of the US payments system. That's why it was one of an array of financial market regulators that recently met with a trade group representing Bitcoin.

Recently, it was reported that a trade group representing the four-year-old virtual currency Bitcoin met with an array of financial market regulators, including the Federal Reserve. Meetings between financial market participants and regulators are commonplace, but it is safe to say that this particular meeting was one of a kind.

Bitcoin is the first digital currency to successfully simulate cash. And to date, it has bypassed trusted and customary third parties like banks to monitor its transactions.

By way of background, a bitcoin is a basic unit of currency, but it's different from what you're used to in many ways. First, it's a digital currency, no paper or metal here. Second, the supply of coins is limited by design. Third, it's not backed by any of what most consider real value—like gold, silver, or the promise of the government.

It works like this: You buy some bitcoins on any number of websites and immediately become part of the peer-to-peer network. As such, you—and every other Bitcoin member—are responsible for monitoring the Bitcoin economy and effectively replace that trusted third party mentioned earlier. From there, you can exchange, buy, or sell your bitcoins, while the entire transaction

and verification process is carried out collectively by the network between computers. Safeguards such as public and private keys, block chains, and cryptographic “hashes” (which function like fingerprints) work together to make sure your transactions are secure.

There's the rub. Some believe the way Bitcoin works may encourage, or at least may not discourage, illegal or illicit activities such as tax evasion and narcotics trafficking. The Senate's Homeland Security and Government Affairs Committee has already launched a review of how the government regulates virtual currencies such as Bitcoin, and in mid-August sent a letter to several federal agencies, including the Federal Reserve, asking for information on how they oversee virtual currencies. And on August 26, 2013, Bitcoin leaders met with US administration officials—again, including the Fed—to discuss Bitcoin protocol and regulatory concerns.

It is part of the Federal Reserve's job to ensure the safety and security of the US payments system. That is why it attended the informational session with Bitcoin representatives. According to Federal Reserve Vice Chair Janet Yellen, the Federal Reserve has been in communication with banking organizations for many years, trying to understand concerns with online banking mechanisms. And while some believe online banking mechanisms are not regulated, Yellen reassures the public that the United States has regulations that apply to online payment providers. Stay tuned. ■

—Forefront Staff



The Dry, Wonky, and Utterly Essential World of Financial Stability Analysis

Everybody is in favor of financial stability. But a key part of achieving it is first knowing when instability is near, and then what to do about it. The young field of financial stability analysis is setting out to do just that.



Doug Campbell
Editor

In November 2007, the stock market was approaching all-time highs. The unemployment rate stood at a healthy 4.7 percent. And a variety of consumer sentiment measures showed Americans to be in generally decent spirits.

The Cleveland Fed's early warning systemic risk model didn't exist then. If it had, it would have given us a glimpse underneath the shiny facade: lurking financial stress that indicators commonly used at the time didn't flag. We can't know whether policymakers could have used the early warning to thwart the ensuing financial crisis, but we do know that it would at least have put them on notice.

Much as retailers use data and algorithms to predict what their customers will purchase, financial system supervisors today use similar tools to spot the next potential financial crisis. Other tools are designed to help policymakers know what to do when crisis conditions emerge.

On this topic, the Cleveland Fed joined with the newly created Office of Financial Research earlier this year to gather some of the world's top financial stability modelers and data junkies at the 2013 Financial Stability Analysis Conference. And though it may have been "dry" and "wonky," as the *Wall Street Journal* put it, the conference underlined both the importance and the amount of work yet to be done.

The science of financial stability analysis remains imperfect. The data is rife with holes and abnormalities. The models are largely untested in real-life situations. The financial system itself is so large and complex that supervisors are at a fundamental disadvantage. "We have only begun to fill in the gaps to assess and monitor threats to financial stability," said Richard Berner, director of the Treasury Department's Office of Financial Research, at the conference's opening.

The old adage "you can't manage what you can't measure" applies to financial stability supervision. To keep the financial system safe, you need to first know what combinations of conditions are likely to make the system unsafe. Then, the job is to calculate how financial institutions can be nudged back into less-risky behaviors.

Measuring stability: The tools

Today's bank examiners have evolved into financial system supervisors, and they—or at least some of them—must be skilled in modeling techniques that capture the financial system's full array of interconnected activities. They must be able to spot signs of systemic risk and then know what to do, with enough lead time for an effective response.

In the aftermath of the 2008 financial crisis, financial stability analysis tools have become en vogue. They tend to fall into several categories, including stress indexes, early warning systems, asset price/real estate valuation models, and contagion risk models. All of them share the goal of trying to tell us what combinations of economic conditions could lead to systemic risk events—replicating thousands upon thousands of various balance-sheet and income-statement machinations across financial institutions.

A sampling of the indicators used to monitor systemic risk:

- The ratio of household debt to GDP
- Capital adequacy
- Bankruptcy proceedings
- Real estate prices
- Indicators of liquidity (such as liquid assets to total assets)

If that strikes you as awfully complicated, it's because it is. Today's financial stability analysis tools must take into account the interconnectedness of the financial system and associated institutional factors. For example, the extent to which the default of a large bank is going to affect other players depends on the resolution regime in place in any given country. Large and medium-sized financial institutions conduct business with one another in ways that are complex and hard to track. Some models use algorithms capable of pinpointing signs of overheating in different nodes in the network.

The Cleveland approach

Let's take a closer look at one class of tools—early warning models. Of the growing number of early warning models, each has its own methodology and favored data sources. Some focus on measures of credit, others on liquidity. The trick is figuring out which factor or arrangement of factors is most likely to trigger a crisis, because the policy response must fit the problem or risk creating an even bigger problem.

To keep the financial system safe, you need to first know what combinations of conditions are likely to make the system unsafe. Then, the job is to calculate how financial institutions can be nudged back into less-risky behaviors.

The Cleveland Fed's early warning model (dubbed Systemic Assessment of the Financial Environment, or SAFE) has a couple of unique features. For one, it combines confidential information gleaned from regular bank examinations with publicly available data on asset prices. Additionally, it looks for structural weaknesses in the system that might make it particularly vulnerable to shocks. In this context, weaknesses are certain macroeconomic variables—asset quality, for example—that have veered from their historical norms.

Another unique feature is how the model defines “stress.” Typically, if looked at in one particular timeframe, SAFE considers stress in two time periods—short term and long term. That way, policymakers have the information to respond immediately to imbalances that are known to create problems relatively quickly. And they can look even further ahead at the potential implications of imbalances known to generate stress over a longer period (such as 18 months) and respond accordingly.

Another way to approach it

The flip side to paying attention, like the Cleveland Fed does, to potential shocks that may trigger stress is paying attention to underlying vulnerabilities in the financial system. Shocks are called shocks for a reason—they're surprising. Financial system vulnerabilities, on the other hand, are easier to spot.

