

*Lessons from the Financial Crisis for Monetary Policy in Emerging Markets**

John Brian Taylor

I am honoured to give this lecture in memory of L.K. Jha. It is a particular privilege to deliver it at this Platinum Jubilee celebration of the Reserve Bank of India. L. K. Jha was a truly outstanding economist and public servant, with experience at all levels of government. He rose up through the Indian Civil Service to become the Principal Secretary to the Prime Minister, after which he became Governor of the Reserve Bank of India, and then Ambassador to the United States and Governor of Jammu and Kashmir. He also took time to write books and serve on important commissions, including the Willy Brandt Commission on the interdependence between developed and developing economies. I admire how L.K. Jha worked to make good economic policy a reality and how he focused on helping people.

I never met L. K. Jha, but I feel I have come to know him through his writings. Two of his books are a particular delight, in part because they are short, which is unusual for economics books.

North South Debate is about policy principles.¹ Jha focused on the deteriorating relationship between the developed and developing world in the 1970s. He argued that the confrontation was caused by the poor economic performance in the United States and other developed countries during the Great Inflation of the 1970s. He characterised the policy that eventually led to the poor economic performance with a catchy phrase: it was a policy of "following Keynes at home and Adam Smith abroad" (p.28), and while Jha argued that this worked

* Speech by Prof. John Brian Taylor, Stanford University, USA at the eleventh L.K. Jha Memorial Lecture in Mumbai on February 24, 2010.

¹ L.K. Jha, *North South Debate*, Chanakya Publications, Delhi, 1981.

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for a while, it eventually led to the high inflation and high unemployment of the late 1960s and 1970s. But policy principles changed after that turbulent period. In my view it was a move away from Keynes, perhaps one could say toward Adam Smith both at home and abroad, and we then had more than two decades of prosperity and enormous growth in much of the developed world, as well as India.

I should say, especially in light of the Platinum Jubilee, that Keynes recommended the creation of a central bank for India in his 1913 book, *Indian Currency and Finance*. Even if one has doubts about Keynesian macroeconomic remedies, his original ideas in monetary economics were sound, carefully reasoned with data and practical examples, and explicated clearly. This first book of his on Indian finance is an example, and I am happy to say that it too is very short.²

L.K. Jha's *Mr. Redtape* is about policy implementation.³ It shows how government fails when it loses sight of its objectives—which to Jha was serving the people. There is a story of how the Indian Civil Service (ICS) in 1958 wanted to exclude some lines on a memorial stone tablet being installed in Westminster Abbey in honour of those who served in the ICS. The first line of the plaque, which read, "Let them not be forgotten for they served India well," was approved by the ICS association. But the second line, which read "They walked humbly among the people," did not meet

their approval. In fact, they strongly opposed it, and in the end the quote was not included. It was an example of how the government can sometimes lose track of the people it is serving.

These two themes—policy principles and policy implementation—are the themes of my lecture today. I will first describe what, in my opinion, caused the recent financial crisis, and then draw lessons for economics and for economic policy in general and monetary policy in emerging market countries in particular. But since the crisis began in the developed world, I must start there and in particular in the United States.

I have been doing research on the financial crisis for a long time, at least since before the crisis flared up in 2007. My approach has been empirical. I wrote one of the first books⁴ on the crisis, and it's as short as those L.K. Jha books. I did not focus on who said what to whom when, however interesting and ultimately important that story is. Rather I looked at the timing of events and at data—interest rates, credit flows, money supply, housing starts, income, consumption—using statistical techniques from regressions to simple charts and focusing on what is amenable to economic analysis. I also tried to use the discipline of "counterfactuals," or stating what would have happened in the absence of certain events. Professor T.N. Srinivasan gives a good example of a counterfactual which is related to L.K. Jha. As you know L.K. Jha was the adviser to Prime Minister Lal Bahadur Shastri.

² J.M. Keynes, *Indian Finance and Currency*, Macmillan, London, 1913.

³ L.K. Jha, *Mr. Redtape*.

⁴ John B. Taylor, *Getting Off Track*, Hoover Press, Stanford, 2009.

Professor Srinivasan wonders whether, if Shastri had not died in office, L.K. Jha might have persuaded him to follow the kind of economic reforms which took place some twenty years later. If so, GDP might be more than it is now.

