

Lessons from the Global Financial Crisis of 2008

Joseph E. Stiglitz *

This is a revised version of a lecture presented at Seoul National University on October 27, 2009. The author is indebted to Jill Blackford and Eamon Kircher-Allen for preparing the lecture for publication. The author is University Professor at Columbia University, Chair of the Management Board and Director of Graduate Summer Programs at the Brooks World Poverty Institute at Manchester University, and co-president of the Initiative for Policy Dialogue. This lecture is based on research supported in part by the Ford and Hewlett Foundations. A fuller articulation of many of these ideas (and references to the research on which they are based) is contained in *Freefall: America, Free Markets, and the Sinking of the Global Economy*, New York: WW Norton, 2009.

Keywords: Financial crisis, Regulation, Tobin tax, Moral hazard, Global imbalances

JEL Classification: E6, F2, F4

I. Introduction

The world has been going through a major crisis, the worst since the Great Depression. In the last thirty years, there have been more than a hundred crises around the world. As terrible as this may be for the people in these countries, it is good for economists since we now have a lot of data to help interpret what causes crises and what to do or not to do about them.

I spent a lot of time in Asia in 1997-1998 during the East Asian crisis. I thought that a lot of what the US Treasury and IMF told East

* Professor, Department of Economics, Columbia University, Nobel Laureate. Uris Hall, Room 814, 3022 Broadway, New York, NY 10027, USA, (Tel) +1-212-854-0671, (Fax) +1-212-662-8474, (E-mail) jes322@columbia.edu.

[**Seoul Journal of Economics** 2010, Vol. 23, No. 3]

Asia to do then was wrong, making the downturns worse than they otherwise would have been. Interestingly, some of the very same people are now in Washington doing exactly the opposite of what they told East Asia to do in 1997 and 1998.

One of the big issues going forward is how to build a crisis resilient economic system. In order to understand what we need to do to be more resilient than we've been in the last 30 years, one has to understand the lessons of this crisis and the hundred or so other crises that we have experienced.

To help frame the discussion it is important to note that in the history of capitalism, there have actually been crises almost continuously for the past 200 years except for during one short period, the 25 or 30 years after World War II. Those years saw the most rapid and most widely shared economic growth, and in that period there was also strong regulation. This suggests that one can understand this crisis as a result of a failure of regulation.

Of course, at the core the problem was bad behavior on the part of the financial system. But financial systems almost always behave badly, so that is not a surprise. The problem was that the banks and others in the financial sector were not stopped from behaving badly by the regulators. I will try to explain the nature of the failures of the financial sector and why banks and other financial institutions often behave so badly, and then I will describe the kinds of regulations we can put in place to make the global economy more resilient, both at the level of individual countries and the global economic and financial system.

II. The Functions of a Financial System — and How America's Financial System Failed

To understand what happened, you have to begin by asking what the financial sector is supposed to do. It's very simple: it is supposed to allocate capital and manage risk, both with low transaction costs. If I were to grade our (the US) financial system, I would have to give it an F. First, it misallocated capital: it provided hundreds of billions of dollars to housing—for houses that were beyond people's ability to afford and in the wrong places, rather than taking the cheap capital that was available and investing it in productive enterprises. Had they done this, we might today be experiencing a boom in our economy. Second, instead of managing risk, they created risk. Finally, an efficient

financial system should provide these essential services at low costs. But America's financial system not only failed in doing what it was supposed to do, the transaction costs for this were also doing all of this were enormous. Before the crisis in 2007, the financial sector garnered for itself almost 40% of all corporate profits in the United States. It became an end in itself rather than a means to an end: that was one of the fundamental mistakes that we made. We prided ourselves on how large our financial system was. We should have realized that it was a symptom that something was wrong. You cannot eat, wear, or enjoy finance; it is a means to an end—to make the economy more productive. But it wasn't making our economy more productive; it was making our economy less productive.

The financial sector was innovating, but they weren't innovations to make people's lives better. If they were innovating to make people's lives better, they would have focused on the most important assets that most individuals in America and most countries have: their houses. People want to be able to manage the risk of home-ownership. They want to be able to put money in their house and have it grow, so that when it is time to retire or when their kids go to college, they have the requisite wealth, to retire or to send their children to college. Instead, the financial sector figured out how to steal as much money as it could from the poorest Americans, to lend to them beyond their ability to repay, and to increase the risk of home-ownership, so that today millions of Americans have lost their homes and millions more are in the process of losing their homes and with it their entire life savings. The financial sector was preying on the poorest Americans.