I believe we would all agree that the recent financial crisis developed, in large part, due to both a lack of information transparency, and a lack of regulatory transparency. By ‘information transparency,’ I mean transparency of information about individual firms and the financial system. By ‘regulatory transparency,’ I mean transparency related to the actions of regulators. Regulators play an important role in promoting both information and regulatory transparency. Information transparency should reveal the risks in financial firms and markets, and regulatory transparency should communicate how supervisors will respond to situations that threaten the financial system.

—Federal Reserve Bank of Cleveland President Sandra Pianalto,
speaking at the May 2013 Financial Stability Analysis Conference

Nellie Liang, director of the Office of Financial Stability Research at the Federal Reserve, explains the two approaches as the difference between assessing the likelihood of a shock and the consequences of a shock. “Less time is spent on debating whether or not there is an asset bubble, and more time is spent on the consequences of what would happen if it were a bubble and it were to burst,” Liang says.

Tools to use

Beyond anticipating or tracking systemic risk, there is a class of financial stability analysis tools that were designed for the express purpose of suggesting some ways for supervisors to calm the landscape once risk is detected. These tools recommend certain corrective actions to pop bubbles that have emerged in places of financial excess.

These tools are called “macroprudential” because they apply to the entire financial system, not just individual firms. And they should be thought of as distinct from the blunt interest rate adjustments of monetary policy. The actions they prescribe might be as simple as raising the floor on down payments as a means of cooling the housing market. Or they could suggest something a bit more complicated, such as taxing a financial firm’s short-term borrowing.

A pair of Purdue University researchers, for example, has studied how risk propagates within the financial system, in order to determine the best strategies for controlling it. They suggest providing certain kinds of loans to different institutions as a means of maximizing the welfare of the entire network.

Another option: A firm exceeding certain numerical thresholds might be forced to pay a tax on certain kinds of assets—a way for supervisors to change behaviors and incentivize firms to move into less-risky asset classes. Or perhaps capital positions would have to go up or down depending on a firm’s exposures.

The tradeoff is that while early intervention may well stave off a crisis (or not), it is almost certain to come with some costs to the financial system. First, there is the straightforward resource burden of complying with regulations. Following that, it’s important to establish which level of necessary compliance is the most efficient. The difference between a 14 percent capital buffer and a 15 percent buffer may seem inconsequential, when in fact it could mean billions of dollars lost or gained.

For example, a pension fund may react differently to financial stress than an insurance firm, so policies aimed at curbing stress may have unintended consequences on certain institutions. A policy aimed at tamping down instability may catch one set of firms in the midst of contraction but another in the midst of expansion. That's why it's important to get financial stability analysis right—the potential impact is powerful and far-reaching.

“The Holy Grail for me would be some ability to explain this information with a better understanding of the behavior of economic agents,” says Mikhail Oet, an economist at the Cleveland Fed who helped design its early warning model. “That would go a long way toward improving our ability to make meaningful interpretations of what we observe and make thoughtful contributions to potential policies for mitigating some of the adverse conditions.”

This cost–benefit tradeoff is especially true in emerging-market countries. The World Bank is particularly wary of financial stress models that rely on rigid measures of credit that underestimate the role of financial development. The amount of indebtedness a developing country is likely to have—and, truly, to need—as it grows is going to be higher than that of a more developed nation. Risk adversity should only go so far, in this case, in an attempt to balance financial stability and financial development. “Development has to happen,” says Martin Melecky, an economist with the World Bank. “So how do we prevent a financial crisis on the one hand but also enable enough risk-taking in the private sector to support development? Because not all risk-taking is bad, especially if it's well managed and taken in pursuit of development opportunities.”

Moreover, one size most definitely does not fit all when it comes to financial stability tools. The International Monetary Fund (IMF), in a survey of tools, concluded that the best approach was to use multiple tools. This way, supervisors could cast a wider net to better differentiate among exposures. In addition, the IMF paper emphasized the importance of using tools that incorporate the impact of policy actions on market conditions and behaviors. Really good models will have to somehow incorporate how policy changes or new regulatory regimes will affect behaviors.

It must be said that macroprudential tools have their detractors. The University of Chicago economist John Cochrane wrote in the *Wall Street Journal* that such tactics are “active, discretionary micromanagement of the whole financial system... The US experienced a financial crisis just a few years ago. Doesn't the country need the Fed to stop another one? Yes, but not this way,” Cochrane wrote.

While early intervention may well stave off a crisis (or not), it is almost certain to come with some costs to the financial system.

Measuring stability: The data

The tools that supervisors use to monitor the financial system are only as good as the data that populate those tools. And the data, in many cases, is in less than perfect shape. Although much of it is out there in one form or another, most is proprietary and not always accessible to all parties in comparable forms.

“Financial data is really in a terrible state,” says Allan Mendelowitz, a Deloitte Consulting executive and former chief of the Federal Housing Finance Agency. Mendelowitz was among those whose advocacy led to the creation of the Office of Financial Research, part of whose mission is to bring order to the current chaos of financial data.

A mish-mash

Data that can't be standardized can't very well be aggregated. Data that can't be aggregated is of little use to early warning models. That is why good data can obviously help supervisors get more out of their models, both within their own agencies and across them.

Data that is clear and accessible carries the added virtue of helping private-sector players understand just how much risk is out there. If the risk becomes more clear-cut with better data, then market participants are more likely to discipline themselves or others for taking on too much risk. That was a problem in the run-up to the financial crisis; firms entered into bets that in reality were far riskier than the existing data had led them to believe.

Efforts are being made on two fronts—on one, improvements are being made to existing data, and on the other, a whole new set of data that captures granular transactions and positions is being produced.

A cough may be harmless, or it may spread into an epidemic. Similarly, the failure of a regional bank may be an isolated incident, or only the first domino to fall.

Accessibility

The data needs to be not only high quality, but also be accessible to every financial market regulator, and (as appropriate) to the public. The ideal would be regular reporting of granular transaction and position data, which would give supervisors a continuous view of both the stock and flow of financial market operations.

Among the initiatives of the Office of Financial Research is to establish a global “legal entity identifier” that would make it easier to track parties to financial transactions instantly. It’s described as a unique, alphanumeric figure for each financial entity in the world. Somewhere down the road, it may even encompass individual financial instruments, not just the entities themselves. More immediately, efforts are underway to establish “mortgage identifiers” to keep tabs on these financial instruments as they get sliced and diced and scattered throughout the financial system.

Had a legal entity identifier existed in 2008, for example, it would have been much more possible for supervisors and risk managers to quickly assess the extent of counterparty exposures to Lehman Brothers. Indeed, new troves of data are available from the shadow banking sector, which had been lightly overseen before the crisis.

The global nature of data standards is increasingly important. Though the central bank of, say, Canada, may have ample information about exposures between Canadian banks and some international banks, it may have much less information about exposures within the broader set of international banks. To have a comprehensive view of the potential for contagion and systemic risk, that kind of data is absolutely vital. One cannot even know how to begin modeling the possible exposures without a decent picture of the actual ones.

