

International
Symposium

**REGULATION
IN THE FACE
OF GLOBAL IMBALANCES**

MARCH 2011

CONTENTS

(Participants titles are at the time of the Symposium)

CONTRIBUTORS		5
OPENING SPEECH	Christian NOYER, Governor, Banque de France	19
SESSION 1	WHAT IMBALANCES AFTER THE CRISIS?	21
Chairperson:	Axel WEBER, President, Deutsche Bundesbank	23
Speakers:	Franklin ALLEN, Professor, Wharton School, University of Pennsylvania	25
	Jacob A. FRENKEL, Chairman, Group of Thirty, Chairman, JPMorgan Chase Intl.	32
	Pierre-Olivier GOURINCHAS, Professor, University of California, Berkeley	36
	Kenneth ROGOFF, Professor, Harvard University	41
	Nouriel ROUBINI, Professor, Stern School of Business, New York University	44
SESSION 2	THE CHALLENGES OF SURVEILLANCE AND COORDINATION	49
Chairperson:	Mario DRAGHI, Governor, Banca d'Italia, Chairman, Financial Stability Board	51
Speakers:	Lorenzo BINI SMAGHI, Member of the Executive Board, European Central Bank	54
	Olivier BLANCHARD, Economic Counsellor, International Monetary Fund	63
	Choongsoo KIM, Governor, Bank of Korea	66
	Olli REHN, Member of the European Commission for Economic and Monetary Affairs	70
SESSION 3	THE ROLE OF CENTRAL BANKS: LESSONS FROM THE CRISIS	73
Chairperson:	Michel CAMDESSUS, Managing Director, International Monetary Fund (1987-2000)	75
Speakers:	Charles A. E. GOODHART, Professor Emeritus, London School of Economics	77
	José DE GREGORIO, Governor, Central Bank of Chile	80
	Olivier JEANNE, Professor, Johns Hopkins University, Baltimore	86
	Jean-Pierre LANDAU, Deputy Governor, Banque de France	93
	Athanasios ORPHANIDES, Governor, Central Bank of Cyprus	95

SESSION 4	TOWARDS WHICH INTERNATIONAL MONETARY SYSTEM? (ROUND TABLE)	99
Moderator:	Martin WOLF, Associate Editor and Chief Economics Commentator, Financial Times	101
Panellists:	HU Xiaolian, Deputy Governor, People's Bank of China	102
	Christine LAGARDE, Minister of the Economy, Finance and Industry, France	104
	Jacques de LAROSIÈRE, Advisor, BNP Paribas	107
	Kiyohiko G. NISHIMURA, Deputy Governor, Bank of Japan	109
	Janet YELLEN, Vice Chair of the Board of Governors, Federal Reserve System	111
CONCLUDING REMARKS	William R. WHITE, Chairman, Economic and Development Review Committee, OECD	115
PARTICIPANTS		125

CONTRIBUTORS

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CONTRIBUTORS

About the contributors (March 2011)

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He was formerly Vice Dean and Director of Wharton Doctoral Programs and Executive Editor of the *Review of Financial Studies*, one of the leading academic finance journals. He is a past President of the American Finance Association, the Western Finance Association, the Society

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He is a Fellow of the Econometric Society. His doctorate is from Oxford University. Dr. Allen's main areas of interest are corporate finance, asset pricing, financial innovation, comparative financial systems, and financial crises.

He is a co-author with Richard Brealey and Stewart Myers of the eighth through tenth editions of the textbook *Principles of corporate finance*.

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Before joining the ECB, he was Director General for International Financial Relations of the Italian Ministry of Economy and Finance. His earlier appointments include: Deputy Director General Research of the ECB, Head of

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He holds a master's degree in economics from the University of Southern California and a Ph. D. from the University of Chicago.

He is author of several articles and books on international and European monetary and financial issues.

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A citizen of France, Olivier Blanchard has spent most of his professional life in Cambridge, United States. After obtaining his Ph.D. in Economics at the Massachusetts Institute of Technology (MIT) in 1977, he taught at Harvard University, returning to MIT in 1982, where he is now the Class of 1941 Professor of Economics. He was Chairman of Economics Department from 1998 to 2003. He is currently on leave at the International Monetary Fund in Washington, where he is the Economic Counsellor and the Director of Research.

He is a macroeconomist who has worked on a wide set of issues, from the role of monetary policy, to the nature

of speculative bubbles, the nature of the labor market and the determinants of unemployment, transition in former communist countries, macroeconomic slumps, and external imbalances. In the process, he has worked with numerous countries and international organisations. He is the author of many books and articles, including two textbooks in macroeconomics, one at the graduate level with Stanley Fischer, one at the undergraduate level.

He is a Fellow and past Council member of the Econometric Society, a past Vice-President of the American Economic Association, and a member of the American Academy of Sciences.

CAMDESSUS Michel*Honorary Governor, Banque de France**Former Managing Director, International Monetary Fund*

Michel Camdessus is an Honorary Governor of the Banque de France. Among his current functions he is also Chairman of the Steering and Monitoring Committee responsible for the employment of funds in France's Social Cohesion Fund and Chief Supervisor of Financial Market Professionals' Compensation.

He was Managing Director of the International Monetary Fund from 1987 to 2000. Between December 1982 and December 1984, he was Chairman of the Paris Club

and Chairman of the Monetary Committee of the European Economic Community.

Having graduated in political economy and economic sciences at the University of Paris, he obtained diplomas from the *Institut d'Études politiques* de Paris and from l'*École nationale d'Administration* (ENA).

He has been awarded the following titles: *Grand officier de la Légion d'honneur*, *Chevalier de l'Ordre national du Mérite* and Commander of the Order of the British Empire.

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DE GREGORIO José

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Jose De Gregorio has been Governor of the Central Bank of Chile since December 2007. He was formerly Vice-Governor from December 2003, and member of the Bank's Board from June 2001.

From March 2000 to June 2001, he was a "tri-Minister", acting as the Minister of the combined portfolios of the Economy, Mining and Energy.

He is full Professor at the University of Chile and *Universidad Católica*. Between 1997 and 2000 he was Professor and Head of post-graduate programs at the Center of Applied Economics at the University of Chile.

From 1994 to 1997, he was Coordinator of Economic Policy at the Ministry of Finance, Chile.

From 1990 to 1994 he worked as an Economist in the research department of the International Monetary Fund.

He has a degree in civil engineering and a master's degree in engineering from the University of Chile (1984). He obtained a Ph.D. in Economics in 1990 at the MIT.

He has published widely in international academic reviews and books on issues including monetary policy, exchange rates, capital flows and economic growth. He has written two books, the latest a textbook on macroeconomics. He has served as a referee and member of editorial boards for several academic journals. He was also a member of the Executive Committee of the Latin American and Caribbean Economic Association (LACEA) and was Co-Director of the organizing committee for the annual LACEA meeting in 1999.

DRAGHI Mario

Governor, Bank of Italy

Chairman, Financial Stability Board

Mario Draghi is the Governor of the Bank of Italy. In this capacity he is a member of the Governing and General Councils of the European Central Bank and a member of the Board of Directors of the Bank for International Settlements. He is also Governor for Italy on the Boards of Governors of the International Bank for Reconstruction and Development and the Asian Development Bank. In April 2006 he was elected Chairman of the Financial Stability Forum, which became Financial Stability Board in spring 2009.

He graduated from the University of Rome, received his Ph.D. in Economics from the Massachusetts Institute of Technology, and subsequently served as Professor of Economics at the University of Florence from 1981 to 1991.

Prior to taking the helm of the Bank of Italy, he was Vice-Chairman and Managing Director of Goldman Sachs International and a member of the firm-wide Management Committee (2002-2005). He was Director General of the Italian Treasury (1991-2001),

Chairman of the European Economic and Financial Committee, a member of the G7 Deputies, and Chairman of OECD Working Party 3. He was appointed Chairman of the Italian Committee for Privatisations in 1993, and, from 1984 to 1990, was an executive Director of the World Bank.

During his time at the Treasury, he chaired the committee that revised Italian corporate and financial legislation and drafted the law that governs Italian financial markets. He is also a former board member of several banks and corporations (Eni, IRI, BNL and IMI).