This analytical process has led to some strong conclusions. I divided my analysis of what went wrong in the crisis into separate questions: what started it, what prolonged it, what made it so severe during the fall of 2008. Recall that while the initial flare-up of the crisis occurred during the summer of 2007, it went on for more than a year and the culmination was the incredible panic that hit in September and October of 2008. For each question, I found that certain government actions and interventions came to the top of the list of what went wrong. There were other causes on the lists, of course, but the actions by government were either more important or were catalysts or prerequisites for the other causes.

Origins of the Crisis

In my view, the crisis was precipitated by monetary excesses. These excesses took the form of interest rates that were held too low for too long by the Federal Reserve and some other central banks. The low interest rates led to a housing boom which eventually ended in a bust and was a significant factor in the crisis. The low interest rates also were a probable factor in excessive risk-taking as people searched for higher yields.

I used a benchmark called the Taylor rule to measure the excesses. While I lose

some objectivity in using the Taylor rule, it does describe how monetary policy worked for nearly two decades of good economic performance in the United States in the 1980s and 1990s. The policy systematically sought to keep inflation down and to fend off boom-bust cycles. However, between 2003 and 2005 the interest rate was held usually low compared to the Taylor rule, and at levels that we had not seen since the turbulent 1970s. Of course, policy makers realised this; they were purposely deviating from the earlier policy, perhaps trying to prevent downside risks such as a Japanese style deflation.

You do not have to rely on the Taylor rule to come to this conclusion. Other analysts have looked at alternative measures, including that the real interest rate was negative for an unusually long time. I think there is growing agreement that an excessively easy monetary policy was a key factor leading to the boom and thus to the bust and the crisis. The housing bust had impacts on the financial markets as falling house prices lead to delinquencies and foreclosures.

I also tried to see if these low interest rates could be directly related to the housing boom. Here is where the counterfactual comes in. I built a model in which I related the federal funds rates to the housing market. I did a counter-factual simulation to find out what would have happened if rates were not held that low, but had followed the rule that we observed, roughly speaking, in the previous 20 years. My findings are that this severe boom would have been attenuated and, therefore, we would not have had the severe bust.

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It is important to note that the excessive risk taking and the low interest rate monetary policy decisions are connected. Delinquency rates and foreclosure rates are inversely related to housing price inflation during this period. During the years of the rapidly rising housing prices, delinquency and foreclosure rates declined rapidly. The benefits of holding onto a house, perhaps working longer hours to make the payments, are higher when the price of the house is rising rapidly. When prices are falling, the incentives to do so are much less and turn negative if the price of the house falls below the value of the mortgage. Hence, delinquencies and foreclosures rose.

Since mortgage underwriting programs take account of the actual realisations of foreclosure rates and delinquency rates in cross section data, the programs would have been overly optimistic during the period when prices were rising unless they took account of the time series correlation. Thus, there is an interaction between the monetary excesses and the risk-taking excesses. The rapidly rising housing prices and the resulting low delinquency rates likely threw the underwriting programs off track and misled many people.

Some have put forth alternative explanations for the origins of the crisis. One explanation is a global savings glut. I do not see this as a plausible explanation. Long-term interest rates are globally determined. No matter how you think about it, there was no global savings glut. Savings rates were high in some countries and low in other countries, but globally, savings rates were low. In order to argue that a savings glut occurred, one must show that desired saving was high relative to desired

investment, but these "desired" concepts cannot be measured very well.

Another critique of my analysis is that mortgages are based on long-term interest rates, while the Fed sets the short rate. However, over 30 percent of mortgages at that point were adjustable rate mortgages. In fact, there was a huge move into adjustable rate mortgages. That enabled the so called "teaser rates" which made the adjustable rate mortgages attractive to people. The Organisation for Economic Co-operation and Development (OECD) has done a study looking at countries that had relatively low interest rates using the Taylor rule measure. Generally speaking, those countries had a more serious housing boom.

While I focus on monetary policy, other government actions were probable factors. In the United States, the government sponsored agencies Fannie Mae and Freddie Mac were encouraged to expand and buy mortgage backed securities, including those formed with the risky sub-prime mortgages. Such actions should be added to the list of what went wrong.

The Year before the Panic

Why did the crisis last so long? The crisis was evident in the summer of 2007, when the money markets started behaving strangely. In particular interest rate spreads between three month LIBOR and the overnight federal funds rate jumped to unprecedented levels in August 2007 and remained high for over a year.

In addition to being a measure of financial stress, these interest rate spreads affect the transmission mechanism of

monetary policy to the economy because trillions of dollars of loans and securities are indexed to LIBOR. An increase in the spread, holding the overnight interest rate constant, will increase the cost of such loans and have a negative effect on the economy. Bringing this spread down therefore became a major objective of policy, as well as a measure of its success in dealing with the market turmoil.

