The World Turned Upside Down: Economic Policy in Turbulent Times

MERVYN KING



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The Per Jacobsson Foundation

About the Per Jacobsson Lecture

The 2019 Per Jacobsson Foundation Lecture, "The World Turned Upside Down: Economic Policy in Turbulent Times," was presented by Mervyn King, former Governor of the Bank of England on October 19, in Meeting Halls A&B of the IMF's Headquarters 1 Building in Washington, DC, in the context of the Annual Meetings of the International Monetary Fund and the World Bank Group. The event was moderated by Per Jacobsson Foundation Chair Guillermo Ortiz.

The Per Jacobsson Foundation was established in 1964 to commemorate the work of Per Jacobsson (1894-1963) as a statesman in international monetary affairs. Per Jacobsson was the third Managing Director of the IMF (1956-63) and had earlier served as the Economic Adviser of the Bank for International Settlements (1931-56). Per Jacobsson Foundation lectures and contributions to symposia are expressions of personal views and intended to be substantial contributions to the field in which Per Jacobsson worked. They are distributed free of charge by the Foundation. Further information about the Foundation may be obtained from the Secretary of the Foundation or may be found on the Foundation's website (www.perjacobsson.org).

Opening Remarks

GUILLERMO ORTIZ

Good afternoon. First allow me to welcome the President of the Per Jacobsson Foundation, David Lipton, and the Vice President and Secretary of the Per Jacobsson Foundation, Kate Langdon. By the way, I'm Guillermo Ortiz. I'm the Chairman of the Foundation. And I'm very pleased to welcome you to this lecture.

Today, I am honored to introduce our speaker—a good friend—Lord Mervyn King, former Governor of the Bank of England. He will present us a lecture entitled: "The World Turned Upside Down: Economic Policy in Turbulent Times," a very appropriate subject.

Mervyn has had an extremely distinguished career, both as a policymaker and an academic. During his tenure as Governor of the Bank of England, he was also Chairman of the Monetary Policy Committee from 2003 to 2013. He introduced inflation targeting as a cornerstone of the U.K. monetary policy and helped popularize this in the central banking community.

And I remember this well, because back in those years, in 2002 and 2003, we also introduced inflation targeting at Banco de México. We've had many lively discussions on the subject.

Prior to this, Mervyn King was a Deputy Governor from 1998-2003, Chief Economist and Executive Director from 1991, and then Executive Director of the Bank from 1990-91. He was knighted GBE in 2011, made a Life Peer in 2013, and appointed by the Queen to be a Knight of the Garter in 2014.

As I mentioned before, Mervyn also had a very distinguished career in academia. Currently, he's the Alan Greenspan Professor of Economics and Professor of Law at New York University; and School Professor of Economics at the London School of Economics.

He is a Fellow of the British Academy, an Honorary Fellow of Kings in St. Colleges in Cambridge, and holds many honorary degrees from universities in Europe, and all over the place, so I will not name them, because we'll spend too much time.

Mervyn has studied at King's College, Cambridge; and Harvard as a Kennedy Scholar. He taught at Cambridge and Birmingham Universities before serving as a Visiting Professor at both Harvard and MIT.

He was also Professor of Economics at the London School, back in the 1980s, where he founded the Financial Markets Group.

In 2016, he published *The End of Alchemy*, which has been translated into several languages. And together with John Kay, Mervyn will release a book next year that I'm sure we are all eager to read.

So, let me please welcome Mervyn to the podium, so we can all listen to his lecture.

The World Turned Upside Down: Economic Policy in Turbulent Times

INTRODUCTION

Chairman, ladies, and gentlemen. Good afternoon. Chairman, thank you for that kind introduction; you are the latest in an extremely distinguished line of chairmen of the Per Jacobsson Foundation.

