The Financial Crisis: Causes and Lessons Learned

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Thank you for inviting me to speak here today. It is a special honor and pleasure to share the stage with Leszek Balcerowicz. I first met Professor Balcerowicz when he was finance minister in December 1989 here in Warsaw. I had travelled from the United States as part of the United States government economics team at the time. I admired the courage and foresight of Leszek then, and I remain in great admiration today. It is good to be back in Poland and to observe the tremendous progress in 21 years which has been made possible by the important reforms Leszek helped usher through.

Today I want to talk about the recent financial crisis. I started doing research on the financial crisis in 2007 just before the crisis flared up in August of that year. My approach has been empirical. I have not focused on who said what to whom when, however interesting and ultimately important that story is. Rather I look at the timing of events and at data—at interest rates, stock prices, credit flows, money supply, housing starts, income, consumption—using statistical techniques and simple charts, concentrating on what is amenable to economic analysis. I also try to use the discipline of "counterfactuals," or stating what alternative policies or events would have been and using economic models to examine the impacts. I looked at economic policy throughout the crisis, including the period leading up to the panic in the fall of 2008 and the year and a half since then. What I have found since the start of this research is that government interventions—many well-intentioned government interventions—did a great deal of harm. With these findings in mind, I wrote one of the first books on the crisis, *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis* which has now been translated into Polish.

The Causes

I begin with the first big government deviation leading up to the crisis. Figure 1 is drawn from *The Economist* magazine; it plots the interest rate set by the Federal Reserve from 2000 to early 2007. I reproduced this chart in *Getting Off Track.* Note how the actual interest rate came down in the recession of 2001, as it would be expected to do, but then became very low—falling below 2 percent and then down to 1 percent—before rising back up again slowly.

Chart from *The Economist*, October 18, 2007

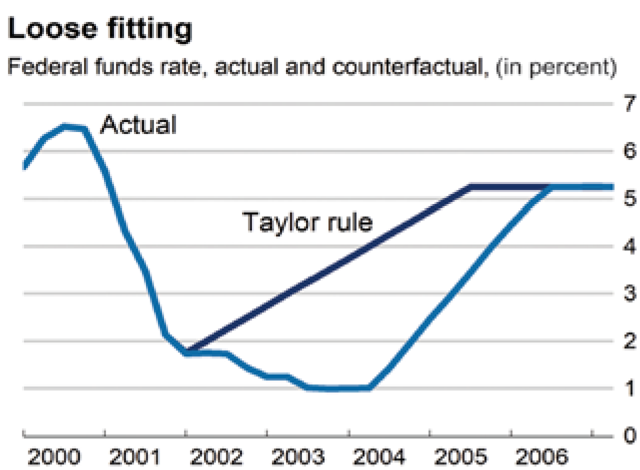

Figure 1

This is the period in which interest rates were too low according to the Taylor rule, which the *Economist* shows as the dark line in the figure representing what policy would have been, had it followed the principles that worked well for the previous 20 years. That is, interest rates would not have reached such a low level and they would have returned much sooner to the neutral level and above what they eventually reached. So in this sense there was a deviation from a more rules-based policy. One does not need to rely on the Taylor rule to come to the conclusion that rates were held too low. The real interest rate was negative for a very long period, similar to what happened in the 1970s.

So it should not be surprising that such an unusual policy led to some problems. According to my research, the low interest rates added fuel to the housing boom, which in turn led to risk taking in housing finance and eventually a sharp increase in foreclosures and balance sheet deterioration at many financial institutions. To test the connection with the housing boom I built a simple model relating the federal funds rate to housing construction. I showed that a counterfactual higher federal funds rate would have avoided much of the boom as shown in Figure 2.

I call this monetary policy decision a discretionary *intervention* by government because it was an intentional departure from the policies which were followed in the decades before. Some policy makers say the departure was undertaken to avoid downside risk, perhaps a Japanese style deflation. I have no doubt that it was well-intentioned, an example of what used to be called discretionary fine tuning. The Fed's description that rates would be low for a "prolonged period" or that rates would rise at a "measured pace" illustrate this fine tuning. Markets were generally aware of it and the departure from policy rules confirmed it. I think it is an example where the perfect can become the enemy of the good.