Meanwhile, they were doing everything they could to increase transaction costs in every way possible. Modern technology has created the technology that would allow an efficient electronic payment mechanism: when you go to the store and make a purchase, such a system could transfer money from your bank account into the retailer's bank account. How much should that cost? With modern technology, it should cost a fraction of a penny. Yet how much do they charge? One, two, or three percent of the value of what is sold—or more. It is sheer monopoly power extorting as much as they can, in country after country, especially in the United States, making billions of dollars of profits out of it all.

In short, when I describe what I think went wrong, there is a very simple answer: the financial sector.

A. Peeling Back the Onion: Explaining the Financial Systems Failures

But trying to understand this is like peeling an onion: underneath each explanation there is another question: Why did (does) the financial sector behave so badly? Why did (does) it misallocate capital? And why did things go wrong on so many levels? When you see something like this pervasively over and over again, you have to ask, What are the systemic problems?

One thing that economists agree about is that incentives matter. That is why we should begin our analysis by looking at incentives, at the organizational level and the individual level.

At the organizational level, we had banks that had grown too big to fail. It's not generally realized how much more concentrated our banking system has become in the last ten years, after we repealed the important law called the Glass-Steagall Act, which separated investment banks from commercial banks. Investment banks are designed to manage rich people's money, and commercial banks are the payment mechanism of our economy. Commercial banks should be conservative, since they are taking and managing ordinary people's money, which should be managed conservatively. People who are wealthy can gamble and take greater risks through investment banks. However, merging these two not only created a whole set of conflicts of interest but also increased the number of banks that are too big to fail. The mergers spread the culture of risk-taking that had dominated investment banks to the whole financial system.

'Too big to fail' is a problem because it creates one-sided risks. If a too-big-to-fail bank takes big risks and wins, it walks away with profits. If it takes big bets and loses, the tax payers pick up the losses. Under both the Bush and Obama administrations, the situation has gotten worse: some banks have collapsed and the surviving big banks have become (at least in a relative sense) even bigger, even more "too big to fail."

But the Bush and Obama administrations have introduced a concept that has never had a role in economics before — a concept that I view as having no validity: they claim that there are now banks that are "too big to be resolved." Under the notion of "too big to fail," if a bank is under the threat of going bankrupt, the shareholders and bondholders lose everything, and enough money is put into the bank to keep it going and to prevent losses to depositors, at least to the "insured" level.

We have done this over and over and over again, for instance, with Continental Illinois, the sixth largest bank in the United States, which collapsed in the 1980s. But the Bush and Obama administration said, "No, not only do we have to save the banks' depositors, but we also have to save the bankers, their shareholders and bondholders." Of course, if this happens, there is no discipline in capitalism; you get reward without risk. Bondholders are supposed to make economic risk judgments, but the government said, "No, don't worry about risk. We'll bail you out." And they bailed out the banks, their bondholders and shareholders, with hundreds of billions of dollars.

This concept was motivated by the same kind of political rhetoric that Bush used so effectively during the war on terror. Whenever anybody wanted to challenge the wars against Iraq and against Afghanistan, he said to remember 9/11. Iraq had nothing to do with 9/11, but he had instilled enough fear that most were afraid to oppose the Iraq war, which gave him a blank check to waste more than \$3 trillion on that war. The Bush and Obama administrations' refrain in the bank crisis was very similar: they said, "Remember 9/15," which was the day that Lehman Brothers went bankrupt and there was chaos in the market. They said, "If you don't save the bondholder and the shareholders of Citibank the same thing will happen." But we have drawn the wrong lessons from the Lehman Brothers collapse. The reason why the market went into trauma after 9/15 was the realization that many banks were undercapitalized and the fear that there were no principles involved in what the government was doing. Were they bailing out some firms and not bailing out others? There was total chaos on the part of the Federal Reserve and US Treasury, and in the chaos, nobody knew what to believe. The banks all knew that they had engaged in reckless risk-taking and had made huge bets. They knew that they had helped create a bubble, which was now crashing. They knew that many of financial products they had created would be worthless. All of the banks knew that they did not know what their own balance sheet was. They also knew that they didn't know what any other bank's balance sheet was, and so they knew that they couldn't know who to lend to and so they stopped lending. The credit freeze wasn't because of Lehman Brothers; it was because of the banks' reckless lending and because there were no principles evident in the bailouts.