He is on the Board of Trustees of the Princeton Institute for Advanced Study and the Brookings Institution. He has been an IOP Fellow at the Kennedy School of Government at Harvard University.

He has also authored and edited several publications on macroeconomic and financial issues.

FRENKEL Jacob A.*Chairman, JP Morgan Chase Intl.**Chairman, Group of Thirty*

Dr. Jacob A. Frenkel serves as a Chairman for JP Morgan Chase Intl. He is also the Chairman and CEO of the Group of Thirty (G30). He holds a B.A. in Economics and Political Science from the Hebrew University of Jerusalem, and an M.A. and Ph.D. in Economics from the University of Chicago.

He served from 2004 to 2009 as the Vice-Chairman of American International Group, Inc. and from 2000 to 2004 as Chairman of Merrill Lynch International Inc. Between 1991 and 2000 he served two terms as the Governor of the Bank of Israel. He is credited with reducing inflation in Israel and achieving price stability, liberalising Israel's financial markets, removing foreign exchange controls, and integrating the Israeli economy into the global financial system. Between 1987 and 1991, he was the Economic Counsellor and Director of Research at the International Monetary Fund, and between 1973 and 1987 he was on the faculty of the University of Chicago where he held the position of the David Rockefeller Professor of International Economics and served as Editor of the Journal of Political Economy.

He is a Fellow of the Econometric Society, a Foreign Honorary Member of the American Academy of Arts and Sciences (AAAS), a member of the Board of Directors of the National Bureau of Economic Research (NBER), a member of the International Advisory Board of the Council on Foreign Relations and a member of the Trilateral Commission. He is also a member of the Board of Directors of the Institute for International Economics (IIE).

He is a Laureate of the 2002 Israel Prize in Economics. He is also a recipient of several honorary doctoral degrees and other decorations and awards, including the "1993 Economic Policy Award" by *Emerging Markets* and the "1997 Central Banker of the Year Award" by *Euromoney*.

During 1995-1996, he served as Chairman of the Board of Governors of the Inter-American Development Bank and, during 1999-2000, as Vice-Chairman of the Board of Governors of the European Bank for Reconstruction and Development.

He is the author of numerous books and articles in the fields of international economics and macroeconomics.

GOODHART Charles*Professor Emeritus, London School of Economics*

Pr. Charles Goodhart, Commander of the British Empire, fellow of the British Academy is a member of the Financial Markets Group at the London School of Economics (LSE), having previously, 1987-2005, been its Deputy Director. Until his retirement in 2002, he had been the Norman Sosnow Professor of Banking and Finance at LSE since 1985. Before then, he had worked at the Bank of England for seventeen years as a monetary adviser, becoming a Chief Adviser in 1980. In 1997 he was appointed one of the outside independent members of the Bank of England's new Monetary Policy Committee until May 2000. Earlier he had taught at Cambridge and LSE.

Besides numerous articles, he has written a couple of books on monetary history; a graduate monetary textbook, *Money, information and uncertainty* (2nd Ed. 1989); two collections of papers on monetary policy, *Monetary theory and practice* (1984) and *The Central Bank and The financial system* (1995); and a number of books and articles on Financial Stability, on which subject he was Adviser to the Governor of the Bank of England, 2002-2004, and numerous other studies relating to financial markets and to monetary policy and history.

In his spare time he is a sheep farmer (loss-making).

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Pierre-Olivier Gourinchas grew up in France where he attended *École polytechnique*. He received his Ph.D. in 1996 from MIT and taught at Stanford Graduate School of Business and Princeton University before joining University of California, Berkeley, department of Economics.

His main research interests are in international macroeconomics and finance. His recent research focuses

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HU Xiaolian

Vice-Governor, Bank of China

Hu Xiaolian is a Vice-Governor of the People's Bank of China (PBOC) and the Administrator of the State Administration of Foreign Exchange (SAFE).

She received an MA in Economics from the Graduate School of the People's Bank of China in 1984.

After her graduation, she joined SAFE, where she held many posts including Deputy Division Chief and Division Chief of the Policy Research Division, Deputy Director General of the Policy and Regulation Department, and Deputy Director General and

Director General of the Reserve Management Department. In 1999, she became a Chinese Communist Party (CCP) committee member for SAFE. From 2001 to 2004, Hu served as Deputy Administrator of SAFE.

In 2004, she became Assistant to the Governor of PBOC and a PBOC CCP Committee member. In 2005, she was promoted to Administrator of SAFE and subsequently became a PBOC Vice-Governor. She is currently an alternate member of the 17th CPC Central Committee and in 2009 became Deputy Governor of the People's Bank of China.

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Olivier Jeanne is a Professor of Economics at Johns Hopkins Department, which he joined in 2008 after ten years at the Research Department of the International Monetary Fund. His research spans an array of applied and theoretical topics in international and domestic macroeconomics: capital flows, exchange rate regimes and currency crises, sovereign debt and defaults, international liquidity, and monetary policy.

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He graduated from *École polytechnique* and *École nationale des Ponts et Chaussées* in France, holds a MSc in Economics from the London School of Economics and a Ph.D. in Economics from *École des hautes études en sciences sociales* (EHESS, Paris). He taught economics at *École polytechnique*, UC Berkeley and Princeton University.

KIM Choongsoo*Governor, Bank of Korea*

Dr. Choongsoo Kim is the 24th Governor of the Bank of Korea and Chairman of the Monetary Policy Committee. He took office on April 1, 2010, for a full term to end after four years.

He received a B.A. in Economics from Seoul National University in 1973 and a Ph.D. in Economics from the University of Pennsylvania in 1979.

Prior to his appointment as Governor of the Central Bank, he held various positions in both public service and academia. From September 2008 to March 2010, he worked in Paris as the Korean Ambassador and Permanent Representative to the Organisation for Economic Co-operation and Development (OECD). Before being chosen Ambassador, he served as Senior Secretary to the President for Economic Affairs in the Office of the President of Korea.

He has held many other posts as well, including President of Hallym University (2007-2008), President of the Korea

Development Institute (2002-2005), Dean of the Graduate School for International Studies, Kyung Hee University (1998-2002), and President of the Korea Institute of Public Finance (1997-1998). He also served as Assistant Minister and Special Advisor to the Deputy Prime Minister in the Ministry of Finance and Economy, and as Minister and Head of the OECD Office in the Korean Embassy in Paris (1995-1997), in charge of negotiations on Republic of Korea's accession to the OECD. In 1993, he was Secretary to the President for Economic Affairs in the Office of the President.

Earlier in his career, he worked as a Senior Economist in the Korea Development Institute for ten years (1983-1993), where his research areas included macroeconomic policy management, manpower and social welfare policy. Prior to that, he was a Senior Research Associate of the Center for Human Resource Research at Ohio State University (1979-1983). He began his career as a Research Associate for Wharton Econometric Forecasting Associates, Inc. in 1975.

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Christine Lagarde is the French Minister of Economy, Finance and Industry. She completed her undergraduate studies in Le Havre and Bethesda (Md, USA) at Holton Arms School. She then graduated from law school (Paris X), and obtained a master degree from the *Institut d'Études politiques* in Aix-en-Provence.

After being admitted as a lawyer to the Paris Bar, she joined the international law firm of Baker & McKenzie as an associate, specialising in labour, anti-trust and M & A. Member of the Executive Committee of the firm in 1995, she became Chairman of the Global Executive Committee of Baker & McKenzie in 1999, and subsequently Chairman of the Global Strategic Committee in 2004.

In 2005, she decided to put her skills and work experience to the service of her country. She was nominated Minister for

Foreign Trade, then Minister for Agriculture and Fisheries and, in 2007, she became the first woman to hold the post of Finance and Economy Minister of a G7 country.

Since then, she has been in charge of France's economic policy in the challenging context of one of the most severe crisis since World War II. She also chaired the ECOFIN council, which gathers the Finance Ministers of the European Union, from July 2008 to December 2008. A regular participant at the G20 meetings, she has contributed to foster international policies regarding supervision and regulation within the financial sector including issues regarding compensation or non-cooperative jurisdictions.