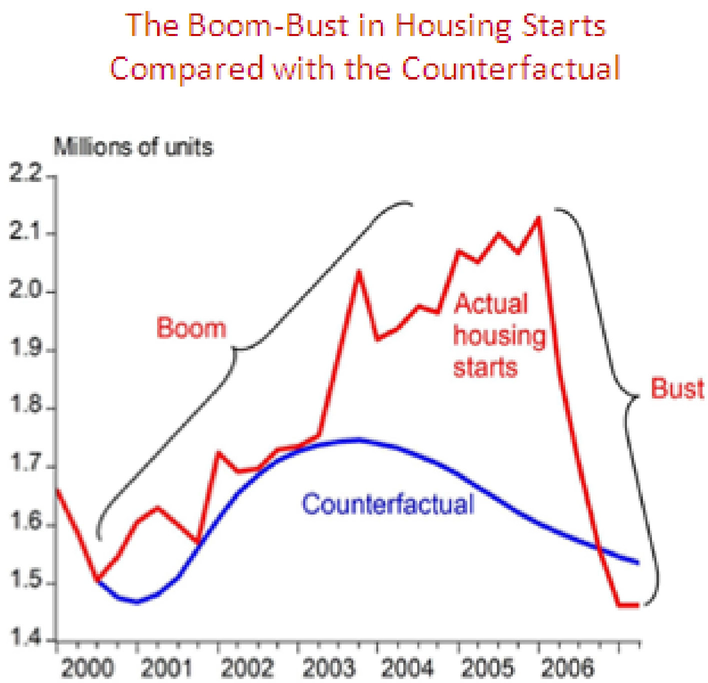

Figure 2

This is not the whole government part of the story, of course. The government-sponsored enterprises, Fannie Mae and Freddie Mac, also encouraged the housing boom. But whether or not you include these on the list, the ultimate source of the extraordinary housing boom and the subsequent housing bust and financial distress was government policy. Capital inflows from abroad may have added to the problem, but the evidence is clear that monetary policy had deviated in the direction that would likely lead to poor policy performance.

When the crisis became evident with the flare up in the money markets in August 2007 a host of additional interventions were undertaken by government, but these had little positive impact. In my view the crisis was misdiagnosed as a liquidity problem rather than a counterparty risk problem in the banks and as a result the policies did not address the problem. To illustrate this consider Figure 3 which shows the LIBOR-OIS spread through the summer of 2008 along with one of these interventions—the term auction facility (TAF).