I feel privileged today to honor the memory of a great international public servant. In the early years of the Bank for International Settlements, Per Jacobsson wrote its annual report, establishing a tradition of intellectual rigour and policy relevance to that report which continues to the present. As Managing Director of the IMF, he personified its true role as "trusted advisor" to governments. So tonight, I want to offer a little advice of my own to those entrusted with economic policy in turbulent times.

This year, we celebrated the 75th anniversary of the founding of the Bretton Woods institutions and this weekend you are all participating in their Annual Meetings. But it is no time to celebrate. A decade ago, we thought the banking crisis was over—with the recapitalization of the largest global banks—and that the recovery already visible in emerging economies would soon spread to the industrialized world. That recovery has proved frustratingly slow, and no sooner do we think we are on track to "normalize" than new obstacles appear. This week the IMF revised down its estimate of world growth both this year and next. And every data release seems to bring gloomy news.

Before the financial crisis, the world economy grew at over 4 percent a year almost one year in two. Since the immediate bounce back from the Great Recession of 2008-09, there has not been a single year in which the world economy has grown by more than 4 percent. Relative to GDP, global debt is higher today than in 2007. If the problem before the crisis was too much borrowing and too much spending, then the problem today is too much borrowing and too little spending. The world economy is stuck in a low growth trap.

Following the Great Depression, there was a period of intellectual and political upheaval. First, Keynesian and then rational expectations revolutions altered our views on economic policy. No one can doubt that we are once more living through a period of political turmoil. But there has been no comparable questioning of the basic ideas underpinning economic policy. That needs to change.

The economic and political climate has rarely been so fraught. Ripples on the surface of our politics have become breaking waves as the winds of change have gained force. Trade disputes between the United States and China, riots in Hong Kong, the fall from grace of several important emerging economies in Turkey, Argentina, and Brazil—not to mention the complete collapse of Venezuela—all remind us of the fragile nature of our world today. The European election results in May and growing tensions between France and Germany over the future direction of the euro area should shake the complacency among European elites. In addition, politicians in the United States have been turning inward in an increasingly divisive political conflict, just as the *Pax Americana*, the mainstay of the postwar world, is slowly disappearing.

Earlier this year, a new sculpture entitled "The World Turned Upside Down" was unveiled outside the London School of Economics.¹ It is a large globe which has been inverted so that one can immediately see, as one cannot from the conventional Mercator's projection in two dimensions, the true size of Africa and Latin America, and the vastness of the oceans. This sculpture serves as a metaphor for my theme today—namely, that the conventional way of looking at things has misled us in both the diagnosis of, and the prescription for, our current economic problems.

Central banks, and the economics profession more widely, see their models as descriptions of the world. But this exaggerates the extent of our knowledge, especially in a world of radical uncertainty where we simply do not know what might happen next. Models are neither right nor wrong, but helpful or unhelpful. In present circumstances, I am going to argue that key features of standard models are unhelpful in two important areas of economic policy, namely getting the world economy out of its low growth trap and preparing for the next financial crisis.

http://www.lse.ac.uk/News/Latest-news-from-LSE/2019/03-Mar-19/LSE-unveils-new-sculptureby-Mark-Wallinger.

INTEREST RATES AND GLOBAL RECOVERY

Following the global financial crisis, we drew comfort from the fact that in the industrialized world, apart from southern Europe, unemployment never reached the levels experienced during the Great Depression when unemployment in the United States was over 14 percent for an entire decade, reaching a peak of 25 percent. By contrast, during the Great Recession, US unemployment peaked at 10 percent in 2009 before steadily falling back to 3½ percent, the lowest rate for 50 years. For this reason, we can claim that a repetition of the Great Depression was averted.

But there is another way of looking at the economic performance of the past decade. Imagine that in 1930, an observer looked back at the growth of the US economy since the turn of the twentieth century and noted that output per head had grown at an average rate of around 2 percent a year. They might then have projected forward GDP per head to 1950. Within a few years that benchmark would have looked unattainable as output fell by 30 percent in the early 1930s. Yet by 1951, GDP per head had recovered to the level that would have been projected 20 years earlier. Although significant resources had been lost in the interim, output was now back on its previous trend path.