She was named *Chevalier de la Légion d'honneur* in July 2000.

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Deputy Governor, Banque de France

Jean-Pierre Landau has been appointed Deputy Governor of the Banque de France in January 2006. Previously, he held numerous positions in the French Ministry of Economics and Finance, including Under-Secretary for External Economic Relations and Treasury Representative in the United Kingdom (French Embassy, London).

He served as Executive for France at the International Monetary Fund (IMF) and the World Bank (Washington, DC) from 1989 to 1993, and Executive Director for France at the European Bank for Reconstruction and Development (EBRD, London) from 2001 to 2005.

He is currently a member of the Board of the Bank of International Settlements (BIS) and a member of the Financial Stability Board and a member of the Steering Committee. He also serves as a G7 and G20 Deputy and as member of the OECD Working Party 3 on economic and financial policy.

He was a Visiting Professor at the School of Advanced International Studies (SAIS, Johns Hopkins University, Washington) from 1991 to 1993. He currently teaches international economics at the *Institut d'Études politiques de Paris*.

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A graduate of the *Institut d'Études politiques de Paris* and the *École nationale d'Administration* and Honorary General Inspector of Finances, he was Director of the French Treasury from 1974 to 1978, before becoming Managing Director of the International Monetary Fund (1978-1987), then Governor of the Banque de France (January 1987-August 1993). He was President of the European Bank for Reconstruction and Development (EBRD) from September 1993 to February 1998.

He is Chairman of the *Observatoire de l'Épargne Européenne* (OEE-the European Savings Institute) (1999-);

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His research focus spans widely from economic theory such as mathematical economics and the microeconomic foundation of macroeconomics, to management studies about areas including real estate markets and the e-business of automobile distribution.

He received the Nikkei Prize in 1993 for his book, *Imperfect competition, differential information, and*

microeconomic foundations of macroeconomics (Oxford University Press, 1992), the Japan Economist Prize in 1997 for his book, *Macroeconomics of "price revolution"* (Nihon Keizai Shinbun, 1996), the Japan Association of Real Estate Sciences Prize in 2005 for his book, *Economic analysis of property markets* (Nihon Keizai Shinbun, 2002), and TELECOM Social Science Award in 2006 for his book, *Advancement of information and communication technology and its impacts on the Japanese economy* (Yuhikaku Publishing, 2004). He was also the winner of the Japanese-Economic-Association-Nakahara Prize in 1998 for his international contribution to mathematical economics and economic theory.

He is now a Senior Advisor of the Asian Economic Panel and a member of the editorial board of several international academic journals in economics and management sciences. He also held business positions before joining the Bank of Japan: he sat on the Advisory Board of the Fujitsu Research Institute (Japan) and he was an Academic Advisor of Recruit Ltd. (Japan) and Investment Property Databank (U.K.).

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He studied law and subsequently graduated from the *Institut d'Études Politiques de Paris* and the *École nationale d'Administration*.

Appointed to the Treasury in the Ministry of the Economy and Finance in 1976, he then spent two years (1980-1982) at France's permanent representation to the European Communities in Brussels. Back at the Treasury, he held a range of posts (government cash and debt management, banking affairs, financing of industry and state-owned enterprises, multilateral issues and export financing). He was appointed Head of the Treasury in 1993. At the same time, he worked closely with several Ministers of Finance: he was Advisor to Edouard Balladur (1986-1988), and Chief of Staff for two other Ministers of Finance, Edmond Alphandéry and Jean Arthuis (1993 and 1995-1997 respectively). He was

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He is Chairman of the *Autorité de contrôle prudentiel* (ACP – the French Prudential Supervision Authority), the Banking Mediation Committee, the Observatory for Payment Card Security and the Regulated Savings Observatory. He also chairs the supervisory boards of the *Institut d'émission des départements d'Outre-Mer* (IEDOM - the French overseas departments note-issuing bank) and the *Institut d'émission d'Outre-Mer* (IEOM - the French overseas note-issuing bank).

He is also chairman of the Bank for International Settlements, for a period of three years, commencing on 7 March 2010, and alternate Governor at the International Monetary Fund.

He has been awarded the honours of *Officier de la Légion d'honneur* and *Chevalier de l'Ordre national du Mérite* in France, and has received decorations from several other countries, notably the *Gran Cruz de la Orden del Mérito Civil* from Spain, the *Ordre national du Lion* from Senegal and *Officier de l'Ordre national de la Valeur* from Cameroun.

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Dr. Athanasios Orphanides is the Governor of the Central Bank of Cyprus and a member of the Governing Council of the European Central Bank.

Prior to his appointment as Governor of the Central Bank of Cyprus in 2007, he served as Senior Adviser at the Board of Governors of the Federal Reserve System in the USA where he started his career as an Economist in 1990. While at the Federal Reserve he taught undergraduate and graduate courses in macroeconomics and monetary economics at Georgetown University and Johns Hopkins University. He has also been a Fellow of the Center for Financial Studies (Frankfurt), a Research Fellow of the Centre for Economic Policy Research (London), and an International Research Fellow of the Kiel Institute for World Economics.

He has published numerous articles on a wide variety of topics in economics and has co-edited a number of conference proceedings on monetary policy and history. A major theme of his work on monetary economics has been the evaluation and design of monetary policy in real time. Among other issues, he has studied simple monetary policy rules, optimal control policies and inflation targeting and has examined the complications for monetary policy that arise from imperfect knowledge regarding the formation of expectations and unobservable concepts such as the output gap. In addition, his work has examined the implementation of monetary policy near the zero bound of short-term nominal interest rates.

He holds Bachelor of Science degrees in Mathematics and Economics as well as a Ph.D. in Economics from the Massachusetts Institute of Technology.

REHN Olli**Member of the European Commission for Economic and Monetary Affairs**

Dr. Olli Rehn is the member of the European Commission responsible for Economic and Monetary affairs.

Prior to his current task, he served for five years as Commissioner responsible for enlargement in the Barroso I Commission and for a couple of months as Commissioner responsible for Enterprise and Information Society in the Prodi Commission. In 1998–2002, he worked as the Head of Cabinet of Commissioner Erkki Liikanen.

Between 2002 and 2003, before taking up a post as the Economic Policy Adviser to the Prime Minister of Finland, he worked as Professor and Research Director at the Department of Political Science and Centre for European Studies at the University of Helsinki. In the 1990s, he was the Chairman of the Finnish Delegation to the Council

of Europe, Vice-President of the European Movement in Finland (NGO) and a member of the European Parliament (Vice-President of the Liberal Group). He has also been a member of the Parliament of Finland (1991-1995) and Deputy Chairman of the Centre Party of Finland (1988-1994).

He has studied economics, international relations and journalism at Macalester College in Saint Paul, Minnesota (USA). He received his master's degree in political science from the University of Helsinki and a Ph.D. from the University of Oxford.

He has published several articles and books, the latest ones being *Europe's next frontiers* (Nomos, Baden-Baden 2006) and *Suomen eurooppalainen valinta ei ole suhdannepolitiikkaa* (WSOY, Helsinki 2006).

ROGOFF Kenneth**Professor, Harvard University**

Pr. Kenneth Rogoff is Thomas D. Cabot Professor of Public Policy and Professor of Economics at Harvard University.

From 2001-2003, he served as Chief Economist and Director of Research at the International Monetary Fund. Rogoff's treatise *Foundations of international macroeconomics* (joint with Maurice Obstfeld) is the standard graduate text in the field worldwide, and his monthly syndicated column on global economic issues is published regularly in over 50 countries. His recent book with Carmen Reinhart, *This time is different: eight centuries of financial folly* (Princeton University Press), builds on a massive new data set covering 66 countries and 800 years. The book (a New York Times, Amazon, and international bestseller) shows the remarkable quantitative similarities across time and countries in both the run-up to, and the aftermath of, severe financial crises.

He is also known for his seminal research on central bank independence and inflation targeting as an institutional device for enhancing the credibility of monetary policy.

He is an elected member of the National Academy of Sciences and the American Academy of Arts and Sciences, as well as the Council on Foreign Relations and the Group of Thirty. He has been invited to give numerous named campus-wide research lectures at universities around the world, and also speaks widely on global economic issues. He holds the life title of international grandmaster of chess. He is 2011 winner of the biennial Deutsche Bank Prize awarded by the Center for Financial Economics.