There is a huge difference between writing a blank check, which was the approach after Lehman, and doing nothing, which was what was done on 9/15. We didn't have to go from one extreme to the other. In

the case of Citibank, for instance, we could have done something very simple: there were about \$325 billion of long-term bondholders, and we could have said to them, "We are going to play by the ordinary rules of capitalism. When a firm can't meet its liabilities, shareholders lose everything, and bondholders become the new shareholders. We are going to convert your bonds into the shares." That would have recapitalized Citibank far better than any amount of money from the government. It would have also given more confidence, which would have helped the financial markets.

But the banks had invested well, not in the housing or the real sector, but in politics: first, they had bought deregulation, and then they had bought a multi-hundred billion dollar bail-out. Now they are spending their political capital to prevent re-regulation.

B. Flawed Individual Incentives

These are some of the *organizational* incentives that are behind the reckless lending on the part of the banks. Individual incentives also contributed to reckless lending. The incentive structures for most of the top executives and many of the lending officers of these banks are designed to encourage short-sighted behavior and excessive risk-taking. An investment that gets a high return generates a large bonus, but if there is a negative return, the banker doesn't have to share in the losses. These are one-sided bets. In fact, before the crisis, I was worried because the standard economic theory said that there ought to be a crisis, since the incentives for bankers should cause them to be engaged in excessive risk-taking, which would eventually have dire consequences. I had forecasted a crisis, but I was worried that it was not happening. We faced a crisis in economic theory: if we had not had the crisis, economic theory would have been repudiated. It would have appeared as if incentives did not matter. Fortunately, we did have a crisis and economic theory was saved. But of course it was at a great cost to the rest of our society. The point is very clear: if you give people bad incentives, they behave badly, and they behaved just as one would have expected.

C. Flawed Corporate Governance

Again, it's like peeling an onion: we now have to ask why they had such bad incentives. Who won? Who benefited from what went on? Did the shareholders? No, they lost. Did the bondholders? No, they lost.

Did the taxpayers? No, they lost. Home owners and workers also lost. So who won? The executives of the banks won and walked away with hundreds of millions of dollars, and in some cases, billions of dollars. They don't have to give it back, even though other people lost money; they get to keep it. Of course, they would have been even better off if we hadn't had the crisis, but that was expecting too much. When you see something like that happen, what is the obvious answer? It is a problem of corporate governance — an issue that was discussed here in Korea at the time of its crisis. At the time, some American advisors described America's system of corporate governance as a model to be followed. It should be apparent: America's system of corporate governance itself is badly flawed.

One of the ironies is, back in 1997 during the East Asia crisis, when the IMF was coming here and talking about corporate governance, my view was that we ought to be looking at the United States' corporate governance as well, since there were obviously very serious problems in the United States. Take the most obvious question: who owns a corporation? The answer should be the shareholders. But, if somebody works for you, shouldn't you have a right to say something about their pay? In the United States, though, the shareholders have no say in the pay of the executives: they have no right even to vote in an advisory way. Proposals to change this have been made, but they have been very strongly resisted; our corporate leaders seem to claim that shareholders should not have any say in the pay of the people who work for them. It seems very strange to me. This illustrates the broader issue of corporate governance that I think has a lot to do with what is going on.

After the current crisis, Alan Greenspan said that he had expected banks to manage risk better. In saying that, he made a very important point: that even if the banks had not had perversely distorted incentives, the models they used were actually very bad. In fact, they had incentives to use bad models, not to think very much about the models, but the fact is still the case that their models were atrocious, which is particularly disturbing. We can maybe understand why the regulators didn't do a good job, since the regulating agencies don't get the best students, but the investment bankers were hiring the best students. Then why did they do such a bad job? To understand risks you have to know a little bit of mathematics, and in many of the banks, the people on the top are lawyers who have never taken a course in advanced statistics.