Beyond possibly making systemic risk analysis easier, standardized data might also somewhat relieve the burden of regulatory compliance for many firms. Streamlined reporting requirements could make regulatory reporting cheaper, improve transparency for investors, and provide new opportunities in the technology sector.

Too much already?

Some turn the problem on its head—that there is already too much data. Perhaps “better data” is a worthy goal, but right now the data available is overwhelmingly vast. The challenge, as Harry Mamaysky of Citigroup puts it, is “how to look at a small enough subset of the data so that you can actually understand what you’re looking at but that still captures enough of the big picture.”

At best, data limitations make early warning models and financial stress indexes less accurate than they could be. At worst, the data that populates them poisons their results. If the data is standardized, accurate, and accessible, then it’s up to the modelers to figure out how to use it.

It takes a village

One lesson from the financial crisis was that each financial regulatory agency tends to be dominated by a single discipline. The US Securities and Exchange Commission’s enforcement area uses mainly attorneys. Banking supervisory agencies naturally employ bank examiners. At the Federal Reserve, macroeconomists often prevail. To avoid blind spots in the future, all these viewpoints will need to be incorporated.

Consider the presenters at the 2013 conference, Financial Stability Analysis, which included economists, accountants, lawyers, mathematicians, cryptographers, computer scientists, bankers, and an array of central bank regulators. They resembled the sort of crew that central casting would think up for a crowd of disparate wonks, but the mixing it up was done on purpose.

Society can benefit from early warning models, but only if they work. And to make them work, institutions must fork over their private information. Many institutions will look for opportunities to take a free ride on others’ disclosed information while attempting to withhold their own. This kind of self-monitoring could reduce the quality of the data being plugged into models.

How might private data become public? Let's say that in submitting information about their activities, 10 percent of banks provide information about a certain kind of transaction they're involved in. To the other 90 percent of banks, this might be news—a transaction they may not have conducted, or one that they hadn't realized had become so ubiquitous. For the 10 percent of banks that disclosed the information, business might suffer from that kind of disclosure.

Enter cryptographers, epidemiologists

Cryptographer Adam Smith of Pennsylvania State University illustrates the importance of a multidisciplinary approach to sharing the right—and the right amount of—data. One problem with making data accessible is ensuring that it isn't too accessible. Trade secrets should be kept secret. But efforts to aggregate data invariably encounter instances when confidential data could be released inadvertently.

“Cryptography and some related fields have been thinking a lot about data-sharing problems for many years,” Smith says. “They've developed some very powerful and counter-intuitive tools. These tools have the potential to really change the ways regulators think of tradeoffs between transparency and confidentiality.”

Another discipline that surprisingly has been brought into the financial stability analysis mix is epidemiology, the branch of medicine that studies the causes, distribution, and control of disease in populations. Some try using the modeling techniques developed to understand how diseases are transmitted to predict whether certain shocks will cause wider crises.

A cough may be harmless, or it may spread into an epidemic. Similarly, the failure of a regional bank may be an isolated incident, or only the first domino to fall. Supervisors must be able to forecast with some reliability the amount of contagion that the failure of one or more institutions will have on the financial network.

Never finished

As monitoring improves, it becomes possible that the activities of financial institutions will change in ways that aren't currently built into modeling assumptions. That is, a shift in the structure of the market will change the strategic considerations of market participants.

“None of these tools are ever going to be static, or can be static,” says Stephen Ong, vice president in the Supervision, Credit, and Statistics Department of the Cleveland Fed. “To the extent that the financial system continues to evolve and always will, our financial stability monitoring tools will also need to evolve.”

Moreover, this is an effort with no end. Financial innovation and risk-taking is more than a way of life—it's a crucial factor in driving economic growth. The next crisis may rear its head in ways that current models haven't even considered possible. Even as disciplined reviews of methodological contributions are valuable, so is the imaginative, if subjective, work of considering possibilities that aren't in the models right now.

Before the crisis, financial stability analysis was most likely to be practiced only episodically, if at all, in the official and private sectors. But the need for some benchmark measures of stress and some recommended policy responses has since grown acute. Today, stress indexes, early warning systems, and macroprudential policy tools are abundant, and the need is to accurately evaluate which tools are best in which situations, and how to improve them with better data.

“We are definitely making progress in this,” says the Cleveland Fed's Joe Haubrich. “But in some sense, the big question is, are we going to have a quiet period like we had after 1933?”

“We didn't have banking crises for 75 years or so. Will we be able to keep things quiet for that long? I certainly hope so, but at this point it's too early to tell.” ■

Watch video clips



Find out the 10 things everybody should know about financial stability analysis at www.clevelandfed.org/forefront

Find video coverage of the 2013 Financial Stability Analysis conference, and the texts of all papers presented there, at www.clevelandfed.org/events/2013/financial_stability



Read more

Find more information about SAFE at www.clevelandfed.org/forefront/2010/04/ff_20100401_6.cfm

Also check out the Cleveland Financial Stress Index, a tool for monitoring financial stability at www.clevelandfed.org/research/data/financial_stress_index/



Women, Work, and the War That Changed Both

Poster art from WWII contributed to a shift in attitudes about women in the labor force and foretold permanent changes in our society.

In 1942, on the front edge of World War II, the US government launched an emotional advertising campaign to encourage all Americans to contribute to the war effort. As debt piled up to build factories, buy materials, and support soldiers, the newly created US Office of War Information began its call to action. Colorful poster art urged citizens to buy war bonds, conserve resources, and join the military.

A new exhibit at the Cleveland Fed, *Propaganda and Patriotism: The Art of Financing America's Wars*, shares the powerful stories and images of America's war bonds and American citizens' role in supporting the war effort.

But what started out as a propaganda campaign soon foretold permanent changes in our society. As 10 million men vacated factory, shipyard, and steel jobs to fight, and as US factories were racing to match the Axis powers' stockpiles of war material, women were left to fill the gap. This need to fill temporary labor shortages provided the foundation for a key demographic shift in our nation's labor force that still has implications today.

From 1940 to 1945, the share of women in the US workforce increased from 27 percent to nearly 37 percent. By 1945, nearly one out of every four married women was working outside the home, many of them making battleships and bombers, parachutes and ammunition. But when the war ended, so did the massive need for women in the workforce. Military men had been promised they would have their jobs back when they returned home, and, accordingly, when they returned, women were unceremoniously laid off.

Some women went back to their domestic duties, but things had clearly changed. Poster images of women in the workplace contributed to a shift in attitudes—a working woman no longer seemed odd; it was the norm, even patriotic.





Meanwhile, as views changed, a great technological revolution further propelled women into the labor force. A byproduct of the war effort, a rise in the technology of household durables like washing machines and vacuums, drastically reduced the time it took women to keep up their households. With labor-intensive chores like laundry now automated, and with the gradually falling price of the technology, it was much more realistic for women to participate in the labor force.

With the nation's more modern view of women's roles and with women's freedom from manual chores, women's participation in the labor force grew substantially. Since the late 1940s, the rate of female labor force participation has been increasing—from about 32 percent then to about 58 percent in 2011. In fact, this trend has often been cited as one of the most important in US labor markets. The larger the labor force, the larger an economy's productive capacity. Not only are there more goods and services, but there are more people with paychecks to buy those goods and services—a virtuous circle of economic growth.