Now consider what has happened since 2008. Using the IMF *World Economic Outlook* projection for the United States through 2024, we might ask at what rate GDP per head in the United States would have to grow from 2024 in order to regain its previous trend path by 2028? The answer is 5½ percent a year.² That is a tall order, and without growth at that improbable rate we will be worse off relative to precrisis expectations than was the case 20 years after the Great Depression. Following the Great Inflation, the Great Stability, and the Great Recession, we have entered the Great Stagnation. Six years ago, at the IMF, Larry Summers re-introduced the concept of secular stagnation to economic debate.³ It is surely now time to admit that we are experiencing it.

² Using data on GDP per head at constant prices from the IMF April 2019 World Economic Outlook database. The updated database for October 2019 would, if anything, raise the required growth rate from 2024 through 2028.

³ Larry Summers (2013), https://larrysummers.com/imf-fourteenth-annual-research-conference-in-honor-of-stanley-fischer/. See also Hans-Werner Sinn (2009), https://www.project-syndicate.org/commentary/forget-inflation. For a more technical analysis of secular stagnation in a New Keynesian rather than an expectations-driven model, see Eggertson, G.B., N.R. Mehrotra, and J.A. Robbins. 2017. "A Model of Secular Stagnation: Theory and Quantitative Evaluation." NBER Working Paper 23093, National Bureau of Economic Research, Cambridge, MA.

In terms of the failure to meet reasonable expectations, it does not really matter whether the source of this secular stagnation stems from supply or demand. But if we are to escape the low growth trap, the diagnosis of the phenomenon is relevant. Conventional wisdom attributes the stagnation largely to supply factors as the underlying growth rate of productivity appears to have fallen. But data can be interpreted only within a theory or model. And it is surprising that there has been so much resistance to the hypothesis that, not just the United States, but the world as a whole is suffering from demand-led secular stagnation. That resistance stems, I believe, from adherence to a particular model of how monetary policy operates. In this model, the economy grows at some exogenous rate on which is superimposed random shocks—"headwinds" or "tailwinds"—which are also exogenous and unobservable. Weakness of growth reflects either a fall in underlying growth potential or an unusually persistent negative shock. The return to an equilibrium path is hindered by frictions of various kinds, and the role of monetary and fiscal policy is to accelerate that return.

But this model—ubiquitous in the analysis of stabilization policy—is not helpful in today's circumstances.⁴ Why not? Because we entered and departed the global financial crisis with a distorted pattern of demand and, hence, output. National saving ratios were too low in some countries and too high in others. Normally, we might expect changes in prices and interest and exchange rates to correct this disequilibrium. But this is where expectations enter the picture. The investment required to stimulate production in those sectors that could support sustainable growth is held back by extreme uncertainty about future prices. Producers cannot meet future consumers in the marketplace, separated as they are by time and space. In the language of economic theory, a world of incomplete Arrow–Debreu contingent futures markets means that there is no mechanism for supply and demand to interact in order to make expectations of future prices and production consistent with steady growth.

Closer in spirit to the interpretation in this lecture is Rachel, L. and L.H. Summers. 2019. "On Secular Stagnation in the Industrialized World." NBER Working Paper 26198, National Bureau of Economic Research, Cambridge, MA.

⁴ See the discussion of a "narrative revision downturn" in chapter 8, King, M.A. 2016. The End of Alchemy: Money, Banking, and the Future of the Global Economy. New York: W.W. Norton. .

With extreme uncertainty, expectations are a dragging anchor on spending.⁵ The notion that a market economy is self-stabilizing is misleading.