D. Flawed Models and Intellectual Incoherence

This raises a very simple question. We had a very bad crisis in 1987, when the stock market dropped 25% in a couple of days. We had another big crisis in 1998, when the hedge fund Long-Term Capital Management had to be bailed out. According to the “models,” events like that are supposed to happen once in a thousand or hundred thousand years. If they happen every ten years, what is the conclusion? It should be that something is wrong with your model. More specifically, the probability distribution that the models were using is called a “lognormal distribution,” which has tails that have a particular shape. But with the low probability events happening more frequently than they “should”—as is actually the case with these crises—bankers should have used a fat-tailed distribution. It’s just different mathematics. When, by the year 2000, these supposedly extremely rare occurrences had happened twice already, people should have known that their models were not right, yet they continued to use them. If those at the top of the organization had the appropriate training in statistics, perhaps they would have asked these questions. Or perhaps, like many of their academic colleagues, they would have continued to use the same models, “because everyone else did.”

Let me give you a couple of other examples to show how bad the models were and how bad the reasoning was. There are some people who still believe in rational expectations, but the only way I see it, they are irrationally attached to rational expectations. I wrote a paper in 1991, when the securitization process had just begun, in which I suggested that the whole thing was going to end in disaster. I went on to explain why I thought it would end in disaster, and I turned out to be exactly right. I said that the bankers would underestimate the degree of correlation among different assets, which they did, and that they were going to underestimate the probability of a price decline. Housing price declines don’t happen every year, but they do happen very precipitously every 20, 30, or 40 years. I didn’t understand though how badly our financial sector and those in other countries would do, since it is really hard to describe mindsets that are so peculiar. They believed that they had innovated new products that were so important that they were changing the world, which was why they deserved to get paid hundreds of millions or billions of dollars. But having changed the world, they continued to use data from the previous 5, 6, 7 to 10 years in their models. That meant that they believed the data before the

innovations gave a good forecast about the world after the innovations. So, while they believed that their innovations had changed the world, they pretended to use the data as if they hadn't changed the world. In fact, these innovations had changed the world, but exactly in the opposite way from what they thought.

There were a lot of innovations that were terrible. The reason they hadn't been "invented" before is that everybody realized that they were not good ideas. For instance, they introduced mortgages that required no documentation, which meant that people could just make up their income or the value of their house. The mortgage originating company owned the appraisal company, which was a real conflict of interest. There were mortgages that were equal to 100% of the value of the house, and in some cases more than 100%. And in the United States we have non-recourse mortgages, which means that if you decide you don't want to repay the mortgage, you just turn over the keys to the bank. That meant that a mortgage for 100% or more of the house's value was an option: if the price of the house goes up, you keep the keys, but if it goes down, you just turn over the keys to the bank. So, if you are lending 95%, 100%, or 105% and if there are some risks that the price of the house is going to go down, then what is the probability of mortgage default if the prices go down? The risk probably will go way up. This is why the assumption that prices couldn't go down was so important. (It was even worse than this: many of the mortgages had teaser rates and/or negative amortization; this meant that even if prices stabilized, many wouldn't be able to afford to stay in their homes once they had to pay "normal" interest payments.)

So what was going on, then? Prices seemed to be going up and up in United States. We were having a bubble that was being fed by the Federal Reserve, which was keeping the American economy going. The bubble sustained consumption, and the household savings rate in the United States went down to zero. It was clearly unsustainable, because while house prices were rising, most Americans' income (adjusted for inflation) was going down, especially during the Bush administration. In 2008, median household income was 4% below what it was in the year 2000; even in 2007 it was below what it was at the previous peak. How can you have incomes going down and house prices going through the roof? You don't have to have a Ph.D. to figure it out: you can't spend more than 100% of your income on housing. These trends were totally unsustainable, since all that it would take would be an increase in the interest rate and prices would come down *all over the country*.

In other words, the assumption of the models that the risks of default in different parts of the country were uncorrelated was absurd.

The bankers on Wall Street who were getting paid more than ample salaries never thought about this, that they were issuing mortgages that had a higher probability of foreclosure than the old mortgages, and that the risks were correlated. In fact, they said, "We have no foreclosures. Look at recent data." (Actually, many of the financial products were so complicated that it was very difficult for the investors in these products to look at the data. The financial sector seemingly had deliberately made things non-transparent. That was why it took a considerable length of time before the implications of increasing foreclosures came to be realized.)