I started researching this event as soon as I observed it. Using data on the interbank loan market, I tried to determine whether the flare-up was caused by a liquidity shortage or counterparty risk in the banking system due to defaults and expected defaults of securities on the bank's balance sheets. In other words, was the Fed providing inadequate liquidity or were banks unwilling to lend to each other? Counterparty risk did not seem plausible to many at the time, but that is the explanation my research led to. If you looked at measures of counterparty risk, it was clear that counterparty risk was the culprit. Today it seems obvious.

I believe that the policy makers misdiagnosed the problem, treating it as a shortage of liquidity rather than an increase in risk. As a result their policy interventions—and there were many—either delayed treatment or were harmful. For example, the Fed introduced a new term auction facility (TAF) in December 2007. With this facility banks could avoid going to the discount window if they needed to borrow. The aim of the TAF was to reduce the spreads in the money markets and thereby increase the flow of credit and lower interest rates. I found that the Fed's TAF

did not affect the interest rate spreads in the money markets.

There were other actions. The Fed cut rates sharply in the winter of 2007-2008. By my measure, again the Taylor rule, they overdid it. The result was some rapid dollar depreciation, and oil prices went up sharply, helping bring on the recession. Thus, I think that the government's initial reaction exacerbated the problem. Fiscal policy was also tried. The Economic Stimulus Act of 2008 was passed in February. This package sent cash totaling over \$100 billion to individuals and families in the United States; the hope was that they would have more to spend and thus jump-start consumption and the economy. Most of the checks were sent in May, June, and July 2008. As predicted by the permanent income theory of consumption, people spent little of the temporary infusion of cash, and consumption was not jump-started. Personal disposable income jumped at the time the checks were sent, but personal consumption expenditures did not increase. Formal statistical work shows that the effect was not significantly different from zero.

The Panic

Now let us consider the panic. Why did the crisis get so much worse in the fall of 2008? You need to go back to the Fed's intervention with the investment bank Bear Stearns in March 2008. Having worked in the U.S. Treasury during the emerging market crises and the 9/11 attacks, and having sat in rooms making decisions with little information and huge pressure, I sympathise tremendously with the decision

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makers during times of crisis. When it comes to the Bear Stearns operation, let us assume for the sake of argument that there was not much else people could have done than intervene. We can debate this, but let's take that decision as a given. In the aftermath of that decision, however, regulators should have tried to clarify the policy, telling people "Here is what we think is going on, and here is what we are trying to do." Instead, there was little discussion or explanation. It was reasonable to guess that the government would repeat its intervention into Bear Stearns with another firm, such as Lehman Brothers.

During the six months between the collapse of Bear Stearns and Lehman Brothers, regulators made little effort to articulate a strategy. It became increasingly obvious that things were *ad hoc*. Severe damage came with the realisation that there was really no policy at all. The rollout of the Troubled Asset Relief Program (TARP) scared people with the claims that they were confronting another Great Depression.

Understanding the events surrounding the Lehman bankruptcy is particularly important for assessing what went wrong. Many in government now argue that the cause of the panic in the fall of 2008 was the failure of the government to intervene and prevent the bankruptcy of Lehman. This view gives a rationale for continued extensive government intervention—starting the very next day with AIG—and to proposals for a more expansive resolution process, perhaps in the hands of a new systemic risk regulator. However, in my view, the problem was not the failure to bail out Lehman Brothers but rather the failure of the government to articulate a clear predictable

strategy for lending and intervening into a financial sector. This strategy could have been put forth in the weeks after the Bear Stearns rescue, but was not. Instead market participants were led to guess what the government would do in other similar situations. According to event studies of spreads in the interbank market or stock prices, the government intervention was a more likely reason for the panic than the failure to intervene with Lehman.

I am not saying that all the government's actions were inappropriate, because there were many things that had to be done by the time the panic was underway. Nevertheless, I believe that if government policy had been explained and had not scared everybody, then the panic would not have occurred, or certainly would not have been as bad. Now, more than a year after the fact and after I did my preliminary analysis, I believe this view remains correct.

Resiliency in Emerging Markets

The panic turned the ongoing recession in the United States into a great recession and spread quickly around the world. The major stock indices fell in tandem with the S&P 500. Consumers and businesses pulled back, largely out of fear. Exports and imports fell sharply throughout the world, with production declines accelerating as firms cut their inventories. The drop in exports was the major hit to emerging market economies. One cannot exaggerate the size and speed of this shock.