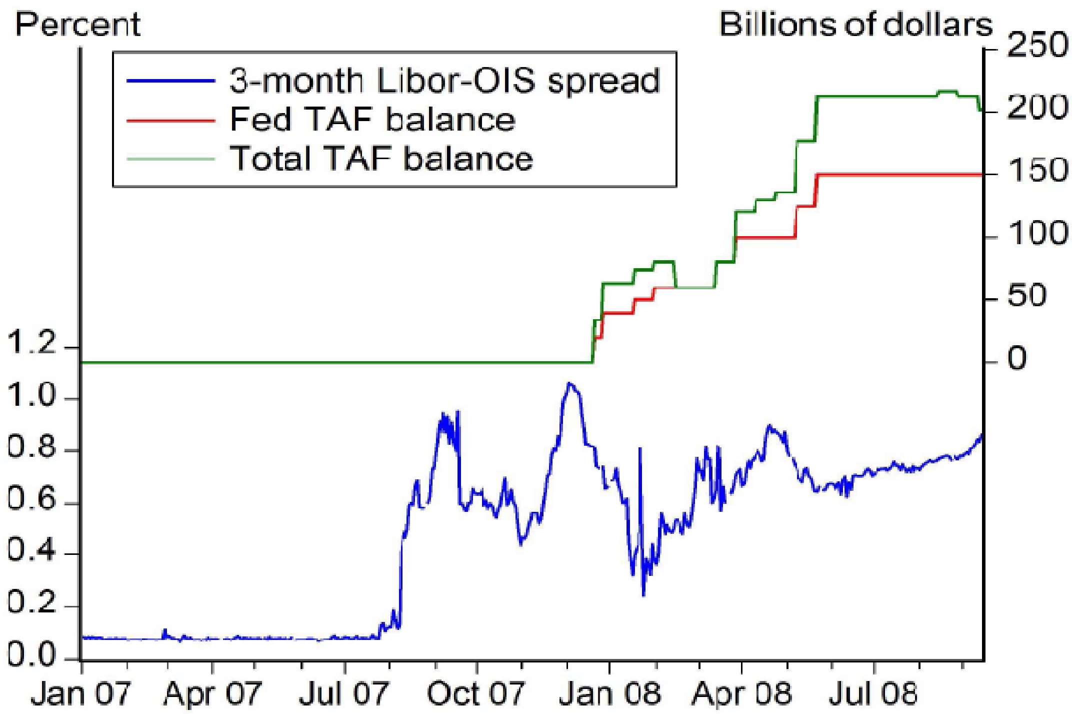

Figure 3

The LIBOR-OIS spread is the difference between the interest rate on 3-month unsecured loans between banks (LIBOR) and an estimate of what the federal funds rate will be, on average, over those same three months (OIS). The spread is a good measure of tension in the interbank market. The jump in the LIBOR-OIS spread in August 2007 is very clear in Figure 3. I first began researching that jump soon after it occurred trying to determine what caused it. I enjoy following the federal funds market, and when I saw this jump I was naturally curious. Based on work with John Williams of the Federal Reserve Bank of San Francisco, I concluded the jump in spreads was due to counterparty risk in the banking sector. We now know the banks were holding many toxic assets, but that was not clear to many at the time, and the problem was diagnosed as a liquidity problem. John Williams and I called our paper “A Black Swan in the Money Market” because the event was so unusual.

As a result of the misdiagnosis, one of the policy interventions was to increase the supply of liquidity through the term auction facility (TAF) as shown in Figure 3, with some foreign central banks joining in. When these facilities were first enacted, in late December 2007, the LIBOR-OIS spread declined a bit. But this respite did not last, and as is clear in Figure 3 the spread rose again and remained high. I find no strong evidence that these liquidity facilities affected these rates. And the evidence remains lacking to the present. In fact, if you look at reasonable measures of risk in the banking sector, such as the spread between secured and unsecured interbank loans, you can explain the movements in LIBOR-OIS very well. In my view, this policy intervention prolonged the crisis because it did not address the balance sheet problem at the banks and other financial institutions.

There are many other examples of interventions. The most unusual and significant actions were the government interventions to rescue financial firms and their creditors, culminating in the rollout of the Troubled Asset Relief Program (TARP) during the week of September 21 2008. In my view, however, the rollout was part of a chaotic series of interventions going back to Bear Stearns in March 2008, and included the Fannie and Freddie interventions, the AIG intervention, and even the Lehman non-intervention, which I include because the decision to not intervene was a big surprise. Figure 4 shows the LIBOR-OIS spread during the panic period. Recall from Figure 3 that the LIBOR-OIS spread jumped in August 2007. But the spread increased by much more during the panic, by more than 350 basis points after hovering close to 100 basis points since August 2007. Figure 5 focuses on several key events, which are labeled on the graph. The Lehman bankruptcy occurred early Monday, September 15, after a long weekend during which a decision was made not to bail out Lehman and its creditors. Observe that the LIBOR-OIS spread increased slightly on September 15 and then fluctuated during the rest of the week. But these turned out to be relatively minor movements. The major movements in the spread occurred with the government's rollout of the TARP and the skeptical reaction in the Congress and much of the country to that TARP proposal. Note that Federal Reserve Board Chairman Bernanke and Secretary of the Treasury Hank Paulson gave testimony on Tuesday, September 23, to the Senate Banking Committee. The market turmoil significantly worsened in the following weeks. In the rollout of the TARP, people were warned by the government not only that "there is systemic risk" but also that "the Great Depression is coming". This scared people around the world and led to panic and a severe hit to the world economy.