The day of reckoning was postponed, because even when, say, interest payments increased from the "teaser" rates of the first few years, homeowners took out another mortgage instead of going into foreclosure. This was possible as long as the prices were going up at 10% to 20% a year. However, the risk was that the bubble could come to an end, and if it did, the consequences would be terrible. And they were.

Another example of their flawed reasoning involves derivatives and credit default swaps, which played a big role in the bailout, especially in the case of AIG. The bailout of AIG was originally \$89 billion, which may be the number that you remember. But if you look into it, the government gave them almost another \$100 billion on top of that, for a total of \$180 billion, which all had to do with AIG's outstanding credit-default swaps: they were betting huge amounts, into the trillions, and they couldn't meet their obligations. You may have wondered what the real risk was that they were managing and what they were doing. They were, for the most part, simply gambling. Bank A would bet Bank B that Bank C would go bankrupt, and A would try to do everything it could to make sure that would happen. And B would bet C that A would go bankrupt and so on. So what happened is that A would bet B, and then maybe the next day A would say, 'I want to cancel that bet.' The easy thing to do would be to cancel the bet. But not for the bank: they need more fees. You can get more fees by having B bet A, and the reverse, A bet B. In the mathematics, if A bets B and B bets A the same amount on the same event, the two bets cancel, but you have two transaction costs. More accurately, they *almost* cancel each other, except for one thing. What happens if A goes bankrupt? If A goes bankrupt, B owes A, but A, now that it's bankrupt, doesn't owe B (or more accurately, may not be able to pay B), so the two things don't

cancel. That's called counterparty risk and is of course a major risk. You might ask them, "Why didn't you cancel the bets? Why did you leave yourself so exposed?" They would say, "We couldn't believe that any of these banks would go bankrupt," *even though they were betting on the probability that the banks would go bankrupt*. What they were doing was totally intellectually incoherent, and yet they were generating huge amounts of revenue on this basis.

The important point to realize is that bankers' understanding of a lot of the models was sufficiently weak that even if they had good incentives they would have made some big mistakes, so we shouldn't think that better incentives would have been enough. If I bet you and make a mistake, nobody's going to care. But when one large bank bet another bank a hundred billion dollars then we do care, because the whole financial system could collapse. We need to have oversight and regulations when the consequences are so severe for the functioning of our basic financial system. There must be regulations because, even if incentives are right, people are fallible and make mistakes. We need to prevent the consequences to others when these mistakes are made.

E. Systemic Risk

Alan Greenspan, the former chairman of the Federal Reserve, said that he was surprised that they made these mistakes, that the banks managed their risks so badly. Seemingly, he believed that this was his key failure. There was, however, another failure in his regulatory policy: he should have realized that there are regulations because of externalities. There are consequences for others from those failures. Once you realize that, you realize that self-regulation, even if people were fully rational, is not enough. When each bank is judging risk, it is only looking at consequences to itself, not at the systemic consequences that might arise from its bad behavior. But those systemic consequences are (or should be) the focal points of regulators, so the whole theory of self-regulation that he promoted is absurd.

This raises another point, that even if there are no banks in the economy that are too big to fail, there can still be systemic risks: if a large number of smaller banks all have correlated behavior because they are using similar models, that correlated behavior can give rise to systemic risk. For instance, if they all want to sell some property at the same time, the price of that property goes down — and there are consequences to the economic system. So, it's important to realize that

big banks are a problem but also that correlated behaviors of lots of small banks can also be a problem; and the systemic regulator has to look out for this. That this did not happen is one of the key reasons that things went so badly.

F. Alternative Explanations

Let me talk very briefly about one of the competing theories about the causes of the crisis. This is that the Fed is to blame, because it allowed interest rates to be too low. Now, that explanation is very peculiar. First of all, we have had periods of time with both very low interest rates and high growth, like after World War II. We have also had instances where countries, like Thailand, had high interest rates and a bubble. So, low interest rates are neither necessary nor sufficient for having a bubble. The complaint about low interest rates is really peculiar. Normally, low interest rates should be a great thing — the basis of an economy's boom. Complaining about low interest rates is like a firm griping that it is losing money because its workers are willing to work for low wages. A bank explaining that it has lost so much money because the cost of capital is too low is making a similar argument. It's absurd! But the banks make that argument all the time, which should tell you something about their inability to think through these issues.