The big surprise, however, was the amazing resiliency of the emerging market countries including India in the face of these shocks. The contrast with the 1990s, when

emerging markets were suffering their own crises, was stark. For countries such as Brazil and Turkey which were in crisis as late as 2003, the difference was especially stark. Why were emerging markets 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 countries, and here Indian regulatory policy deserves special credit in discouraging such borrowing by Indian banks. They built up their foreign reserves so they could intervene in the case of a big shock like they received. They kept inflation relatively low and were more careful with public sector deficits.

How important were the special actions taken after the crisis, such as the Keynesian stimulus packages, in many countries? There is evidence that the impacts of the panic were bottoming out before the packages were implemented. If you look at indicators like investment orders, they stopped falling in December 2008 and January 2009, when people realised this was not a repeat of the Great Depression. Stock markets started moving up around the world in early March 2009. My research on the impact of the 2009 stimulus package in the United States shows that it was similar to that of the stimulus package of 2008. It had little impact. But more real-time research in the emerging market countries is needed to see if this is a broader finding.

What about Mistakes in the Private Sector?

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 excessive 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. The low interest rates led to rapidly rising housing prices with very low delinquency and foreclosure rates, which likely confused both underwriters and the rating agencies. The failure to regulate adequately entities that were supposed to be, and thought to be, regulated certainly encouraged the excesses. Risky off balance sheet operations connected to regulated banks were allowed by regulators. The U.S. Securities and Exchange Commission was to regulate broker-dealers, but its skill base was in investor protection rather than prudential regulation. Similarly, the U.S. Office of Thrift Supervision was not up to the job of regulating the complex financial products division of AIG. These regulatory gaps and overlapping responsibilities added to the problem and they need to be addressed in regulatory reform.

Implications for Economics

The financial crisis is generating a great deal of hand-wringing and debate among economists and others about the subject of economics. Last summer a cover of *The*

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Economist magazine showed a book titled "Modern Economic Theory" melting into a puddle to illustrate "What Went Wrong with Economics." It was the most talked about issue of the year.

Some economists are calling for a complete reformulation of economics – or for a return to a version of the subject popular thirty years ago. They say that economics failed to prevent the crisis or even led to it. Many of these economists have argued for a more interventionist government policy, saying that John Maynard Keynes was right and Milton Friedman was wrong. Paul Samuelson said in January of last year⁵ "today we see how utterly mistaken was the Milton Friedman notion that a market system can regulate itself... This prevailing ideology of the last few decades has now been reversed... I wish Friedman were still alive so he could witness how his extremism led to the defeat of his own ideas". Then Paul Krugman wrote an article⁶ faulting modern economics (especially modern macroeconomics and "rational expectations") for bringing on the crisis. He says it focused too much on beauty over practicality and did not recognise the need for more government intervention to prevent and cure the crisis. His fix is to add more psychology to economics or to build better models of credit.

My explanation of the financial crisis provides no evidence of a failure of modern economics. Rather the crisis vindicates the theory. The crisis was caused by a deviation

of policy from the type of policy recommended by modern economics. In the case of monetary policy it was an interventionist deviation from the type of systematic policy that was responsible for the remarkably good economic performance in the two decades before the crisis. Economists call this earlier period the Great Moderation because of the remarkably long expansions and short shallow recessions. In other words, the financial crisis gives us more evidence that interventionist government policies have done harm. The financial crisis did not occur because economic theory went wrong. It occurred because policy went wrong, because policy makers stopped paying attention to the economics.

Implications for Policy

This explanation of the crisis suggests that the emphasis should be on proposals to reduce the likelihood of government interventions and actions that led to the crisis. Going forward this means dealing with the very large budget deficits and rising government debt; scaling back or at least not adding more Keynesian stimulus packages; exiting as fast as possible from the extraordinary monetary policy actions which have questioned central bank credibility and threatened their independence; and ending the bailout mentality that will take governments further into the operations of private businesses.

Reform of financial regulation is clearly in order. Based on recent experience, closing present and future regulatory gaps and de-conflicting overlapping and ambiguous responsibilities would help reduce risk,

⁵ Interview in the *New Perspectives Quarterly*, Winter 2009.

⁶ *New York Times Magazine*, September 2009.

especially as new instruments and institutions evolve. Examining new instruments, looking for new risks and gaps, and making recommendations for changes in regulations by using the ideas from conferences like this one would also help.