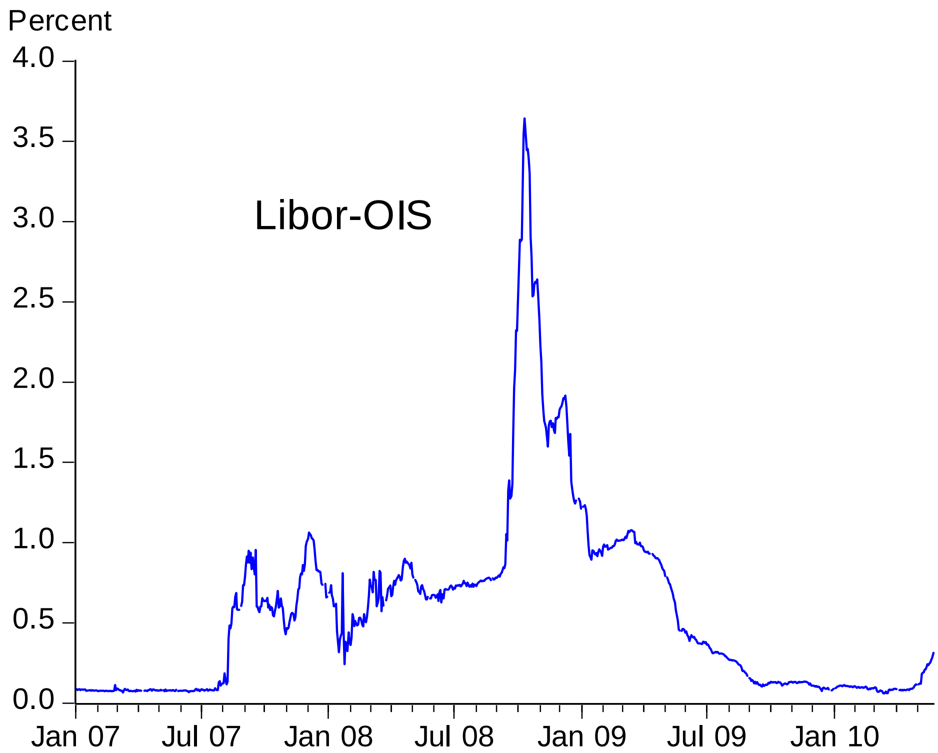
Percent
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Libor-OIS
Jan 07
Jul 07
Jan 08
Jul 08
Jan 09
Jul 09
Jan 10

Figure 4

Event Study of the Worsening Crisis (2008)

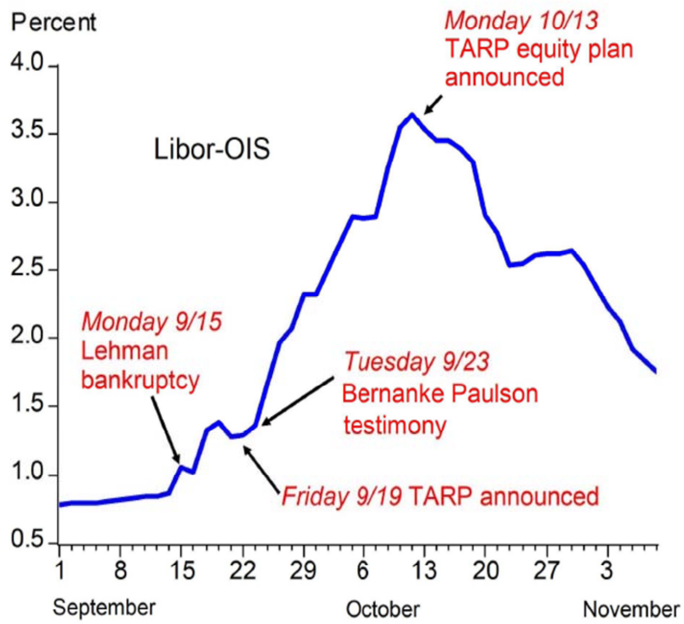

Figure 5

Could at least the chaotic pattern of these interventions have been avoided? We can debate whether the intervention in the case of Bear Stearns was appropriate or not. I have my doubts, but let's put those doubts aside. The key question then pertains to the period *after* that intervention. It is not too difficult to imagine an environment in which the markets and the public in general would have been guided by a description by the Federal Reserve and the U.S. Treasury of the reasons behind the Bear Stearns intervention, as well as the direction and intentions of policy going forward. This sort of transparency would have given people some sense of policy actions to come. But no such description was provided.