III. The Need for a Good Regulatory System

So the most important thing going forward is making sure that we have good regulations. We need a comprehensive agenda of regulatory reform. It is not going to prevent having another crisis, but it can make one less likely, and if one occurs, its consequences less severe.

A. Global Risks Posed by US Monetary Policy

Regulation is the key issue, but I want to go on and talk about another matter having to do with the United States' response to the crisis, particularly as concerns its monetary policy. The U.S. strategy of pushing interest rates to very low levels — it can't be much lower than zero — is a threat to the global economy. The theory, of course, is that providing the liquidity — all of that money — would help rejuvenate the American economy. Just the other day we saw the president of the

United State begging the banks to start lending. Now, after you give the banks \$700 billion to prevent their collapse, one might have thought that, in gratitude, the banks would do what those who had saved them wanted. It says something both about the banks and their political power and how both Administrations gave the money to them that the President had to go out and beg them to lend — and that they then, in effect, refused. There should have been conditions on the bailout, on what they did with the money they received. The Administrations could and should also have used some of the money to start a new bank that was unburdened by the legacies of the past. But that's not what the government did — they just wrote a blank check to the old banks that had done such a bad job in managing risk and allocating capital and said, "We don't want to have interfere with market capitalism. We think capitalism is great. Just look how well it's been doing!" Without those constraints, though, our banks took the money, and paid it out in the form of dividends and bonuses in the way that was consistent with what would have expected, given their incentives. What was galling to many Americans was that the bankers were receiving multimillion dollar bonuses as a reward for record losses. It's true that the losses were so big that it did take some sort of an achievement, but not the kind that you want to incentivize. The banks were taking all that liquidity (after paying bonuses and dividends) and not lending. Instead, some of them were hoarding it; others were using it to speculate — they call it trading.

The lessons from the United States are relevant in many other parts of the world — similar risks are arising elsewhere, as well. Asia has the greatest opportunities in the world right now, because this is the one region with growing economies. But that means there are also risks. Growth can feed bubbles, particularly in emerging markets. There are examples: Japan carry-trade helped fuel the East Asian bubbles, which led to the East Asian crisis in '97 and '98. Now, there is the prospect of having another crisis. One of the things we need to remember from earlier experiences is that the standard tools don't work very well in avoiding bubbles. When money was flowing into Thailand, for example, it raised interest rates. That in turn encouraged more money to fly into Thailand, which kept feeding the bubble until it broke. The system has a basic kind of dynamic instability.

In short, America's loose monetary policy is not succeeding in its objective of rekindling lending in the U.S. and therefore stimulating growth there. Rather, the flood of money is looking for investment op-

portunities globally. The risk is that this flood of liquidity will lead to bubbles in emerging markets, where growth appears to be the strongest.

B. Government Interventions Are Required

So what can be done? There are a whole set of micro and macro interventions that governments have to undertake.

Before describing these interventions, though, I want to reemphasize the basic lesson of the East Asian crisis: open unregulated global financial markets are dangerous. They can be the basis of strong economic growth that can bring prosperity, but they can also bring bubbles and crises. In Europe, the concept of the open capital market went to the extreme—the single market principle. Every country in Europe agreed to open its market to the financial products of any other European country. This system operated on the assumption that the country of origin will well-regulate the financial products that originate there. Iceland destroyed that idea. (You may have heard the joke: what's the capital of Iceland? Ten cents.) The Icelandic products were sold all over Europe, and when Iceland collapsed, it didn't have money to bail out the banks. In the Netherlands and the United Kingdom, there was a clamoring for the Icelandic government to pick up the losses of the depositors in their countries—costs that were really a result of the British and Dutch failures to adequately regulate their own countries' financial markets. The battle is still going on. But the bottom line is that countries need to protect themselves and their citizens.

This was one of the important recommendations of the UN Commission on Reforming the Global Financial and Monetary System that I chaired. We called for host country regulation. Each country has to protect itself—you cannot rely on others' regulations to protect yourself in this interconnected world. We also argued that there needs to be strong capital account management. This means taxes, restrictions and capital controls on capital inflows and outflows. (We use the term capital account management because some people don't like to use the word "capital controls," but also because there are a wider range of instruments employed than just restrictions.)