He is on the Economic Advisory Panel of the Federal Reserve Bank of New York and the Central Bank of Sweden.

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ROUBINI Nouriel

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Dr. Nouriel Roubini is the co-founder and Chairman of Roubini Global Economics, an innovative economic and geo-strategic information service and consultancy named one of the best economics websites by *Business Week*, *Forbes*, *the Wall Street Journal* and *The Economist*. He is also a Professor of Economics at New York University's Stern School of Business. He has extensive policy experience as well as broad academic credentials. From 1998-2000, he served as the Senior Economist for International Affairs at the White House Council of Economic Advisors and then the Senior Advisor to the Under Secretary for International Affairs at the U.S. Treasury Department, helping to resolve the Asian and global financial crises among other issues. The International Monetary Fund, the World Bank and numerous other prominent public and private institutions have drawn upon his consulting expertise.

He has published over 70 theoretical empirical and policy papers on international macroeconomic issues and co-authored the books *Political cycles: theory and evidence* (M.I.T. Press, 1997) and *Bailouts or bail-ins?, responding to financial crises in emerging markets* (Institute for International Economics, 2004), and *Crisis Economics – A crash course in the future of finance* (Penguin Press, 2010). His views on global economics issues are widely cited by the media, and he is a frequent commentator on various business news programs. He has been the subject of extended profiles in *the New York Times Magazine* and other leading current-affairs publications. *The Financial Times* has also provided extensive coverage of his viewpoints.

He received an undergraduate degree at Bocconi University in Milan, Italy and a Ph.D. in Economics at Harvard University. Prior to joining Stern, he was on the faculty of Yale University's Department of Economics.

WEBER Axel A.

President, Deutsche Bundesbank

Pr. Weber has been President of the Deutsche Bundesbank since April 2004 and, in this capacity, also a member of the Governing Council of the European Central Bank (ECB). He is also Governor of the International Monetary Fund (IMF) for Germany and a member of the Board of Directors of the Bank for International Settlements. Since 2009 he has been a member of the Steering Committee of the Financial Stability Board. In January 2011 he became a member of the Steering Committee of the European Systemic Risk Board.

From 1976 to 1982 he studied economics and management at the University of Constance. While he was working as a research assistant for monetary economics (1982-92), the University of Siegen awarded him a doctorate in 1987. He was a Visiting Fellow *inter alia* at the IMF, the Brookings Institution, Washington, D.C., and Queen Mary

College, University of London, and he was a Research Consultant at the ECB.

He taught at the University of Bonn as Professor of Economic Theory (1993-98). Between 1998 and 2001 he held the chair of Applied Monetary Economics at the University of Frankfurt am Main and was, in addition, Director of the Center for Financial Studies (CFS) in Frankfurt am Main (1998-2002). In this capacity, he started the conference series *The ECB and its watchers*. From 2001 to 2004 he taught international economics at the University of Cologne. He is the author of books and articles, mostly on macroeconomic, financial market and monetary policy issues.

In 2002 he was appointed to the German Council of Economic Experts, the Federal Government's main economic advisory board – a role he had to give up when he was appointed President of the Deutsche Bundesbank.

WHITE William R.*Chairman, Economic and Development Review Committee, OECD*

William R. White is the Chairman of the Economic Development and Review Committee (EDRC) at the Organisation for Economic Co-operation and Development (OECD) in Paris. This committee carries on regular evaluations of the policies of both member countries and aspiring members of the OECD. In his capacity as Chairman, to which he was appointed in October 2009, he also contributes to meetings of WP1 and the Economic Policy Committee of the OECD.

In addition, he is a member of the Issing Committee, advising the German Chancellor on G20 issues, and is on the Advisory Board of the Institute for New Economic Thinking. He continues to publish academic and journal articles on topics related to monetary and financial stability as well as the process of international cooperation in these areas. He also speaks regularly to a wide range of audiences in both the public and private sectors.

From May 1995 to June 2008 he was the Economic Adviser and Head of the Monetary and Economic Department (MED) at the Bank for International Settlements (BIS) in Basel. As Economic Adviser, he published articles in his own name and oversaw the preparation of the BIS annual report for which he wrote the introduction and conclusions. As head of the MED, he had overall responsibility for the department's output of research, data, and information services, as well as the organisation of meetings for central bank governors and staff around the world.

Before going to the BIS, he held various positions at the Bank of England and the Bank of Canada. He left the Bank of Canada as Deputy Governor in charge of international affairs and in that capacity attended meetings of the G7, G10, OECD (WP3), IMF and the Bellagio Group among others.

He was educated in Kenora Ontario, his birthplace, and at the University of Windsor. He received his Ph.D. from the University of Manchester on a Commonwealth scholarship.

WOLF Martin*Associate Editor and Chief Economics Commentator, The Financial Times*

Martin Wolf is Associate Editor and Chief Economics Commentator at the *Financial Times*, London. He was awarded the CBE (Commander of the British Empire) in 2000 "for services to financial journalism". He is an associate member of the governing body of Nuffield College, Oxford, Honorary Fellow of Corpus Christi College, Oxford University, an Honorary Fellow of the Oxford Institute for Economic Policy (Oxonia) and a Special Professor at the University of Nottingham. He has been a Forum Fellow at the annual meeting of the World Economic Forum, in Davos, since 1999 and a member of its International Media Council since 2006. He was made a Doctor of Letters, *honoris causa*, by Nottingham University in July 2006. He was made a Doctor of Science (economics) of London University, *honoris causa*, by the London School of Economics in December 2006.

He was joint winner of the Wincott Foundation senior prize for excellence in financial journalism for 1989 and 1997. He won the RTZ David Watt memorial prize for 1994, granted annually "to a writer judged to have made an outstanding contribution in the English language towards the clarification of national, international and political issues and the promotion of their greater understanding"; the "Accenture Decade of Excellence" at the Business Journalist of the Year Awards of 2003; the Newspaper Feature of the Year Award at the Workworld Media Awards 2003. On 1st December 2005 he was given First Magazine's "Special Advocacy Award" at its annual "Award for responsible capitalism". His most recent publications are *Why globalisation works* (Yale University Press, 2004) and *Fixing global finance* (Johns Hopkins University Press, 2008 and Yale University Press, 2009).

CONTRIBUTORS

About the contributors (March 2011)

YELLEN Janet

Vice-Chair, Board of Governors of the Federal Reserve System

Dr. Janet L. Yellen took office as Vice-Chair of the Board of Governors of the Federal Reserve System on October 4, 2010, for a four-year term ending October 4, 2014. She simultaneously began a 14-year term as a member of the Board that will expire January 31, 2024.

Prior to her appointment as Vice-Chair, she served as President and Chief Executive Officer of the Twelfth District Federal Reserve Bank, at San Francisco.

She is Professor Emeritus at the University of California at Berkeley where she was the Eugene E. and Catherine M. Trefethen Professor of Business and Professor of Economics and has been a faculty member since 1980.

She took leave from Berkeley for five years starting August 1994. She served as a member of the Board of Governors of the Federal Reserve System through February 1997, and then left the Federal Reserve to become Chair of the Council of Economic Advisers through August 1999. She also chaired the Economic Policy Committee of the Organisation for Economic Cooperation and Development from 1997 to 1999.

She is a member of both the Council on Foreign Relations and the American Academy of Arts and Sciences. She has served as President of the Western Economic Association, Vice-President of the American Economic Association and a Fellow of the Yale Corporation.

She graduated *summa cum laude* from Brown University with a degree in Economics in 1967, and received her Ph.D. in Economics from Yale University in 1971. She received the Wilbur Cross Medal from Yale in 1997, an Honorary Doctor of Laws degree from Brown in 1998, and an Honorary Doctor of Humane Letters from Bard College in 2000.

An Assistant Professor at Harvard University from 1971 to 1976, she served as an Economist with the Federal Reserve's Board of Governors in 1977 and 1978, and on the Faculty of the London School of Economics and Political Science from 1978 to 1980.