Figure 5 reveals something else that bolsters the case that uncertainty about the interventions made things worse. The turning point in the panic—measured by the LIBOR-OIS—occurred when uncertainty about the TARP was removed. Recall that the testimony on September 23, 2008 stated that the original purpose of the TARP was to buy up toxic assets on banks' balance sheets. People were skeptical about how that would work and government officials had difficulty explaining how it would work. Consequently, there was much uncertainty at the outset. The program itself was apparently not prepared very much in advance. But, after the TARP was changed and it was made clear on late Sunday, early Monday, October 13, 2008 that the funds would be used to inject equity rather than buy toxic assets, conditions began to improve. You can see that this was the peak for the LIBOR-OIS spread which continued to come down further.

Other market measures show similar patterns. Figure 6 is the same type of event study as Figure 5 except it uses the S&P 500. Observe that the S&P 500 was higher the Friday after the Lehman bankruptcy than it was the Friday before. You prove causation with this timing of events, but they certainly suggest that the Lehman bankruptcy alone was not the cause of the panic. The sharp drop in the S&P 500 occurred much later. Moreover, the end of the panic in the stock market is on October 13, when the TARP equity plan was announced.

The Panic of Fall '08

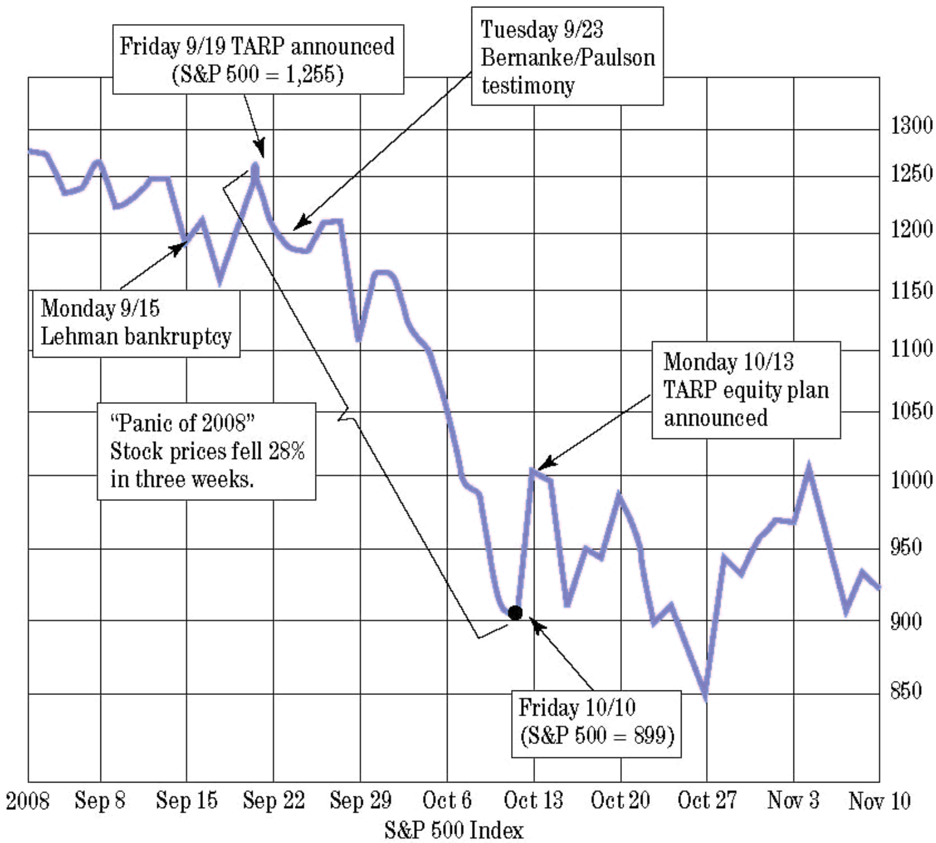

Figure 6

This panic quickly spread beyond the United States as international data show. The table below shows major stock market indices around the world.

	S&P	FTSE	DAX	CAC	IBOVESPA	NIKKEI
Sept 12	1252	5417	6235	4332	52393	12215
Sept 15	1192	5204	6064	4169	48419	11609
Sept 19	1255	5311	6134	4324	53055	11921
Oct 10	899	3821	4544	3176	40829	8276

The pattern is very similar to the United States. Equity prices came down on Monday, September 15, 2008, but were higher on Friday, September 19, after which they collapsed by 30 percent or so. Britain's FTSE behaves roughly this way and the story is the same for the German, French, and Japanese stock markets. It was a common story around the world. According to these data, the disruption does not seem to be as due to the Lehman Brothers bankruptcy as it is to the series of policy responses.