C. Towards a Better Regulatory System

There is a whole variety of what I call macro and micro prudential regulations that are necessary to stabilize the economy. Earlier, I described some of the things we have to do for banks (*e.g.*, make sure

that no bank is too big to fail). But we have to remember that a very large fraction of the lending—and it was the case here in Korea—is non-bank-lending. This is particularly true with the growth of the security markets. So we have to do more than think about banks—we have to deal with the whole financial sector. For instance, there need to be capital gains taxes to make it less attractive for money to come into a country, take a short-term capital gain, and leave.

In this last crisis, simple requirements on financial market—restrictions on the mortgages that could have been issued, with limits on loan to value or loan to income ratios—and requirements on banks like speed bumps (that would have limited the pace at which lending could have been expanded)—almost any of these might have succeeded in dampening the bubbles. There are, in fact, a number of tools available that can help protect the financial system. The regulators had the discretion to use some of these tools—but with regulators who don't believe in regulation, it is no surprise that these tools were not used.

D. A Financial Transactions Tax

But there are additional tools that should be used. One of the ideas that is gaining a great deal of currency is the Tobin tax, or a financial services transaction tax. In the 2008 German election, almost all the parties agreed on their need to have such a tax. Such a tax holds out the promise of raising revenues and curtailing some of the excessive speculative activity, thereby contributing to economic stability.

E. Good and Bad Bank Regulators

If you look around the world, there are a lot of banking systems that have weathered the storm pretty well. This made for an amusing moment at the first G-20 meeting in Washington. At the end of it, there were some statements that the advanced industrial countries stood ready to help the developing and emerging economies do a better job on monetary and policy and regulations. I tried to get our UN Commission to say that the emerging markets' Central Banks and regulators were ready to help the United States and other countries with the same. India, Brazil, Malaysia, and China (to name a few) had clearly done a better job than the U.S. The Commission deleted the sentence providing this "offer," saying that the United States would not see the humor.

But the fact is, it was not an accident that big countries like India,

Brazil and China weathered the storm better than the US: they had good regulation. Interestingly, Spain had one of the biggest bubbles. It didn't feel like it could intrude on market allocations in some of the micro ways that I think it should have in terms of capital gains taxes and others — actions that would have at least dampened the bubble and reduced the consequences of its breaking. Still, the country decided that it needed to make sure its banking system was well-capitalized. So a number of years ago it introduced provisions that essentially made sure that as they lent more, they also had adequate reserves. The result was that, while the Spanish real estate bubble was one of the largest, Spanish banks were still in relatively good shape. This shows that good regulations can be crafted that can protect banks even under very adverse circumstances.

IV. Global Imbalances

I want to conclude by saying a few words about global imbalances. Some people have blamed global imbalances for the crisis. By “global imbalances,” they mean the fact that the United States is borrowing a great deal of money from abroad, while a few countries like China and Germany have large surpluses. I do think that the global imbalances is a problem. The kinds of imbalances that we have seen in recent years are not sustainable. Of course, in any economy there are some lenders and some borrowers. But when it comes to these imbalances, the people who should be the borrowers are the lenders and the people who should be the lenders are the borrowers. The United States, for example, has an aging population, and the country should be saving for the baby boomers' retirement. Instead the richest country in the world was living beyond its means. That doesn't make any sense, and it is not sustainable. Global imbalances are accordingly something to worry about. Some economists who saw this thought that the collapse of the exchange rate would be one of the things that precipitated a crisis.

Eventually, if these imbalances are not corrected, the world will have a crisis, but it isn't this crisis. This crisis was not caused by a sudden collapse of the dollar.

Global imbalances are blamed for the current crisis in another way. Global imbalances meant that there was excess saving from the surplus country, and excess saving leads to low interest rates, and low interest rates can feed bubbles. Those holding the view that global imbalances

would cause the crisis implicitly blamed China for saving too much.

To criticize a country's savings is a very peculiar argument. If the United States or anyone else in the world used its savings well, it could've been a basis of a global boom. (Besides, those who blame the crisis on the "savings glut" seem to suggest that the Fed has no or little control over setting domestic interest rates. The real problem, as I have argued, is not too-low interest rates, but a dysfunctional financial sector and a regulatory system that failed to stop even its egregious misbehavior.)