She has written on a wide variety of macroeconomic issues, while specialising in the causes, mechanisms, and implications of unemployment.

OPENING SPEECH

Christian NOYER

Governor

Banque de France

I am very pleased to welcome you here in Paris to the International Symposium of the Banque de France. As you may know, this symposium is a recurrent event –this is the 6th edition– but this year it has taken a particular significance as it coincides with the French Presidency of the G20.

This presidency occurs at a key moment of the reform of governance and regulation of the global economy. Hence, today's topic "Regulation in the face of global imbalances" was not chosen at random. However, beyond this proximity with the work of the G20, I hope this symposium will also provide an excellent opportunity for extending discussions beyond this institutional forum, for strengthening relations between central bankers (there are more than 100 in this room), government officials, business managers and leading academics from around the globe who honour us with their presence today and to whom I would like to extend my warmest thanks.

The world economy has experienced major developments over the last two decades. These changes have brought progress –strong growth, low inflation, less poverty– but they have also led to crises. Indeed, the acceleration in globalisation in the 1990s and 2000s was accompanied by steady growth in world imbalances. Even though the role played by these imbalances in the triggering of the last crisis is still a matter of debate, their coincidence with the rise in financial imbalances in several economies, such as the credit and securitisation boom, the sharp increase in asset prices, government deficits, etc., is striking. In short, the issue of global imbalances and that of regulation in a global economy are undeniably closely linked.

Two major topics appear particularly relevant to our discussions today.

The first focuses on the developments in the international monetary and financial system. The financing of current account imbalances has been facilitated by the liberalisation of capital movements that occurred in a large number of countries in the 1990s; international capital flows thus

increased seven-fold between 1990 and 2010. These flows clearly had a positive effect, in particular for emerging countries which require capital to develop. However, the rapid increase in the volume of financial flows was accompanied by a rise in their volatility, which represents a new source of risk. The sudden withdrawals of international capital have played a major role in triggering and spreading financial crises over the past fifteen years. This is the main concern of the French Presidency of the G20 and it appears crucial to me to examine it, not only from the narrow perspective of the management of capital flows, but also from the wider perspective of global liquidity.

Indeed, the increase in global imbalances is not confined to current account positions. In addition to the growth in *net* international capital flows, the very sharp rise in *gross* positions in international portfolios, not exclusively but largely linked to the accumulation of foreign exchange reserves by the major emerging economies, is one of the most significant developments of the past few years. The striking synchronisation of the recent economic crisis across the major economies is certainly in large part a result of this.

In any case, the issue of the appropriate level for the supply of safe and liquid international assets and the international monetary and financial system best able to provide this has yet to be resolved. As you know, this issue is at the heart of France's presidency of the G20.

The second major topic is international economic and financial coordination and I will briefly touch on its two main components.

The first component concerns the Framework for Strong, Sustainable and Balanced Growth. This initiative has been given wide media coverage since its adoption at the G20 summit in Pittsburgh in September 2009. However, I am inclined to think that it has sometimes been distorted and that its scope has been underestimated. This initiative is indeed a promising and ambitious one: promising as it could be the impetus for genuinely enhancing

international economic cooperation through the combination of economic policies taking greater account of externalities and structural reforms, in order to achieve the jointly defined global objectives. Ambitious, of course, as it involves countries making explicit commitments on measures to be taken and discussing the outcomes with their peers, as part of what is known in G20 jargon as the Mutual Assessment Process (MAP). Under the Korean presidency, whose efficacy and vision I would like to praise, an initial exercise resulted, in late 2010 in Seoul, in the adoption of a detailed country-by-country action plan and the commitment to tackle more specifically the global imbalances identified by the indicative guidelines. Far from me the idea of underplaying the difficulty of the exercise but the progress made so far is not inconsiderable and in this regard I am happy that the Ministers and Governors meeting in February in Paris resulted in agreement on a set of benchmark indicators.

The second component concerns financial regulation. It is very clear that, in this area, we are past the stage of proposals and are now mainly concerned with consolidating the agreements approved by the Heads of State and Government in Seoul, especially the Basel III framework. The agreement that we achieved in 2010 made it possible to reconcile the need for far-reaching reforms with the need to reduce uncertainty relating to regulatory changes. Implementing these reforms in a harmonised framework capable of ensuring a genuine level playing field is now the crucial challenge, both from the point of view of our collective credibility and the overall effectiveness of the new mechanism. This very significant advance in terms of financial regulation should not obscure the progress that still needs to be made regarding the work underway, especially in the areas of market infrastructures (including for commodity markets), tighter regulation of activities included under the designation the “shadow banking system” and the behaviour of market players themselves. Once again, I underscore our collective responsibility, which is to ensure that all of the G20 countries and, more

widely, the international community as a whole apply international standards.

Today’s discussions will be divided into four sessions. The first, chaired by Axel Weber, will examine the notion of disequilibrium after the crisis and will allow us to discuss the unpredictable evolution of global imbalances in the medium term, in the light of different assumptions concerning economic growth and savings trends in the different zones.

Mario Draghi has agreed to chair the second session that will focus on questions related to supervision and coordination. As I have already said, the current context is characterised by the reform of global governance and regulation, a process given impetus by the G20. Therefore, at this stage, it seems appropriate to explore topics such as the evolution of the role of international financial institutions and the accomplishments and future progress in harmonising global financial regulations.

The third session, chaired by Michel Camdessus, should help us to gain further insight on what could, or should, be the role of central banks in a post-crisis environment. For example, should central banks more explicitly incorporate considerations of financial stability into their policies than they do today? If so, how? To what extent would the extension of their roles be compatible with their independence or even with their mandates to ensure price stability?

The reform of the international monetary system will be the central theme of the last session that will take the form of a roundtable chaired by Martin Wolf.

I am particularly grateful to Bill White for accepting the difficult task of drawing a summary of our symposium which is bound to be both dense and captivating.

I would like to hand the floor to Axel Weber to chair the first session, and, once again, I would like to thank all the eminent personalities who have agreed to participate in this symposium.

SESSION I

WHAT IMBALANCES AFTER THE CRISIS?

Chairperson:	Axel WEBER, President, Deutsche Bundesbank	23
Speakers:	Franklin ALLEN, Professor, Wharton School, University of Pennsylvania	25
	Jacob A. FRENKEL, Chairman, Group of Thirty, Chairman, JPMorgan Chase Intl.	32
	Pierre-Olivier GOURINCHAS, Professor, University of California, Berkeley	36
	Kenneth ROGOFF, Professor, Harvard University	41
	Nouriel ROUBINI, Professor, Stern School of Business, New York University	44

Professor Axel A. WEBER

President

Deutsche Bundesbank

Over the past several decades, the economies of the world have become increasingly integrated. With the removal of barriers to the worldwide flow of ideas, services, goods and capital, a global economy emerged. This has brought about a large increase in welfare and still harbours huge potential for further economic growth and prosperity. During the past years, growth in the world economy has become increasingly unbalanced, however. A visible expression of these imbalances are divergences in current account positions. Although these imbalances were not the ultimate cause of the financial crisis, they did play a role in the build-up of unsustainable structures. This sparked public debate regarding the options to rebalance the world economy and secure sustainable long-term growth. Let us first take a look at recent developments with regard to global imbalances and then discuss some policy options to address these imbalances.

1 | Global rebalancing: recent trends and perspectives

Over the past two and a half years we have witnessed a partial correction of current account imbalances which was mainly driven by external adjustments in deficit countries and by lower surpluses in commodity exporting countries. However, the IMF forecasts a renewed divergence of current account positions. While the current account of the euro area as a whole will remain broadly in balance, future trends in global imbalances will be determined mainly by the United States on the deficit side and by Emerging Asia and oil-exporting countries on the surplus side.

According to these forecasts, the current account deficit of the United States will increase slightly until 2015, while the Chinese current account surplus is expected to increase more sharply. The medium-term outlook, however, is uncertain as the Chinese government has outlined a new plan to raise domestic demand. Current account surpluses in oil-exporting countries have not returned to

pre-crisis levels, but given the recent hike in oil prices the surpluses might increase faster than initially expected. To sum up, current developments suggest that global imbalances will grow again and remain uncomfortably large over the coming years, albeit at below pre-crisis levels. Thus, there is good reason to further discuss policy options to rebalance the world economy.