This is a story of a demand-led secular stagnation driven by uncertainty and incomplete markets. And who can deny that uncertainty is at unusually high levels? Political turbulence, disputes over trade that could last for years, the disagreement within Europe over the basic structure of a monetary union—all these have contributed to uncertainty that may not be resolved quickly. The new IMF index of trade uncertainty has risen very sharply over the past year after 20 years of broad stability at low levels; the index of global economic policy uncertainty produced by Baker, Bloom, and Davis has reached record levels, and is higher today than during the financial crisis; and the BlackRock geopolitical dashboard shows that policy risks are the highest for years and greater than at the peak of the eurozone crisis. In such an environment, we would expect that a secular stagnation of investment spending would persist, and that is exactly what has been happening.

Escaping from this low growth trap is a different proposition than climbing out of a Keynesian downturn and requires different remedies. In a Keynesian downturn during a conventional business cycle, the aim is to boost aggregate demand. Temporary monetary or fiscal stimulus restores demand to its trend path and can then be removed. We are not overly worried about which components of demand respond to the stimulus. But to escape permanently from a low growth trap involves a *reallocation of resources* from one component of demand to another, from one sector to another, and from one firm to another.

⁵ The assumption of incomplete Arrow-Debreu contingent commodity markets is at the heart of the Keynesian proposition that low demand can be a persistent phenomenon. Rational expectations cannot help us here. The concept of rational expectations is a sensible approach to modelling in order to avoid conclusions from being drawn from arbitrary assumptions. But rational expectations are helpful only insofar as the model itself is relevant. The standard model of monetary policy misses the essence of how secular stagnation can persist.

⁶ The IMF index is at https://blogs.imf.org/2019/09/09/new-index-tracks-trade-uncertainty-across-the-globe/. The Baker, Bloom, and Davis index is at https://www.policyuncertainty.com/. The BlackRock geopolitical risk dashboard is at https://www.blackrock.com/corporate/insights/blackrock-investment-institute/interactive-charts/geopolitical-risk-dashboard.









There has been excess investment in some parts of the economy—the export sector in China and Germany and commercial property in other advanced economies, for example—and insufficient in others—infrastructure investment in many western countries. To bring about such a shift of resources—both capital and labor—will require a much broader set of policies than simply monetary stimulus. And where there is excess capacity, it will also imply writing down asset values on the balance sheets of both industrial and financial companies to more realistic levels. That will require, given today's high debt levels, the recapitalization of some financial intermediaries in some countries.

It is the failure to face up to the need for action on many policy fronts that has led to the demand stagnation of the past decade. And without action to deal with the structural weaknesses of the global economy, there is a risk of another financial crisis, emanating this time not from the US banking system, but from weak financial systems elsewhere.

Much current debate is focused on whether monetary policy has sufficient room and sufficient power to counter a new economic downturn. Among many politicians, there is an ingrained belief that "monetary activism" is the answer to sluggish economic growth. There are times, such as 2008-10, when activism is, indeed, appropriate. But far more urgent is the question of which set of policies will support the reallocation of resources necessary to escape today's low growth trap. The answer goes well beyond monetary and fiscal policies to include exchange rates, supply-side reforms, and measures to correct unsustainable national saving rates.

Take Europe as one example. Further monetary easing, and a weaker euro, may be supportive of a recovery in the south, but it will further distort the structure of economies in the north. Until France and Germany can resolve their differences over structural reforms to the monetary union, monetary stimulus on an even larger scale is not just papering over the cracks, but widening those cracks. I am tempted to say that the only advice one could give a new President of the European Central Bank is to stay in Washington!

⁷ The phrase "monetary activism" does not appear in any central bank mandate and often means that politicians would like central banks to undertake quasi-fiscal actions for which they, and not politicians, would be held accountable. This view shows a disregard for the nature of institutions and their legislative mandate.

Certainly, the IMF has a potentially important role to encourage global cooperation—not formal coordination, but a common move toward an escape from the low growth trap through the adoption of country-specific policies to reallocate resources; and joint agreements on ways of coping with debt reductions to forestall a financial crisis. Most important of all, the IMF could help foster a private but challenging debate among policymakers about the merits of today's conventional wisdom.