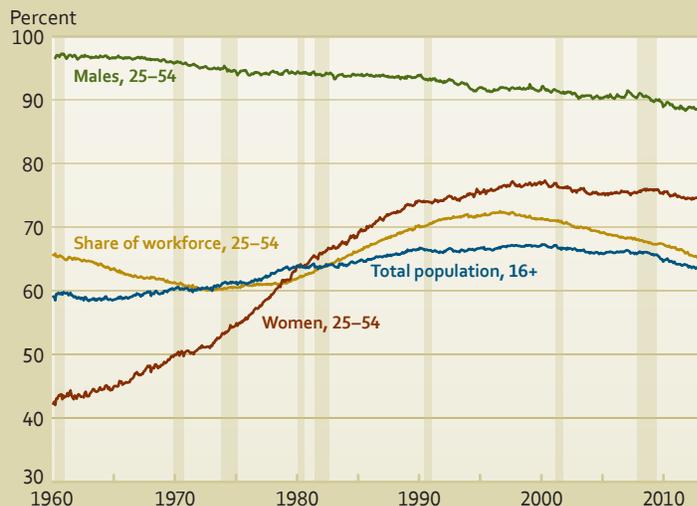
In the 1970s, the male participation rate, which had always been on an upward track, began to decline slightly. Yet the rapid increase in women's participation more than offset this decline; in fact, the whole rate rose. A similar situation is happening today. Women with children now make up a much larger share of the workforce than they did 30 years ago, and a larger share of women are working full time and year-round. And as in the '70s, the trend in men's labor force participation has again been declining.

The modern job market requires high skills and education levels. Women's higher educational attainment helps explain their continued strong presence in the labor force. Among women ages 25 to 64 who are in the labor force, the proportion with a college degree roughly tripled from 1970 to 2011. Higher education means higher employability.

Women have come a long way since Rosie the Riveter (below), the poster girl who represented the millions of American women who joined the workforce during World War II. By making women's role in the workforce seem natural, war poster art did America's economy a favor. ■



Women's participation in the labor force has grown substantially



Note: Shaded bars indicate recessions.
Sources: Bureau of Labor Statistics; authors' calculations.

Experience the exhibit



Visit the *Propoganda and Patriotism* exhibit at the Cleveland Fed or online at www.clevelandfed.org/learning_center/exhibits/war_bonds



Read more

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(Sort of) new funding for distressed neighborhoods



Ericka Thoms
Policy Analyst

In October 2008, with the US financial system on the verge of collapse, then-President Bush signed the Emergency Economic Stabilization Act. Since then, a debate has lingered over how to use a portion of those funds. This summer, the Treasury Department weighed in, at least for two states.

Here is the story: To many Americans, the Act was synonymous with “bailout.” Among other measures, it established the Troubled Asset Relief Program. TARP, as it became known, gave the Treasury authority to purchase up to \$700 billion in troubled financial instruments, including residential and commercial mortgages as well as securities and debt obligations. The program was intended to steady the wobbling banking system.

TARP itself contains many components. In 2010, President Obama created the Hardest Hit Fund (HHF) as a set-aside for states to use for their foreclosure prevention efforts. Eighteen states and the District of Columbia split \$7.6 billion, based on a formula determined by declines in their housing values and by their unemployment levels. As part of the program, Ohio received \$570.4 million. As of September 2013, \$270 million of that remains unused. Cue the debate.

With the thousands of vacant homes left by the financial crisis, the debate between demolition and rehabilitation has been active. Funds left in the Hardest Hit Fund (a part of the Troubled Asset Relief Program, or TARP) are a big source of the discussion.

With the thousands of homes left vacant by the financial crisis, the debate between demolition and rehabilitation has been active, and with it, the debate over what to do with those remaining HHF dollars has re-emerged.

Demolition or rehabilitation?

Ohio has more than 100,000 vacant houses. The financial crisis left many homeowners with properties they could no longer afford to maintain, leaving them to fall prey to vandals and the damages of time. In many cases, those consequences spread to the broader neighborhood: Fewer people moved in, property values declined, and the blight discouraged existing homeowners from making further investments in their own properties, not knowing when or even if the neighborhood would rebound.

Approaches to dealing with the issue of neighborhood blight generally fall between two camps—rehabilitation and demolition. Few would argue for an either-or approach; some homes can be returned to their former worth, while other structures are no longer salvageable. Arguments for rehabilitation often focus on the historic value of some buildings and the potential negative impact on neighborhoods with two, three, or perhaps more, empty lots on a block.



Those more open to the use of demolition say that the demand for homes in blighted areas is low and that empty lots offer opportunities for new construction, urban gardening, or other uses. They also believe it will cut down on crime since vandals have less opportunity to strip houses of pipes and other valuables. Research by the Federal Reserve Bank of Cleveland supports the use of demolition as a neighborhood stabilization tool, in certain cases. The Bank's studies found that property values in many older, industrial communities are primarily determined by the land underneath the structures. In such instances, the best policy to stabilize neighborhoods may be demolition, since it's not the house itself that has value.

Growing support for demolition

Congress established the HHF specifically to help struggling homeowners. At the time, the record number of foreclosures threatened to worsen the economy and potentially drive the country into a depression. Helping homeowners with loan modifications or other assistance allowed residents to stay in their homes and prevented the impact of abandoned housing on neighborhoods. That's why the proposal to use the HHF to pay for demolition had an added level of complexity beyond the underlying debate between rehabilitation versus demolition.

Ohio's congressional delegation has largely supported using HHF dollars for demolition of blighted properties. Well over half of the delegation is on record as in favor of reallocating at least a portion of Ohio's HHF resources to demolition. Two bills were introduced, one in the House and one in the Senate, that directed the Treasury to include demolition costs among the approved activities under HHF. Other bills sought to raise demolition funds through bonds. Members of the Ohio General Assembly also weighed in to support expanding the uses of the HHF.

Some housing advocates questioned using HHF dollars for demolition. Why, they asked, would officials divert funding from a program that helped thousands of Ohioans resolve their financing problems? Opponents also pointed out that separate funds exist for demolition in the Ohio Attorney General's \$75 million demolition fund. But with assurances that only part of the remaining money will be used for demolition and the rest will still help homeowners facing foreclosure, they have dropped their opposition.

So where do we stand? After approving a similar request from Michigan, the Treasury approved Ohio's proposal to use \$60 million of its HHF allotment to raze blighted houses in August 2013. The Ohio Housing Finance Authority says the money will go to as many 16 counties across the state. Questions remain about how workable the program will be in some regions due to TARP program constraints, but it's certainly possible that Congress will ultimately lift restrictions on TARP so the funds can more easily be used for demolition. ■



Read more

Find some of the Cleveland Fed's research on the value of land versus structures in older, industrial communities at www.clevelandfed.org/research/Commentary/2007/07.pdf

For more on Ohio's foreclosure prevention efforts, visit the Ohio Housing Finance Agency's Save the Dream Ohio site at www.ohiohome.org/savethedream/default.aspx

What's at Stake in the Detroit Bankruptcy?