2 | Policy options to reduce global imbalances

In principle, current account surpluses or deficits are not a problem in themselves. However, the ones we have been observing at the global level are an expression of underlying barriers to sustainable growth and, at the same time, add an element of instability to the global economy. The US current account deficit, for example, has reflected a general decline in saving. Despite an ageing population and foreseeable increases in health and age-related expenditures, public saving has deteriorated. At the same time household savings have declined due to increased borrowing against rising house values. The counterpart to the US current account deficits were surpluses in emerging markets such as China and some oil-exporting countries. For the latter group of countries, the surpluses can partly be explained by an increase in oil prices. Nevertheless, current account surpluses were also caused by exchange rate policies that some countries pursued to artificially support their export sectors.

Given the malign nature of these persistent differences in current account positions the term global imbalances is indeed justified, and it is necessary to address them. However, when designing relevant measures, it is imperative not to underestimate the complexity of the problem. A country's current account position is driven by a very diverse set of underlying factors from within and outside its borders. Consequently, any sensible approach to reducing current account imbalances

should not aim at steering them directly. Instead, the objective should be to create circumstances in which current account positions are determined by efficient and unbiased market decisions. In this context, the question of which countries have to act to correct the global imbalances can only be answered by taking into account their ultimate causes.

In general, emerging economies with high current account surpluses as well as oil-exporting countries should remove structural distortions that limit the expansion of domestic demand. In countries with an undervalued currency, for example, more flexible exchange rates would strengthen purchasing power and thus help to redirect growth from exports to domestic demand. This, however, is not a panacea and should be supplemented by structural reforms. In China, for example, such reforms might include measures to improve social security, which would reduce precautionary household saving, strengthen domestic demand and ultimately lead to a more balanced current account.

Economies with persistently large current account deficits, on the other hand, should adopt measures to support saving. This requires a sizeable decline in domestic absorption –the income levels and growth

rates which prevailed before the crisis are no longer the appropriate benchmarks. Governments have to stabilise the public deficit, while households have to reduce their debt which had grown rapidly during the housing bubble. In addition, measures to strengthen export sectors, while maintaining open markets, would also help to reduce current account deficits.

The G20 recently made an attempt to address the problem of imbalances at the political level: in September 2009 the “Framework for strong, sustainable and balanced growth” was launched. This framework includes a pledge to “promote more balanced current accounts”. As a general objective, this certainly points in the right direction and the framework could indeed usefully support the process of restoring more balanced global growth. It is backed by all the major stakeholders and is driven at the highest level by the G20 leaders. Moreover, a mutual assessment process (MAP) forms part of the framework. This process could provide an opportunity for exerting peer pressure among members to undertake the required structural reforms. Regarding the design of the relevant supervisory mechanism some progress was made during a meeting of the G20 in mid-February. Though difficult negotiations still lie ahead I am confident that they will eventually lead to viable results.

There is no question that the problem of global imbalances has to be addressed. However, to be successful, it is essential that efforts do not focus on symptoms but rather are directed at the structural causes of the imbalances. To be more specific, as current accounts reflect a very complex set of determinants, any attempt to steer them directly within more or less arbitrary limits would overburden the relevant authorities. Similar objections apply to attempts to stabilise major exchange rates around some purported equilibrium target values. Such attempts at macroeconomic fine-tuning raise public expectations that economic policy cannot live up to; rather, they risk creating new frictions that require further interventions. Instead, it is up to the national authorities to implement the necessary structural reforms to allow for a market-based and lasting reduction of imbalances.

Franklin ALLEN

Professor

Wharton School, University of Pennsylvania

I | Causes

One of the most widely reported economic facts last year was that China overtook Japan to become the second largest economy in the world. Another interesting statistic that received attention is that in terms of per capita GDP in purchasing power parity (PPP) terms, Taiwan overtook Japan. According to the International Monetary Fund (IMF), Taiwan had a GDP (PPP) per capita of USD 34,743 while the corresponding figure for Japan was USD 33,828. Table 1 shows the figures for the highest ranked countries and places. One of the most interesting features of this table is that Taiwan had a higher GDP (PPP) per capita than France at USD 34,092 and was just behind the United Kingdom at USD 35,053 and Germany at USD 35,930. Now Taiwan is, of course, a province of China. Taiwan's growth took off about twenty years before mainland China's. What this suggests is that about twenty years from now China could surpass European levels of GDP (PPP) per capita. There are many problems with PPP comparisons and mainland China's growth may not continue at the same pace that Taiwan's did. However, the point of these statistics is to show the shift in economic power from the West to the East. It is well known that Japan is a rich country but less well known the extent to which some other East Asian countries have caught up with European countries. For example, South Korea at USD 29,791 is ahead of Spain at USD 29,651 and Italy at USD 29,418.

Unfortunately, the governance structure of the Bretton Woods Institutions, and in particular the IMF, has lagged behind this change in economic power. European countries, particularly small ones, have very large quotas relative to Asian countries and especially China. For example, currently Belgium has 2.08% of the votes, and the Netherlands 2.34% while China has 3.65%.¹ Perhaps more importantly, the head of the IMF has always been a European² and the deputy head has always been an American. The head of the World Bank has always been an

Table 1 List of countries by GDP (PPP) per capita in 2010

(USD)		
Rank	Country	GDP (PPP) per capita
1	Qatar	88,232
2	Luxembourg	80,304
3	Singapore	57,238
4	Norway	52,238
5	Brunei	47,200
6	United States	47,123
7	Hong Kong	45,277
8	Switzerland	41,765
9	Netherlands	40,777
10	Australia	39,692
11	Austria	39,454
12	Canada	39,033
13	Ireland	38,685
14	Kuwait	38,293
15	Sweden	37,775
16	United Arab Emirates	36,973
17	Denmark	36,764
18	Iceland	36,681
19	Belgium	36,274
20	Germany	35,930
21	United Kingdom	35,053
22	Taiwan, Province of China	34,743
23	Finland	34,401
24	France	34,092
25	Japan	33,828
26	South Korea	29,791
27	Spain	29,651
28	Italy	29,418
29	Israel	29,404
30	Greece	28,833

Source: IMF Website

1 See <http://www.imf.org/external/np/sec/memdir/members.htm>. Accessed 27 February 2011.

2 So far, four Managing Directors have been from France, two from Sweden, and one each from Belgium, the Netherlands, Spain and Germany.

American. What about Asia? Despite being the second largest economy in the world for many decades, the Japanese have not had a head or deputy head of the IMF or head of the World Bank. As discussed further below, there have been promises of reform but this has not yet happened.

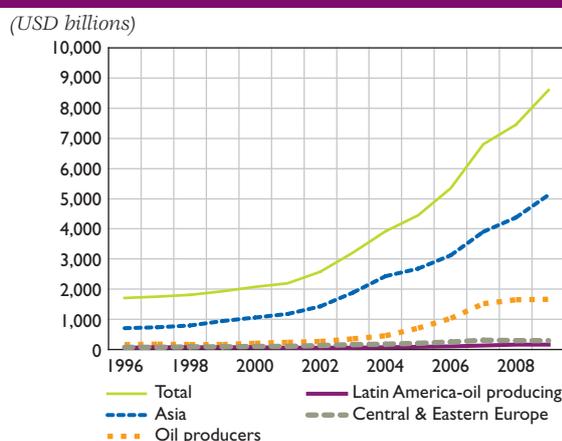
Does this underweighting of the Asians in the governance structure of the Bretton Woods institutions matter? It can be argued that it did in the 1997 Asian Crisis. In retrospect the banks and firms in many Asian countries had borrowed too much in foreign exchange, particularly US dollars. When the crisis hit their foreign exchange funding dried up and they were unable to borrow in dollars. The central banks did not have enough in reserves to cover banks' and firms' needs and were also unable to borrow in foreign exchange. Many countries turned to the IMF.