FIREFIGHTING AND ACCESS TO CENTRAL BANK LIQUIDITY

Let me turn now to how we might deal with another financial crisis and make a case for new thinking here too.

The last financial crisis led to the Great Stagnation and was obviously costly in terms of lost output. But it was also expensive in financial terms. A recent IMF study found that the cost of interventions, including guarantees, to support financial institutions between 2007 and 2017 in 37 countries amounted to \$3.5 trillion.8 It is hardly surprising, therefore, that such interventions have proved highly unpopular. Yet, without them, the financial system and the wider economy would have collapsed.

It is no accident that the recent book by Ben Bernanke, Tim Geithner, and Hank Paulson—the three musketeers responsible for saving the American banking system—is titled *Firefighting*. Confronted with a conflagration of extraordinary proportions, they hosed the financial fire with unprecedented injections of liquidity to prevent it spreading. And the use of overwhelming force became a guiding principle of crisis management.

But if that principle means that in a crisis all debt issued by the financial sector must be guaranteed by the government, that is, by the rest of us, then it is not enough to worry that in the future the Fed or other central banks will be limited in their ability to provide such guarantees.

⁸ Igan, Deniz, Hala Moussawi, Alexander F. Tieman, Aleksandra Zdzienicka, Giovanni Dell'Ariccia, and Paolo Mauro. 2019. "The Long Shadow of the Global Financial Crisis: Public Interventions in the Financial Sector." IMF Working Paper 19/164, International Monetary Fund, Washington, DC.

Instead, we must construct a political settlement under which we accept that in a crisis, liquidity is created to douse the fire in return for some limit on the extent of maturity transformation that is created by the private sector. In essence, I am arguing for a tax on maturity transformation.

My concern today is not the mechanism of such a scheme-I have written on that in my book, The End of Alchemy, where I argue for a scheme of prepositioned collateral related to the maturity transformation of the individual financial institution. Rather, it is the imperative of putting in place an ex ante framework for the provision of central bank liquidity to douse a fire. I say this for two reasons. First, it is impossible to know when a small fire that should be allowed to burn and extinguish one or more institutions turns into a conflagration that threatens the entire system. That judgement was a problem during the crisis for all of us-even the three musketeers who initially said no to firms that asked for help. 10 They did not provide assistance to Countrywide, the US equivalent of the British bank, Northern Rock. And they faced major problems in saving Lehman Brothers because lending against inadequate collateral makes no sense. If an agreed ex ante framework with prepositioned collateral had been in place, the problem would not have arisen.

Second, in a crisis it is too late to create political legitimacy for the necessary emergency responses. Congress has placed fetters on the ability of the Treasury and the Fed to fight the next crisis—the wheels of some of the fire engines have been dismantled. We should not be surprised that it has done so because the actions taken during the crisis were not part of an armory agreed with Congress beforehand. As former Fed and other officials have said, these restrictions on the Fed are undesirable. But they will be removed only in the context of a clear *ex ante* framework that makes banks and other institutions that engage in maturity transformation part of an insurance scheme that is accepted as fair.

The role of the central bank as "Pawnbroker For All Seasons" is described in chapter 7 of King, M.A. 2016. The End of Alchemy: Money, Banking, and the Future of the Global Economy. New York: W.W. Norton.

See also related ideas in Kent, C. 2019. "The Committed Liquidity Facility." Address to Bloomberg, 23 July 2019, which describes the Australian alternative to liquidity regulation, and the proposals by William Nelson of the Bank Policy Institute for commercial bank access to a standing Fed facility.

Bernanke, B.S., T.F. Geithner, and H.M. Paulson Jr. 2019. Firefighting: The Financial Crisis and Its Lessons, pps. 33 and 39. New York: Penguin Books.