Forefront talks to the Cleveland Fed's Thomas Fitzpatrick IV, economist, about the implications of Detroit's bankruptcy filing.

Forefront: *The Detroit bankruptcy has captured nationwide attention. But why is staff at the Federal Reserve looking at it? This seems like an area outside of the central bank's traditional purview.*

Fitzpatrick: It is. After the financial crisis, the Federal Reserve System established financial monitoring teams to keep an eye on areas that might be sources of systemic risk. One of those areas is municipal finance.

If municipalities stopped paying their debts, there could be ripple effects that spread through bond insurers or the banking system. Here's how: Bond insurers may come under stress from taking over payments for the municipalities, leading to downgrades of other bonds they insure. About \$7 billion of Detroit's debt is insured, and the list of companies insuring

The city of Detroit filed for bankruptcy on July 18, 2013. Burdened with more than \$18 billion in debt and \$3.5 billion in unfunded pension obligations, Detroit became the largest American city to seek bankruptcy protection. The Federal Reserve is among those closely watching how courts address the situation.

To learn more about the issue, *Forefront* talked to Thomas Fitzpatrick IV, an economist at the Cleveland Fed who is a member of a special team examining the condition of municipal finances.

municipal debt is pretty small. When viewed in context of coinciding municipal bankruptcies, there is enough insured debt to raise the question whether insurers could cover all current and future losses. The banking system could be another transmission channel. The banking system might be vulnerable if distressed municipalities ceased making loan or bond payments. While the municipal debt market is small relative to the banking system, it is not necessarily evenly distributed: Some banks may have large exposures to specific states or municipalities.

Forefront: *Detroit is, of course, not alone in facing fiscal distress. What financial conditions are common among other cities facing bankruptcy?*

Fitzpatrick: Many factors come into play. Most of the time, a handful of episodes are to blame—a project that went south and became very expensive (like the sewer project in Jefferson County, Alabama) or a bad investment (like the derivatives purchased by Orange County, California). And of course, the recession amplified everything by reducing tax receipts and funding levels for public pensions. In Detroit, the problem is a bit more structural, as the city has lost so much population, and with it, tax base.

One issue that is common to nearly all of these bankruptcies is growing public pension and healthcare obligations. Consider some of the states where cities have declared bankruptcy. In California (Stockton, San Bernardino) and Michigan (Detroit), state law strongly protects public pension benefits (private pensions are governed by a completely different set of rules). That means that these benefits cannot be reduced by the city or town, even when they grow to an unaffordable level, unless pensioners agree to the reductions, which almost never happens.

Forefront: *Given that pensions are a large part of the problem, have courts ever allowed public pension benefits to be modified in municipal bankruptcies?*

Fitzpatrick: Most states have strong pension protections, so in most cases courts might be the only way to modify benefits without pensioner consent. However, while courts have approved modifications to benefits when the city and pensioners have agreed to them, they have never forced a modification without those agreements. The most recent example happened in Central Falls, Rhode Island. In July 2011, Rhode Island passed a law that required the state's municipalities to make



payments on their general obligation bonds, and put a lien on the city's taxes so that the tax revenue would go to the city's bondholders in the event of a bankruptcy.

Shortly thereafter, Central Falls filed for bankruptcy. The purpose of the law was to change the negotiating posture of Central Falls and its pensioners in bankruptcy. Its practical effect was to grant general obligation bondholders the right to be paid before pensioners in bankruptcy. The pensioners would be paid as unsecured creditors and would have the right to payments that remained only after all the secured creditors were paid. As a result, the city and pensioners settled, agreeing to steep cuts in pension benefits (estimating that their benefits would be even lower otherwise), and the bankruptcy court approved that plan.

Forefront: *So the courts won't modify pension benefits without approval from pensioners?*

Fitzpatrick: It's true that courts have never modified pension obligations without the agreement of pensioners. But it is definitely on the table now. This is an issue being litigated in California bankruptcies and that will be litigated in the Detroit bankruptcy. There are other questions that will be litigated in these jurisdictions if the courts decide that pensions can be modified — such as their priority relative to other creditors.

Forefront: *Not that we want to stray into hypothetical territory, but what would be the implications if, for example, Detroit were allowed to modify pension benefits without employee approval?*

Fitzpatrick: You would likely see pensioners in states with strong protections be less likely to hold out when their municipal employer is under stress. That's really the purpose

of municipal bankruptcy: to solve the holdout problem that arises when all of your creditors except one (or a handful) agree to take partial cuts to what they are owed in order to make the situation work for everyone. In Detroit, it means that you would see all creditors (pensioners, bondholders, etc.) take some pretty big haircuts on what they are owed. How big depends on how their debts are treated. In the case of pension benefits, this means that the court will also have to decide if the special protection public pensions are offered under state law changes the way those debts are treated in bankruptcy. To oversimplify, if the court decides public pension benefits can be modified, it will then have to decide how they can be modified.

Forefront: *Alternatively, what if the city isn't allowed to modify benefits without employee approval?*

Fitzpatrick: If the court decides that they cannot be modified, it means that at least \$3.5 billion of Detroit's total debt has to be paid in full according to the original terms. That means there will be less left for all the other creditors. It is worth noting that only the public pension benefits are protected by the state constitution, and not the health benefits that are also owed to pensioners (and sum to about \$6 billion of Detroit's debt).

Forefront: *It would have been nice if cities hadn't gotten themselves into this situation in the first place. In the future, what sort of incentives might be useful to put in place so that municipalities more appropriately fund and structure their pension plans?*

Fitzpatrick: Generally there are three areas of potential focus: funding, investing, and benefit adjustments. Most states that protect public pension benefits do not have a law requiring that the pensions be funded in a way that ensures sufficient funds will be there to pay the benefits when they

One issue that is common to nearly all of these bankruptcies is growing public pension and healthcare obligations.

are due. When they do have laws that seem to require funding, courts can be reluctant to enforce them. Most state laws also allow actuarial assumptions about expected rates of return that may not reflect market rates. Creating credible funding mechanisms could help solve this problem in the future.

Similarly, in the past, courts have been reluctant to enforce laws requiring that funds for public pensions be invested prudently. Sometimes investment cases can be very difficult to decide, because the line between prudent and imprudent investments is not always clear. Other times it is a bit more obvious. Federal pensions solve this problem by investing only in US Treasuries. Such a strategy would increase the required annual funding of public pensions, but would also largely immunize them against large market fluctuations.