What about other policy actions during the panic form late September into October? The panic is a complex period to analyze because many actions were taken at the same time, including the Fed's programs to assist money market mutual funds and the commercial paper market. These were intertwined with the FDIC bank debt guarantees and the clarification on October 13, after weeks of uncertainty, that the TARP would be used for equity injections. As discussed above, this clarification was a major reason for the halt in the panic in my view. Nevertheless, based on conversations with traders and other market participants the Fed's actions taken during the panic were also helpful in rebuilding confidence in money market mutual funds and the commercial paper market.

Poland and Other Emerging Market Economies

The resiliency of Poland to these shocks is amazing. Poland was the only country among the 27 European Union countries not to have a recession during the Great Recession. To be sure, Poland was not the only emerging market country to show such strength; I have noted the strength in India and Brazil, not to mention China. The contrast with the 1990s, when emerging markets were suffering their own crises, is stark.

Why were Poland and many other emerging markets economies so resilient? In my view the most important reason is that they had moved toward better macroeconomic policies in the 1990s and they stuck to those policies during the crisis. They were careful not to borrow in foreign currencies. They built up their foreign reserves so they could intervene in the case of a big shock like the one they received. They kept inflation relatively low and were more careful with public sector deficits. And they did not over-react or panic during the crisis.

Figure 7 shows how emerging market countries now have a better public debt record than the developed countries according to the IMF.. And the projections by the IMF suggest that this difference will continue.

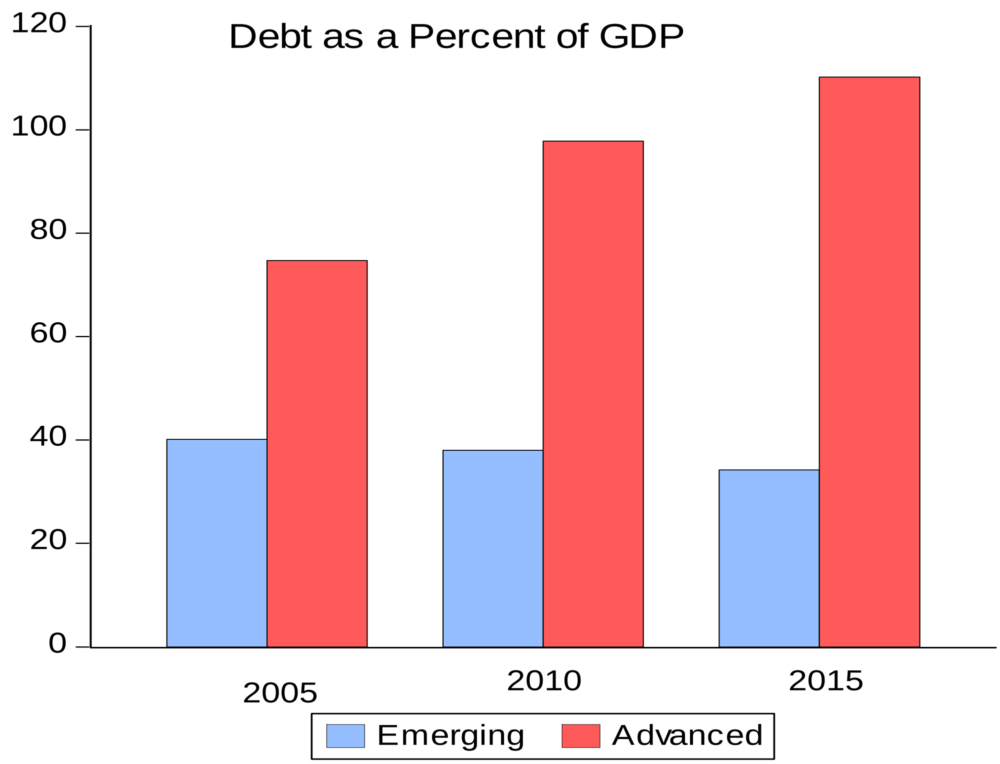

Figure 7

Finally, Figure 8 shows how Poland is doing in comparison with the United States and also with Greece, again according to IMF. While Poland must continue to be diligent in preventing debt from increasing, it is in better shape than the United States. At the other extreme you see Greece, whose crisis should be a warning for all countries, and another piece of evidence that government policies can often be the problem rather than the solution.