Insurance payouts are more likely to be acceptable than bailouts. The political economy of "bailing out" banks would be much improved if we could show that banks had subscribed in good times to an insurance scheme which entitled them to borrow in bad times. Without an agreed framework, in the next crisis, Hank Paulson's successor will once again be kneeling in front of Nancy Pelosi–I assume she will still be there—asking Congress to rescind the legislation that has restricted the Fed's powers.

As all financial firefighters discovered, only a solvent government, through its central bank, can create the liquidity demanded in a crisis. It follows that it is impossible to design a regime for liquidity regulation without its being properly integrated into the design of central bank liquidity provision. Radical uncertainty means that we cannot be confident that particular assets will prove to be liquid in some future crisis. Better to replace that regulation by an insurance scheme that ensures that all runnable liabilities are covered.

Unfortunately, the response to the crisis has been a combination of excessively detailed regulation, on the one hand, and a plea for greater freedoms for firefighters, on the other. Complex regulation imposes unnecessary costs of compliance and gives a false impression of the security of the banking system. And the absence of an agreed ex ante framework for firefighting requires a commitment to use almost unlimited resources without political authority for the necessary actions.

Now is the time for the Federal Reserve and other central banks to begin behind-closed-doors discussions with legislators to make the latter realize how vulnerable they will be in the event of a future crisis. Congress would be confronted with a choice between financial Armageddon and a suspension of some of the rules that were introduced after the last crisis to limit the ability of the Fed to lend. It is time for some new thinking about the lender of last resort function.

CONCLUSIONS

Through the twin issues of current economic stagnation and the search for a framework to deal with banking crises run two common themes. First, radical uncertainty means we should not place excessive reliance on models that assume knowledge we cannot possess, whether of the response of the economy to changes in economic policy or the numerical calibration of risk weights. As John Kay and I argue in our forthcoming book, *Radical Uncertainty*, the focus of policy design should be on robustness and resilience.¹¹

Second, democratic legitimacy of policy actions derives from careful institutional design of *ex ante* mechanisms. Central bank independence was granted by legislatures to achieve certain objectives. The same principle should apply to policies for dealing with financial crises.

In 2005, at the annual Jackson Hole Symposium, I extended the traditional definition of price stability when I said that, "economic policy stability is best thought of as an environment in which the decisions of households and firms are not materially affected by the need to insure against future arbitrary or mischievous changes in government policy." Today, the world has been turned upside down and is a turbulent place. A market economy cannot flourish if policymakers behave in ways that lead private-sector agents to expect future economic policies to be subject to arbitrary or capricious changes.

In turbulent times, expectations really matter. Radical uncertainty is weighing on investment and growth across the world and there is simply no way of knowing from where the next financial crisis will come. Radical uncertainty pervades the outlook for world trade, the future structure of the European monetary union, the rewriting of Britain's unwritten constitution, the rebalancing of the Chinese economy, economic policies across Latin America, the potential population explosion in Africa, and that is not even to mention the Middle East.

¹¹ Kay, J.A. and M.A. King. Forthcoming. *Radical Uncertainty*. New York: W.W. Norton.

To whichever parts of the world a firm exports, and from whichever part of the world it imports, there is no market in which to lay off the risks that result from such uncertainties. The price signals that might encourage productive and sustainable investments are invisible when markets contingent on all these possible outcomes do not, and could not, exist. That is why a market economy, although by far the best means we have discovered for promoting prosperity, does not have self-stabilizing properties. And when the world economy is stuck, as I believe it is, in a low growth trap, then even national policies may struggle to restore the profitability of private investment.

Those were the conditions in which the Bretton Woods institutions were set up and they are the conditions in which multilateral institutions are needed today to encourage cooperation among nations to find a way back to a path of sustainable growth that meets the aspirations of so many who today feel left out. That task will require intellectual imagination and ingenuity.