Allen and Hong (2011) focus on the case of South Korea as an example of what happened in the Asian Crisis. Despite having a public debt to GDP ratio of only 11% South Korea was required to raise interest rates and cut government expenditures. This was the exact opposite of what the United States and Europe did in the crisis that started in 2007. Since chains of trade credit were particularly important in South Korea, raising interest rates led to many firms going bankrupt and the unemployment rate went from around 3% to 9%. South Korea did not want to follow these policies but because of the governance structure of the IMF they were unable to successfully appeal this decision. Other Asian countries that went to the IMF during the crisis fared similarly.

Chart 1 shows the total reserves including foreign exchange and gold of various regions and groups from 1996-2009. It can be seen that the total amount of reserves has increased dramatically from just under USD 2 trillion in 1996 to just under USD 9 trillion in 2009. The chart shows that most of this increase was due to the Asian countries. The oil producing countries such as Russia and Saudi Arabia have also increased their reserves substantially particularly from 2004 onwards. These increases are particularly large relative to other regions of the world such as Latin America (without their oil producing countries) and Central and Eastern Europe, which are shown as a comparison.

3 See Allen and Hong (2011).

Chart 1 Total reserves from 1996-2009



Notes:

1) The figures include foreign exchange reserves as well as holdings of gold.

2) (i) Total is all the countries in the IMF database.

(ii) Asia is China, Japan, Korea, Taiwan – Province of China, Singapore, Hong Kong, Thailand, Malaysia, Indonesia, India, Philippines, Vietnam, Laos and Myanmar.

(iii) Oil producers are OPEC countries plus Russia, Mexico, Norway, and Brazil.

(iv) Latin America-oil producing is Argentina, Bolivia, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, and Uruguay.

(v) Central & Eastern Europe is Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Montenegro, Poland, Romania, Serbia, and Turkey.

Source: IMF Website.

It is this accumulation of an extra USD 7 trillion of foreign exchange reserves that is at the heart of the global imbalances problem. Why were these extra reserves accumulated? It can be seen that most of the additional reserves were acquired by Asian countries and in fact most of these were the East Asian countries. One explanation for this, which is supported by statements of some government officials,³ is that they decided they must build reserves as a form of self-insurance. They wanted to ensure that they would not be in the situation that South Korea and many other East Asian countries faced in 1997 where they were forced to take policy actions that they disagreed with and that turned out to be very damaging. It is interesting to note that in fact South Korea did much better during the recent crisis than in 1997 and in that sense the accumulation of reserves was a success. By allowing its exchange rate to fall significantly it was

able to cushion the blow from the Lehman Brothers default. In the first quarter of 2009, when similar export-based economies like Japan and Germany had falls in GDP of 3-4%, South Korea was one of the few countries to actually grow.

The oil producing countries have also been acquiring reserves particularly after 2004. One explanation for this is that the increase in oil prices and revenues due to increased demand for oil by China and other fast growing emerging countries left them with surpluses that they could not absorb domestically and ended up investing in other countries. This is an important part of the increase in reserves but is not as significant as the Asian component.

China is included in the line marked Asia in chart 1 and constitutes a large proportion of the total. China was less affected by the 1997 Asian Crisis than most other countries in the region. It is likely that the government also worried about how they would be treated by the IMF. However, two other factors appear to be important. The first is that they wanted to keep the renminbi (RMB) pegged to the dollar so that exporters would not face exchange rate risk. While for many years their trade was roughly balanced, in recent years they have run large trade surpluses and there have been large inflows of capital. Their reserves passed USD 1 trillion in late 2006. Four years later at the end 2010 they had almost tripled to USD 2.85 trillion. In addition to the trade advantages from a mostly pegged exchange rate, there appears to be a second significant advantage, which is the political influence they bring. Criticism of China has become much more muted. As United States borrowing from China increased, American condemnation of China's human rights record has decreased. Since the start of the European debt crisis, there has been a similar effect in Europe and most European leaders have ceased meeting with the Dalai Lama.

One method of accumulating foreign exchange reserves is for a country to lower the consumption of its population so that it can run a surplus. In this case there must be other countries that run deficits to offset these surpluses. In practice the United States was the main country that did this. Another way for a country to accumulate foreign exchange reserves is to borrow funds using long term debt and invest them in short term debt. There is often discussion about the imbalances being due to a "savings glut" in Asia. However, the reserves are not just the result of saving

but also of the financial structure of the government's assets and liabilities and how it interacts with that of the banking system and firms.

The large supply of reserves held by Asian and oil producing countries' central banks was to a large extent invested in the United States and Europe. The key feature of these funds is that their supply is insensitive to the expected return earned and the risk borne. For Asian countries they appear to be mostly for self-insurance purposes and in the case of China also for political purposes.

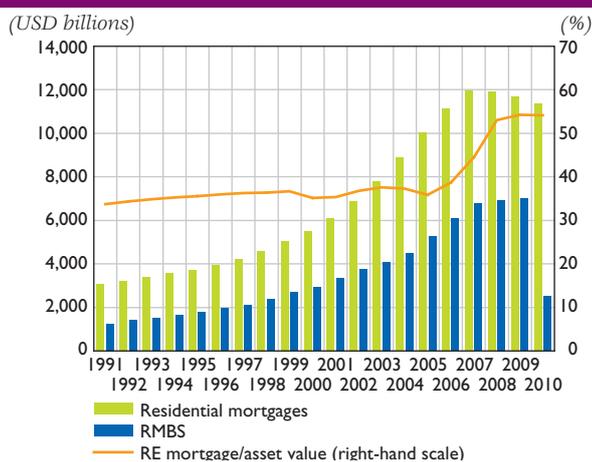
2 | Consequences

Given this accumulation of many trillions of dollars of reserves and the insensitivity of this supply to risk and return, the next issue is how the funds were invested and the effect this had on the financial and real estate markets. In terms of currency most reserves were invested in US dollars and euros. In terms of the securities that they were invested in, there were significant political constraints on the types of investment that could be made. Chinese firms were blocked from buying Unocal in the United States and from buying shares in Rio Tinto in Australia. In early 2011 Huawei withdrew from a purchase of assets of the US firm 3Leaf and prior to that from purchasing the US firm 3Com in 2008 when in both cases it became likely approval for the deals would be withheld on national security grounds. It was not just Chinese firms that were restricted. Dubai Ports World, owned by the Dubai government, was blocked from buying US ports when it purchased the British firm P&O and was forced to divest them.

As a result of these constraints on purchasing equities, a large part of the Chinese funds appear to have been invested in debt securities. Good information on precisely how the funds were invested is lacking. However, it seems a significant amount was invested directly in Fannie Mae and Freddie Mac securitised mortgages. Some proportion of the funds invested short term by China and other countries are also likely have found their way to funding special investment vehicles (SIVs) and other entities set up to hold securitised mortgages.

It can be argued that this increase in the supply of funds helped to fuel the real estate bubble in the

Chart 2 Aggregate stock of residential mortgages and residential mortgage backed securities compared to the aggregate leverage ratio for residential real assets in the United States



Note: The dollar amount (in billions) of the outstanding aggregate US stock of residential mortgages and mortgage backed securities is reported on the left axis from 1991 through 2010Q2. The aggregate residential leverage ratio is reported on the right axis. The leverage ratio is computed as the ratio of the value of the outstanding stock of residential mortgages to the value of residential real estate in the United States. The data were obtained from the Federal Reserve Board Flow of Funds Accounts of the United States, Table L.218, L.219, and B.100-B.103. (See, <http://www.federalreserve.gov/releases/zl>). Source: Wallace (2010).

United States. The expansion of Asian central banks holdings of foreign exchange reserves coincided with a vast increase in mortgage debt in the United States. Chart 2 shows that in the five years preceding the bursting of the real estate bubble in 2006, mortgage

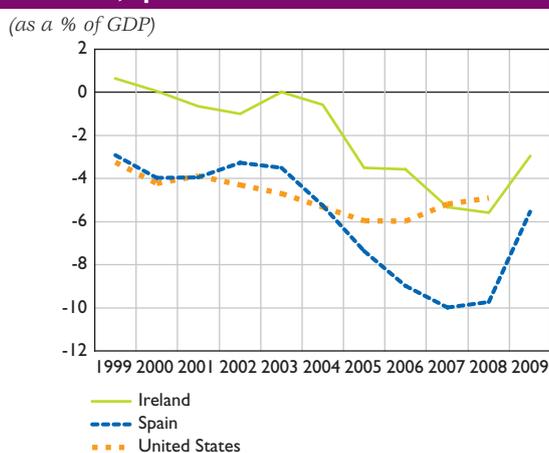
debt in the United States approximately doubled from around USD 6 trillion to USD 12 trillion. As Maddaloni and Peydro (2010) document, the large supply of debt in the United States helped to drive down lending standards to ensure that there was enough demand for debt from house buyers and other borrowers.