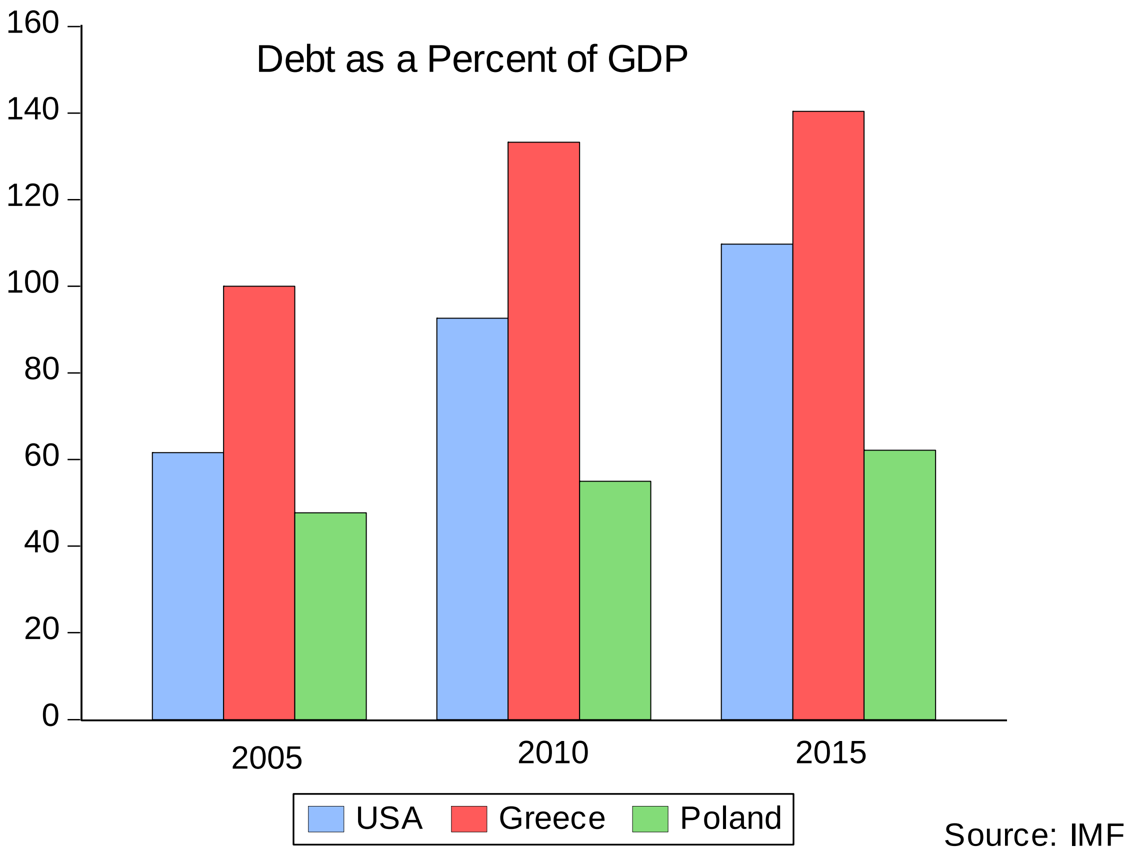

Figure 8

Lessons Learned

In my view, this summary of crisis shows convincingly that government interventions did more harm than good. And the government interventions were a deviation from what was working well. So the lessons learned from the crisis could not be any clearer: policy got off track, it should get back on track.

Of course, throughout this period there were market problems of various sorts. Mortgages were originated without sufficient documentation or with overly optimistic underwriting assumptions, and then sold off in complex derivative securities which credit rating agencies rated too highly, certainly in retrospect. Individuals and institutions took highly risky positions either through a lack of diversification or excessively large leverage ratios. But mistakes occur in all markets and they do not normally become systemic. In each of these cases there was a tendency for government actions to convert non-systemic risks into systemic risks.