Some have suggested the creation of a new systemic risk regulator, either at the national or international level. However, it is doubtful that such a systemic risk regulator would have prevented the current crisis. It would not have prevented the very low interest rates or the other government actions I have described in this lecture. Moreover, the experience during the panic of fall 2008 raises doubts that such an agency could resolve failing private institutions without causing more systemic risk. It would be helpful if it could warn about the major existing systemic risks, including the exploding debt, central banks' balance sheet, and the bailout mentality. But groups such as the Financial Stability Board, working along with the IMF and G20, are better suited to that role.

Another suggestion is that central banks, including emerging market central banks – take actions to burst market bubbles in financial or other markets. I do not think that is a good idea. First, the lags in the effect of monetary policy will likely mean that the impact of policy will be its greatest when the bubble is bursting only adding to the damage. Second, the problem in the current crisis was not that central banks failed to burst bubbles but rather that they created them. If interest rates had not been held so low and we still had bubbles then such a proposal might have merit. But that is not what happened.

Yet another reform, recently suggested by the IMF research department, is that central banks should raise their inflation targets. The reason is that with the two percent target in policy rules such as the Taylor rule the interest rate would have to go negative in a severe crisis, and this is not possible. But in the current crisis, the Taylor rule has interest rates going close to zero and not remaining there for long. Moreover, raising inflation targets – especially when government debts are rising and central banks' balance sheets are expanded – could easily reduce credibility about an inflation target at all, further damaging central bank credibility. This would be especially inappropriate for central banks in emerging market countries.

For the most part, the policy implications of the crisis are that those central banks that deviated from good policy should get back to what they were doing before the crisis. They need to earn back credibility and preserve their independence. Systematic monetary policies focusing on a credible goal for inflation worked well in the past and they will work well in the future. For central banks that were following sounder policies – and here credit should be given to the progress made in India and other emerging market central banks – they should continue to do so. There is no reason to change.

But the crisis does reveal some potential new fault lines, largely related to the increased globalisation and international connection between financial markets, which was so evident during the panic. These interconnections raise questions about the impact of central banks on each other. In the period leading up to the crisis

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there is evidence that the European Central Bank and other central banks held interest rates lower than they would otherwise be because the Federal Reserve set its interest rate so low. The reason, of course, is the exchange rate. A large gap between interest rates would cause the exchange rate to appreciate with adverse consequences on exports. And during the panic the shock from the developed world on the developing world was severe and central banks had to cope with this.

Is there a better way? Making the movements in the interest rates less erratic in the developed countries would help the emerging market countries. I note that for the most part deviations from policy rules, such as the Taylor rule, have increased interest rate volatility, so keeping interest rates more on track will have the added advantage of reducing their erratic nature. Another possibility, which I recommended before the crisis, is that we think about a global target for the inflation rate, or at least a multi-country target, a G20 target perhaps. If there was a multi-country target and this was at least considered in the deliberations of each central bank then there would be a smaller tendency to swing individual interest rates around by large amounts.

Conclusion: Keynes and Smith Again

Getting the narrative about the financial crisis right is very important. A view frequently heard now is that "the markets did it." The crisis was due to forces emanating from the market economy which the government did not control, either because it did not have the power to do so,

or because it chose not to because of the influence of economic theories which emphasised the advantages of free markets. This view sees the crisis as a market failure that can and must be dealt with by government actions and interventions. The economic theories and the policies implied by them must change.

The view put forth in this lecture is that largely the opposite is true. The crisis was due more to forces emanating from government. According to this view government interventions caused, prolonged, and worsened the financial crisis and did relatively little to pull us out of it. This view sees government as the more serious systemic risk in the financial system; it leads in a different direction—to proposals to get back to what was working before policy changed and caused the crisis.

In conclusion recall L. K. Jha's phrase which I opened with. It was a policy of "Keynes at home and Adam Smith aboard" that eventually led to the poor macroeconomic performance in the 1970s. When most countries moved to "Adam Smith both at home and abroad," the twenty year wave of progress and stability was unprecedented. Leading up to this recent crisis and during it we let "Keynesian policies" creep back in and ironically we seem to be going down the path now of "Keynes both at home and abroad." In my view, if we learn the lessons from this crisis, we should get back to "Adam Smith at home and abroad" as soon as possible. Of course we cannot go completely back home again. The world is different. Policy, including monetary policy, needs to adapt this approach to deal with increased globalisation.