Finally, when large market fluctuations do occur or when public employers are financially stressed, there has to be some way to modify public pension benefits that have been earned. After all, promises to pay can be enforced only if the promisor has the money to pay. ■

Read more



"Public Pensions Under Stress," by John Carlson. Federal Reserve Bank of Cleveland, *Forefront*, Spring 2012.
www.clevelandfed.org/forefront/2012/winter/ff_2012_winter_o8.cfm



Interview with Richard Berner

Of all the policymaking holes revealed by the financial crisis, few were as glaring as the dearth of reliable data on the health of the financial system. In response, Congress authorized creation of the Office of Financial Research (OFR), a unit of the Treasury Department. Its job is to find ways to improve the quality of financial data and to help policymakers perform more sophisticated analyses of the financial system as glaring as the dearth of reliable data on the health of the financial system.

The Senate confirmed Richard Berner as the OFR's first director in January 2013. He comes to the job honestly,

with a career steeped in financial stability and economic analysis, beginning with the Federal Reserve Board and including stops at a forecasting firm and Wall Street investment banks. Berner knows financial data and he knows we don't have enough good data—yet.

Berner was a keynote speaker at the Federal Reserve Bank of Cleveland's joint conference with the Office of Financial Research on financial stability analysis on May 30, 2013. Mark Sniderman, the Cleveland Fed's executive vice president and chief policy officer, interviewed Berner at the Federal Reserve Board in Washington, DC. An edited and condensed transcript follows.

It's exciting, exhilarating, and a huge challenge because you're going where nobody's gone before. And hopefully boldly, as the saying goes.

Sniderman: *Thank you for your willingness to sit down and join me today.*

Berner: Thank you for having me.

Sniderman: *How did the Office of Financial Research (OFR), a brand new office, come to be a part of the Dodd–Frank Act, and what's the OFR's mission?*

Berner: In the wake of the crisis, we saw that there were very significant gaps in our knowledge of how the financial system worked and in our ability to measure financial activity. To fill those gaps, Congress created the Financial Stability Oversight Council (FSOC) and the OFR, both within the Treasury. The OFR's mission is to serve the needs of the FSOC in assessing and monitoring threats to financial stability and to improve the quality and scope of financial data for the FSOC and its member organizations.

Sniderman: *This might not be such a great analogy, but the image of a roving linebacker comes to mind. The idea that there's someone to spot areas of vulnerability within the financial system. Why didn't Congress give existing agencies more authority to accomplish this?*

Berner: It's not a bad analogy. It's not our mission to duplicate or replicate what other organizations in the FSOC are doing. Rather it is to fill in the gaps.

Sniderman: *What is it like to have to start up an office—to start essentially from scratch—like you are doing with the OFR? How do you get organized? Where do you start?*

Berner: It's exciting, exhilarating, and a huge challenge because you're going where nobody's gone before. And hopefully boldly, as the saying goes. Boldness is necessary because you need to have a vision of what you want to accomplish. The congressional statute provides the framework for how the OFR should be set up, what its mission is, and so on. But within the lines of the statute, there's a lot of room for interpretation and inserting a personal vision.

In consultation with the Treasury and, more broadly, in consultation with the other members of the FSOC, whose needs the OFR serves, we started to develop that vision for how it would function. It requires a culture of collaboration, engagement, and accountability. The OFR also needs trust within the organization and from the other agencies of the FSOC to function. And this all takes time. This is not something that can happen overnight. It's not exactly like the pyramids, but nonetheless, it's something that does require patience and persistence to really put together and stick to that vision, particularly when others have a lot of doubts about whether you're going to get there.

Sniderman: *Have you come across any helpful models, either in other US industries or internationally? Or is this really a one-of-a-kind effort?*

Berner: It is one of a kind, but there are other things or other entities that have some similarities to what we're doing. Take, for example, the Congressional Budget Office (CBO). That was started from scratch in 1974 to serve the needs of Congress, to have a particular mandate, to do analysis of budgetary issues for the benefit of Congress, and to come up with quantitative metrics by which they could score particular bills and initiatives.

Sniderman: *That's a particularly apt example. It is pretty remarkable that for about 40 years, CBO has clearly been able to maintain a reputation for bipartisan objectivity.*

Berner: Exactly. And that goes back to the first director, Alice Rivlin. I happened to run into Alice shortly after I took this job and I asked, "What advice would you give me to set up the OFR, since you did the same thing, in effect, at CBO?" She said, "Just do it." That was her advice. Worked for Nike, worked for her, works for me. Obviously there are mid-course corrections as you grow and there are nuances as you evolve; but having some core principles, values, and a foundation for the mission is really key.

Richard Berner

Position

Director, Office of Financial Research

Former Positions

Co-Head of Global Economics at Morgan Stanley; Chief Economist at Mellon Bank; Economist for Morgan Stanley, Salomon Brothers, and Morgan Guaranty Trust Company; Director of the Washington, DC, office of Wharton Econometrics

Awards

Forecasting awards from *Blue Chip Economic Indicators*, the *Wall Street Journal*, *Market News*, and the National Association for Business Economics. He was also awarded the 2007 William Butler Award for Excellence in Business Economics.

Education

Harvard College, BA
University of Pennsylvania, PhD

I happened to run into Alice [Rivlin, first director of the Congressional Budget Office] shortly after I took this job and I asked, “What advice would you give me to set up the OFR, since you did the same thing, in effect, at CBO?” She said, “Just do it.” That was her advice. Worked for Nike, worked for her, works for me.

It is interesting that Congress set us up as an office that doesn't have any policy responsibility. The objectivity factor is really important because it separates us from the policymakers who do have that responsibility. We don't have to defend the policies. In fact, it's our mandate to evaluate the policies, particularly stress tests, but also to look at the effectiveness of the policy tools we're developing to achieve financial stability. The objectivity and the integrity of our research are core principles that I tried to lay out from the start and that we want to really build into the culture of the organization.

Sniderman: *Let's move back to economics. There was a time when most economists said the best regulator was market discipline. Has the financial crisis proved those economists wrong? Has market discipline lost its standing in the world of big ideas, or is the opposite the case? Has the pendulum swung too far with too much regulation? How do we balance these ideas?*

Berner: In some ways, I think that dichotomy is a false one because market discipline really hinges on the incentives you put in front of market participants. If they have the wrong incentives to take on too much leverage or risk, or if our policies and regulations depress the price of risk, they're going to want more of it. In the buildup to the financial crisis, there were incentives for people to write credit and liquidity puts (an agreement in which one firm agrees to provide a counterparty cash or equivalent), to write options, and to make funding really cheap, which all contributed to its severity.

One of the three key mandates of the FSOC is to restore market discipline, which implies it was lacking. The reason it was lacking was people were provided with the wrong incentives. Market discipline is great when it works the right way, but you have to provide the right incentives: to do the right thing; to self-insure; to recognize that if they're going to take on more risk, they may take losses in accepting that risk; and that they understand how to analyze, to measure, and to manage that risk. Those are all very important factors in thinking about how market discipline should work.

Sniderman: *Has there been an evolution in how both economists and regulators think about financial stability?*

Berner: There has. While there was some attention paid to examining the financial system as a whole prior to the crisis, after the crisis that focus is almost universally embraced. There was also an assumption that if we had economic stability, then financial stability would follow—like in the discussion of the Great Moderation, where reducing business-cycle volatility was thought of as a way to promote economic stability. But it didn't quite work that way.