The failure of conventional models to capture the reasons for weak growth of the world economy and the failure to establish a proper ex ante framework for the provision of central bank liquidity in a crisis, reflect an intellectual and political unwillingness to challenge the conventional wisdom. Seventy-five years ago, the IMF was borne out of a commitment to radical reforms to the international financial system. At Bretton Woods, half a century of global conflict was a powerful incentive to contemplate something new. Is not a global financial crisis followed by more than a decade of secular stagnation sufficient to persuade economists and politicians to be equally radical?

Another economic and financial crisis would be devastating to the legitimacy of a democratic market system. By sticking to the new orthodoxy of monetary policy and pretending that we have made the banking system safe, we are sleep-walking toward that crisis.

According to his biography, Per Jacobsson "believed firmly that intelligent, practical people, if they are well and fully informed, will take the right decision." But there are times, and perhaps we are living through them, when it is more important to challenge the conventional wisdom. "The World Turned Upside Down" was an English ballad published in 1646 as a protest against the attempt by Parliament to impose on the people an austere and unpopular version of Christmas. Successful elites, even Parliaments, not only listen to popular concerns; they are open to new ways of thinking about problems.

Let me leave you with these words of John Maynard Keynes (from the Preface to *The General Theory*):

"The difficulty lies, not in the new ideas, but in escaping from the old ones."

¹² http://www.perjacobsson.org/bio.htm.



LORD KING OF LOTHBURY, KG, GBE, FBA

Mervyn King served as Governor of the Bank of England from 2003 to June 2013. He was knighted (GBE) in 2011, made a life peer in 2013, and appointed by The Queen to be a Knight of the Garter in 2014.

Lord King is the Alan Greenspan Professor of Economics and Professor of Law at New York University and Emeritus Professor of Economics at the London School of Economics.

In 2016 he published *The End of Alchemy*. With a new preface, it appeared in paperback in 2017, and has been translated into many languages. His new book (with John Kay) *Radical Uncertainty* will appear in 2020.

Born in 1948, Mervyn King studied at King's College, Cambridge, and taught at Cambridge and Birmingham Universities before spells as Visiting Professor at both Harvard University and MIT. From October 1984, he was Professor of Economics at the London School of Economics, where he founded the Financial Markets Group.

The Per Jacobsson Lectures

2018 Is There a New Orthodoxy for Monetary Policy? Per Jacobsson panel—moderated by Ravi Menon, Managing Director, Monetary Authority of Singapore with Veerathai Santiprabhob, Governor of the Central Bank of Thailand, Perry Warjiyo, Governor, Bank Indonesia and Nor Shamsiah Mohd Yunus, Governor of Bank Negara Malaysia, Bali, Indonesia October 13, 2018.

The Real Effects of Disrupted Credit: Evidence from the Global Financial Crisis. Per Jacobsson Lecture by Ben Bernanke, former Chair of the Federal Reserve, US Board of Governors, on the occasion of the BIS Annual General Meeting, Basel, June 24, 2018.

- **2017** Economic and Financial Issues Related to the Impact of Climate Change. Panel discussion with Mark Carney, Maureen Cropper, Ashley Schulten, and Nicholas Stern, moderated by Pilita Clark.
- **2016** Are We Safer? The Case for Strengthening the Bagehot Arsenal. Lecture by Timothy F. Geithner.

Reflections on Central Banking: What Is It All About? Lecture by Jacob Frenkel (Basel).

- **2015** Latin America: Outlook and Challenges Ahead. Panel discussion with Carmen M. Reinhart, Rodrigo Valdés, and Julio Velarde (Lima).
- **2014** The Federal Reserve and the Global Economy. Lecture by Stanley Fischer.

Managing Financial Crisis in an Interconnected World: Anticipating the Mega-Tidal Waves. Lecture by Zeti Akhtar Aziz (Basel).

2013 Central Banking in the Crisis: Conceptual Convergence and Open Questions on Unconventional Monetary Policy. Lecture by Jean-Claude Trichet.