Blaming the crisis on excessive savings is the wrong way to think about it. The disappointing thing is that the G-20 has been thinking about it that way. Their response to the global imbalance is that the United States must agree to have smaller deficits, and China will need to have smaller surpluses—in other words, to consume more. There are two things wrong with this prescription. One, even if China consumes more, it doesn't necessarily mean that it would be importing more from the United States—it isn't just that we don't have very much to sell that China might want to buy; China's increased expenditures are likely to be on services like health and education. Two, from a global perspective, what we need is not more consumption. In America, we were consuming too much. The planet cannot survive if all the world were to live according to America's profligate style.

Look around the world. We need investment—the world is in great need for investment. We need to retrofit the economy for global warming. We have problems of poverty: 40% of the world's people are living on less than \$2 per day. Considering this, how can we say that we need more consumption?

What we really need is more investments. We need a way to take savings in China and elsewhere and figure out how to make use of them in countries where they're needed. The job of global financial markets should be to move savings from where there are surpluses to where they are needed. The markets failed in that role. That is a central problem that needs to be fixed.

V. Explaining Global Imbalances and Excessive Global Savings

There is an important question surrounding global imbalances that we miss when we think about the imbalances in narrow ways. We need to ask, why are there such high savings outside of United States?

One reason is that, around the world, there has been an increase in inequality that has redistributed income from poorer people, who would spend it, to richer people who have a lower marginal propensity to consume.

Another reason for high savings is a result of the 1997-1998 East Asia crisis. Countries do not want to expose themselves to that kind of risk. The Prime minister of one of the countries in the region put it this way to me: he said, "We were in the class of '97. We learned what happened when you don't have enough reserves and never again would we allow that to happen. We don't want to have the IMF coming in to convert our recessions into depression, and we don't want to lose our economic sovereignty." So countries started accumulating hundreds of billions of dollars of reserves, globally. That increased their security, but presented globally what is known as the paradox of thrift — an increase in savings may lead to a weaker economy. The lack of spending weakens the global economy. The amounts are significant: developing countries are now holding trillions of dollars of reserves.

The way we mismanaged this crisis means that this problem will likely continue or become even worse. When I attended the IMF meeting in Istanbul in September 2009, there was broad consensus on this issue. There was, however, a lack of consensus on what to do about it.

But there is another school of thought that thinks the problem is not excessive savings in developing countries, but too little investment. Of course it's the balance between the two. The focus on a dearth of investment leads us to ask, why might investment be weak, or weaker than it "should" be? One answer is that strengthening of intellectual property rights has reduced the return to investors from developing countries.

New global regulations may have unwittingly contributed to global imbalances through other channels. WTO restrictions on industrial policy may force countries that want to based development on "export led growth" to resort to exchange rate policy — low exchange rates lead to more exports, but also to larger surpluses.

VI. Concluding Note

A. On the State of the Global Economy and the Failure of Markets

Finally, let me say a word on the state of the global economy. There's something very strange about the current situation. There are all these

unmet global needs, such as alleviating global poverty and retrofitting and restructuring the global economy in response to the challenges posed by global warming. Meanwhile, we have excess capacity: we are not fully utilizing labor, nor are we utilizing our capital goods. The fact that there is this imbalance between supply and demand is a reflection that the market economy is not working the way standard theory says it should. The gulf is costing our society enormously.

B. On the Response to the Crisis

The second concluding note is a lesson from the East Asian crisis and from the current crisis. After a crisis, a society's resources are the same as they were beforehand. The people are the same, and the capital goods are the same — they haven't disappeared. In the run-up to the current crisis there was a massive misallocation of resources. No democratic government (outside of war) has ever wasted resources the way that America's private sector wasted the resources in the run-up to this global recession. But once that crisis occurs, those resources, whatever they are, are there. The unfortunate thing is that, in the chaos of the crisis, property rights and claims on resources get all jumbled up; and valuable resources are left idle and unused. Thus, the greatest societal losses actually occur after the crisis begins. It's happening right now — we are not fully utilizing our human resources or our capital resources. It's a result of macro mismanagement on a huge scale, with losses now in the trillions of dollars.

We can blame the banks for creating the crisis. But we have to blame ourselves somehow for not being able to manage our response to the crisis well — in a way that makes sure we make use of the full potential of our resources. Keynesian economics presented us the tools and the intellectual framework so that today we *can* manage the consequences of a crisis better than we have done in the past. The question is, will we?

(Received 27 October 2009; Revised 22 May 2010; Accepted 29 May 2010)