Not paying attention to financial stability needs and being complacent led people to assume we didn't have to worry too much about it because we had a benign period. From my perspective, that's exactly the time that we should be vigilant and watchful for signs that people might be taking on extra risk because they get paid to do it. There has been a lot of good research recently that supports the claim that when volatility is low and the price of risk is low, people are going to take on more risk, whether it's through leverage or maturity transformation or other means. That's when you start to see a buildup of risks in the system. So there's been a change in thinking in that respect.

Sniderman: And maybe where the risk–return tradeoff was thought to be better?

Berner: Indeed. If you didn't have capital requirements, if you didn't have all these things that are restricting returns and that are building in cushions of safety, the returns are higher, but so are the risks. So how do we adapt the idea that we need to limit those risks and the buildup of those risks in markets? In the paper, we talked about the idea of minimum haircuts in repo markets, which are key for funding securities financing—so-called securities financing transactions. The implementation can be tricky, but it's something worth looking at.



Sniderman: Recently, you've researched how a systemic regulator might operate to avoid a replay of the financial crisis period. One thing you and your co-authors identified was a problem with fire sales in magnifying the crisis. How do you think we could head those off in the future?

Berner: Fire sales result from two things. One is that investors get complacent and assets become overvalued, so people pile into assets because they're paid to do that. And second, they may try to enhance returns using leverage that adds to risk and to the resulting unwind of that over-valuation. Eventually a shock comes along, particularly if leverage or risks that are asymmetric in nature have been used. Then, all of a sudden, the price of the assets goes down, the risks get unwound, participants might be subject to margin calls if they've embraced leverage significantly. All those things magnify the impact of the initial shock. That's the origin of fire sales. So we must determine how to limit the incidence of fire sales or, on the other side of the balance sheet, runs.

Sniderman: Do you think that some of this is because in some cases people realize that they may have taken on excessive risk but think that they'll be able to get out of the door faster than everybody else?

Berner: That's part of it, sure. But I think it's important that, if you work in financial markets, then it's understood that people in theory look ahead and manage risks well, but you always have to remember what they're being paid to do. When people are being paid to take on more risks, then it's very tempting to ignore what those risks might be in the future because of the short-term gain. That's a very important psychological or cultural factor that we always need to be mindful of.

So what do we need to do to make the system more resilient and to limit the buildup of risk? One of the things we wrote about in the piece that you're referring to is the fact that there was a bank-centricity to our prudential regulations. We focused on capital requirements and we focused on liquidity requirements in banks or insured depository institutions. We didn't focus so much on what was going on in markets, but of course the regulations we had in those institutions prompted the migration of financial activity outside of those institutions toward the so-called shadow banking system that, properly defined, involves the creation of money-like liabilities.



Sniderman: *A lot of stress indexes actually show relatively low financial stress. Is this precisely the time to pay closer attention?*

Berner: That's exactly right. Because of the work of Hyun Shin, Hughes-Rogers Professor of Economics at Princeton University, and others, we've discovered that low volatility reduces the price of risk, which is a key ingredient in option pricing. When volatility is low and spreads are narrow, it gives people incentive to take on more risk. That's exactly when you should be watching for a buildup of leverage, a buildup of maturity transformation, a buildup of risk in other ways. That's exactly when we need to be more vigilant. There's the old adage that bankers make their best loans in the worst of times. And the flip side of that is they make their worst loans in the best of times. Same story.

Sniderman: *At the OFR, you've laid out a framework for analyzing threats to the financial system. Can you point to one or two areas in the framework that are sometimes overlooked and why you think they're so important?*

Berner: One of our goals is to fill the gaps in the data and try to find out where we need to improve both their scope and their quality, so we can do the analysis in a way that has integrity and rigor. Before the financial crisis, we clearly couldn't do that. We didn't have enough high-quality data to do that analysis. So data and data standards are key areas for improvement. If you assume your parameters because of insufficient data, that may dictate what the outcome is. That's important because often you draw those parameters from the historical pattern. History may not be replicated in the future. There may be regularities, but there may also be new things that arise and need to be accounted for.

One of the things that we try to emphasize, which is very difficult to deal with but which we need to think about hard, is that the financial system is constantly evolving and changing. It's evolving and changing incentives in response to changes in regulation. Recent changes to regulation will likely change the way that people seek returns and how they manage their risk.

These issues have some fundamental uncertainty attached to them, so they may be unknowable to some extent, but if we think hard about them and talk to market participants about what they're doing, then we can understand better where the system is going, as opposed to where it's been. I don't think we can predict financial crises and I don't think we know where the next shock is going to come from. Our goal is to make the system stronger, but in order to make the financial system stronger, we have to understand where those vulnerabilities are.

Sniderman: *Do you think that for some companies, the financial crisis was a wake-up call for them to improve their internal systems and data management, quite apart from any regulatory requirements?*

Berner: I think that the crisis was certainly a wake-up call in that respect. And it was an important wake-up call in one other key respect: risk management practices. The position of chief risk officer (CRO) was created to help manage desk or business-unit activity, but they really didn't look across the enterprise to manage risk across the whole company with all of its business units. I think the financial crisis really changed that, both in terms of the way we think about the best practices for risk management and in the kind of governance that's used. The CRO now reports to the CEO and has a lot more power, which is a totally different perspective from the way that it used to be. So the crisis has galvanized people to think about risk practices a different way.

Sniderman: *Let's talk about cyclical and structural ways of thinking about stress. These almost seem like terms borrowed from labor economics. How is that a useful way of approaching financial stress?*

Berner: I think it's quite useful because there are different kinds of threats in the financial system that require different analytical tools to deal with. The classic example of a cyclical threat is a buildup of debt or a buildup of leverage in the financial system, whether it's on the balance sheets of households, businesses, or financial institutions. The credit cycle is an inherently cyclical phenomenon. There are structural features that add what's called pro-cyclicality to the financial system. They magnify the impact of a shock and push the system in one direction, making it more severe. That pro-cyclicality is a combination of these structural features and the cyclical result. In order to remedy that, the structural vulnerability needs to be addressed.

A good example of a structural vulnerability in our system is the runnability of money funds. Now a run, you could say, is a cyclical phenomenon. But money funds, under certain circumstances, will intrinsically be runnable because you're promising—under current circumstances—a fixed, net-asset value, redeemable on demand for assets that are on the other side of the balance sheet and fluctuate in value.

In the buildup of the recovery phase or in the boom phase, there is a sense of market euphoria, a sense that people can get paid to take on more risk. But when the deleveraging comes—when the assumptions change and asset prices go down—the deleveraging is swift and the impact on the economy is sudden.

If there's a shock and the value of those assets goes down, people begin to distrust your commitment to credibly make good on your promise and they'll pull their money out. That's a run.