2012 China's Monetary Policy Since the Turn of the Century. Lecture by Zhou Xiaochuan (Tokyo).

Society, Economic Policies, and the Financial Sector. Lecture by Y. V. Reddy (Basel).

2011 The IMF and the International Monetary System: Lessons from the Crisis. Lecture by Axel A. Weber.

What Financial System for the Twenty-First Century? Lecture by Andrew Crockett (Basel).

2010 Navigating the New Normal in Industrial Countries. Lecture by Mohamed A. El-Erian.

Markets and Government Before, During, and After the 2007-20XX Crisis. Lecture by Tommaso Padoa-Schioppa (Basel).

- **2009** Growth After the Storm? A Longer-Run Perspective. Lecture by Kemal Dervis (Istanbul).
- **2008** The Role and Governance of the IMF: Further Reflections on Reform. Symposium panelists: Stanley Fischer, Trevor Manuel, Jean Pisani-Ferry, and Raghuram Rajan.

The Approach to Macroeconomic Management: How It Has Evolved. Lecture by Lord George (Basel).

- **2007** Balance of Payments Imbalances. Lecture by Alan Greenspan.
- **2006** Asian Monetary Integration: Will It Ever Happen? Lecture by Tharman Shanmugaratnam (Singapore).

Competition Policy and Monetary Policy: A Comparative Perspective. Lecture by Mario Monti (Bern).

- **2005** International Financial Institutions: Dealing with New Global Challenges. Lecture by Michel Camdessus.
- **2004** The US Current Account Deficit and the Global Economy. Lecture by Lawrence H. Summers.

Some New Directions for Financial Stability? Lecture by C.A.E. Goodhart, CBE (Zurich).

- The Arab World: Performance and Prospects. Lecture by Abdlatif Yousef Al-Hamad (Dubai).
- The Boom-Bust Capital Spending Cycle in the United States: Lessons Learned. Lecture by E. Gerald Corrigan.
 - Recent Emerging Market Crises: What Have We Learned? Lecture by Guillermo Ortiz (Basel).
- No lecture took place due to the cancellation of the Annual Meetings of the IMF and the World Bank.
- Ten Years On–Some Lessons from the Transition. Lecture by Josef Tošovský (Prague).
 - Strengthening the Resilience of Financial Systems. Symposium panelists: Peter B. Kenen, Arminio Fraga, and Jacques de Larosière (Lucerne).
- 1999 The Past and Future of European Integration—A Central Banker's View. Lecture by Willem F. Duisenberg.
- Managing the International Economy in the Age of Globalization. Lecture by Peter D. Sutherland.
- Asian Monetary Cooperation. Lecture by Joseph C.K. Yam, CBE, JP (Hong Kong SAR).
- Financing Development in a World of Private Capital Flows: The Challenge for International Financial Institutions in Working with the Private Sector. Lecture by Jacques de Larosière.
- *Economic Transformation: The Tasks Still Ahead.* Symposium panelists: Jan Svejnar, Oleh Havrylyshyn, and Sergei K. Dubinin.
- Central Banking in Transition. Lecture by Baron Alexandre Lamfalussy (London).
 - Capital Flows to Emerging Countries: Are They Sustainable? Lecture by Guillermo de la Dehesa (Madrid).
- Latin America: Economic and Social Transition to the Twenty-First Century. Lecture by Enrique V. Iglesias.
- A New Monetary Order for Europe. Lecture by Karl Otto Pöhl.

- The Road to European Monetary Union: Lessons from the Bretton Woods Regime. Lecture by Alexander K. Swoboda (Basel).
 - Privatization: Financial Choices and Opportunities. Lecture by Amnuay Viravan (Bangkok).
- The Triumph of Central Banking? Lecture by Paul A. Volcker.
- Promoting Successful Adjustment: The Experience of Ghana. Lecture by J.L.S. Abbey.
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The World Turned Upside Down: Economic Policy in Turbulent Times