Sniderman: *And this is why the FSOC has proposed certain structural reforms?*

Berner: Indeed. It's why the FSOC and now the SEC in its analysis of money funds acknowledges that it's a risk. That's why the FSOC's and the OFR's annual reports have all stressed this. In fact, we've looked at the degree to which there was risk in the money fund universe and we found that it's probably more extensive than people realize.

We know that the financial cycle often takes longer to build than even an economic cycle. You can have a couple of recovery and recession scenarios during the buildup of risk in the financial system. In the buildup of the recovery phase or in the boom phase, there is a sense of market euphoria, a sense that people can get paid to take on more risk. But when the deleveraging comes—when the assumptions change and asset prices go down—the deleveraging is swift and the impact on the economy is sudden. We haven't done a good job thinking of metrics to calibrate financial cycles, even if we look at debt-to-GDP ratios or other aggregate metrics, because there are so many dimensions. That's something we can probably do more work on.

Sniderman: *In the wake of Dodd-Frank, some critics complain regulation reform is happening too slowly. How should we judge the right pace of reform?*

Berner: When I think about pace, I think that the real balance is between getting things done and getting them done right. As I think about how we went about setting up the OFR from scratch, some of the things we're setting up in Dodd-Frank are also from scratch. We want to be thoughtful about the way we do it and we want to get it right. We want to avoid blind alleys. We would rather be deliberate and thoughtful to get it right than be hasty and get it wrong. ■



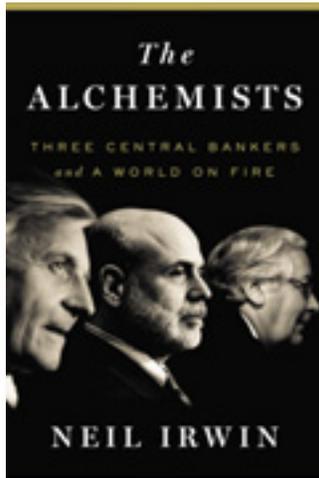
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"The Macroprudential Toolkit," by Anil K. Kashyap, Richard Berner, and Charles A.E. Goodhart. *IMF Economic Review* (2011) 59, 145–61.

Book Review



The Alchemists: Three Central Bankers and a World on Fire

by Neil Irwin
Penguin, 2013

The Alchemists is a book about power—who has it, and what they choose to do with it. In this account, three central bankers use their collective powers to avert a potentially catastrophic global meltdown. Our reviewer says this book is “definitely worth reading.”



Reviewed by
Abigail R. Zemrock
Executive Communications Coordinator

Magically transforming a valueless substance into precious silver or gold—that’s alchemy, the kind of sorcery one expects to encounter in a Disney movie or a J.K. Rowling novel. It’s not a theme that’s typically mentioned in the realm of economics, yet it features prominently in *The Alchemists: Three Central Bankers and a World on Fire* by Neil Irwin.

Irwin, a *Washington Post* columnist who has profiled some of the world’s leading economists, presents an engaging, fast-paced account of recent experiments in financial crisis management. In true journalistic style, he poses plenty of questions but offers relatively few answers and he takes care not to identify too strongly as either a central bank supporter or a skeptic, though we do see moments where he clearly sympathizes with his characters: Ben Bernanke, Federal Reserve chairman; Mervyn King, governor of the Bank of England; and Jean-Claude Trichet, president of

the European Central Bank. Irwin introduces this trio as “a brotherhood of uncommon intimacy... doing a job that most people don’t quite understand and more than a few regard as sinister.” He weaves together elements of their individual stories until they are deeply intertwined—not unlike the complex economies they serve.

In the opening pages, readers revisit the morning of August 9, 2007, a seemingly ordinary Thursday that would prove to be the epicenter of the implosion. Irwin shadows his trio through the rapid-fire disruptions of that day, bearing witness to Bernanke’s frenzied conference calls with his Fed colleagues, and King’s and Trichet’s abandonment of vacation plans as they rush to address the turbulence. Irwin’s approach is intentionally voyeuristic, and it’s successful in revealing the human side of a job that is often portrayed as anything but.

The author then backtracks a few centuries, serving up pivotal moments in financial history that bring context to the increasingly complicated roles that central banks play in modern times. Among other milestones, we revisit seventeenth-century Swedish currency, the British banking crisis of the mid-1800s, and the formation of the euro zone in the latter part of the twentieth century. Irwin's backstory culminates in 2005, in Jackson Hole, Wyoming, where his protagonists toast the Great Moderation, blissfully unaware that something nefarious was beginning to crumble the foundation of an enormously intricate house of cards.

Irwin's backstory primes readers to notice striking parallels between the past and present—for example, his depiction of then-New York Fed President Tim Geithner's after-hours brainstorming sessions deliberately mimics an earlier description of J.P. Morgan's late-night coalition of banking executives during the Panic of 1907. The point is evident: Finding success in modern monetary policy is as much about history as it is about economics.

Irwin expertly rounds out his subjects, showing them as heroes and villains—some much more pointedly than others. Take former Fed Chairman Paul Volcker, for example: He's described as “a giant of a man . . . responsible for the premeditated and cold-blooded murder of millions of small businesses.” Jean-Claude Trichet is the “wily strategist of European unity,” with the innate ability to persuade reluctant colleagues. Irwin presents Bernanke as a different type of hero. Clearly the book's central figure, Bernanke is framed as a thoughtful, consensus-seeking scholar, a quietly contemplative man with the extraordinary ability to be in the right place at the right time—the Clark Kent of macroeconomics. Irwin acknowledges Bernanke's extensive academic background and deep-rooted connection with history as instrumental in his decision making during the crisis: “It was sheer luck that the Federal Reserve had a chairman so well prepared for the moment.”

Throughout the book, the author poses tough questions to challenge our perceptions of the modern financial system and the increasingly complex roles of central bankers in it. Is money an abstract idea and not a physical object?

What gives the public confidence in money, and why do we assign particular people seemingly unlimited control over it? How should central banks balance secrecy with transparency, independence with accountability, bold action with careful deliberation? Irwin notes that these institutions may appear to be secretive syndicates but they generally aspire to do what's best for their nations' economies, regardless of external influences.

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In years to come, the unconventional policy actions taken during and after the recent crisis may prove to be nothing more than a philosopher's stone—an attempt to create money from nothing. Irwin devotes a chapter to the potential ramifications of this monetary sleight-of-hand. “You don't need a crazy potion to create value where there was none,” he explained in an interview with NPR. “If you have a central banker and a printing press, and the authority of the state imbued in both, you can create money from thin air.”

Above all else, *The Alchemists* is a book about power—who has it, and what they choose to do with it. In this account, three central bankers use their collective powers to avert a potentially catastrophic global meltdown. By working in tandem and reinterpreting their respective authorities as lenders of last resort, these seasoned crisis-fighters arguably prevented a bad situation from turning much worse. And, as Irwin puts it, “a catastrophe averted is no small thing.”

Medieval alchemists never did figure out how to create gold from everyday materials, and that may be the true moral of Irwin's story: Sometimes an outcome is best defined by what *doesn't* happen. ■

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