The global imbalances also led to an increase in debt in other countries such as Ireland and Spain. All three countries ran heavy current account deficits in the 2000s as shown in chart 3. Taylor (2008) and Allen and Carletti (2010), among others, have argued that low interest rates set by central banks also played a significant role in creating a bubble in real estate prices. However, credit is a crucial part of the story as well. Chart 4 shows the rise and eventual collapse of real estate prices in these countries.

Reinhart and Rogoff (2009) provide persuasive evidence that historically collapses in real estate prices, either residential or commercial, or both, are one of the major causes of financial crises. In many cases these collapses occur after bubbles in real estate prices that are often created by favorable macroeconomic conditions such as those induced by prolonged loose monetary policy and excessive availability of credit. When the bubbles burst, the financial sector and the real economy are adversely affected. It can be argued that this is what happened in the current crisis.

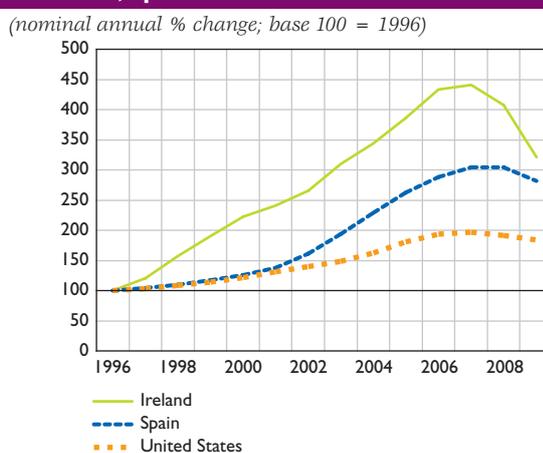
The precise way in which low interest rates and easy credit lead to bubbles in asset prices is not

Chart 3 Current account deficit in Ireland, Spain and the United States



Source: Eurostat.

Chart 4 Housing prices in Ireland, Spain and the United States



Sources: Irish Dep. of the Environment, Banco de España, and FHFA.

well understood. Allen and Rogoff (2011) contains a selective survey of the literature on asset prices, monetary policy and financial stability. Allen and Gale (2000, 2007) have argued asset price bubbles can be caused by a growth in credit and an agency problem between lenders and borrowers. The expansion in credit resulting from global imbalances would be one example of how such a bubble can be initiated. In the model suggested banks are unable to observe the risk taken by borrowers and this leads to an incentive to invest in risky assets in fixed supply like real estate. The borrowers profit from the upside while the lenders bear the downside risk. Since the real estate is in fixed supply the effect of investment is to drive up the price so there is a bubble. There are other theories of bubbles based on overlapping generations' models, asymmetric information, and behavioral theories but these are somewhat more difficult to interpret as real estate bubbles. An important task going forward is to understand how a large increase in the supply of credit can lead to real estate bubbles that wreak havoc on the financial system when they burst.

3 | Possible solutions

While it is individually advantageous for countries to self-insure by accumulating reserves, this is an inefficient mechanism from a global perspective. The buildup of reserves and their role in creating real estate bubbles that triggered the crisis when they burst meant that this process is very undesirable. These undesirable consequences provide a rationale for undertaking the following measures to reduce global imbalances going forward:

- a guaranteed foreign exchange safety net;
- the development of the Chinese renminbi as a third global reserve currency;
- reform of the IMF;
- avoidance of real estate bubbles through appropriate monetary policy and macroprudential regulation.

It has been argued above that a major reason for the crisis was a buildup in the foreign exchange reserves held by Asian central banks. An explanation of why this was done was as a way to avoid situations like the 1997 Asian Crisis where they ran out of foreign

exchange reserves. One of the success stories of the financial crisis that started in 2007 was the implementation of foreign exchange currency swaps between central banks. Allen and Moessner (2010) provide an excellent account of this. However, these were arranged after the crisis started when it became clear that there were significant currency mismatches. What many countries have argued is that these swap facilities need to be guaranteed beforehand and made automatic so that the countries can rely on accessing them in times of crisis. Since these countries could then rely on this foreign exchange safety net, they would no longer need to hold such large reserves. There would be the question of who would bear the credit risk in such agreements. One possibility is for both sides to be required to post collateral. This foreign exchange safety net would appear to be an important way to change the international financial architecture to reduce the need for countries to hold foreign exchange reserves. Moreover, this scheme has the great advantage that it can be implemented in the short run.

A desirable medium term scenario is that the Chinese RMB becomes fully convertible and joins the US dollar and the euro as the third major reserve currency. With three reserve currencies there would be more scope for diversification of risks and China itself would have little need of reserves. The United States, for example, held only about USD 134 billion of reserves at the end of 2010. This is perhaps one of the most practical solutions to the global imbalances problem. The Chinese have already taken some steps in this direction. They have started to allow the settlement of trade in RMB. They have also allowed the issue of RMB bonds by Western companies such as McDonalds in Hong Kong. Of course, the most important aspect of being a reserve currency is full convertibility of the RMB. That is still some way off and this is the sense in which this solution to the global imbalances problem is a medium term one. Adjustments on the capital account with a convertible RMB are difficult to forecast. Investment opportunities within China are limited and once it is fairly valued there may be significant flows of funds out of China. On the other hand, many investors would like direct exposure to the second largest economy in the world so there will also be large inflows. Judging the balance of these two factors and the long term exchange rate will be difficult to do. However, China should start moving cautiously in the direction of making the RMB fully convertible as soon as possible.

The IMF can perform an important role by providing funds to countries that are hit by shocks. If countries could always rely on this, there would not be a need to accumulate large levels of reserves. In order for this to happen the IMF needs to reform its governance structure so that Asian countries play a much larger role. This should be accompanied by an increase in Asian staff at all levels. There are proposals to do this but rather than implementing them immediately, the proposal is to do this over a number of years. The reforms should be speeded up otherwise the IMF risks becoming an institution that is primarily involved in Europe. Even before the crisis most of its lending was to European countries. After the sovereign debt problems in 2010 and the resulting IMF loans to Greece and Ireland, this bias has been accentuated. IMF lending is limited to USD 750 billion. This is small relative to China's USD 2.85 trillion in reserves. Many non-European countries may prefer to approach China rather than the IMF if they hit difficulties going forward.

All of these measures may still not be sufficient to eliminate large holdings of foreign exchange reserves by central banks that are at the heart of the global imbalance problem. Given this it will also be necessary to adopt measures to limit real estate bubbles. One way to prevent them is then through interest rate policy. In particular, very low interest rates at a time when property prices are surging should be avoided. Once real estate bubbles have started, the question is whether interest rates should be raised to prick them. It may be possible and desirable to do this in economies with a high degree of homogeneity as in small countries like Sweden or possibly the United Kingdom.

The problem is more complicated in heterogeneous economies like the United States, China and the Eurozone. Different regions within these

economies differ in terms of economic fundamentals and the rate of property price increases. Using interest rates to prick bubbles will not be so desirable because this will adversely affect the areas that do not have bubbles. The recent events in the Eurozone constitute a clear example. The interest rate policy followed by the European Central Bank was correct for countries like Germany where there was no bubble but it was inappropriate for Spain and Ireland, where it probably significantly contributed to the creation of the property bubble. A tighter policy may have been effective for preventing the bubbles in Spain and Ireland but at the cost of a recession or at least slower growth in some of the other countries.

Whether or not interest rates can be used, it seems desirable to use measures such as macroprudential regulation to prevent bubbles. One example would be limits on loan-to-value ratios that would be lowered as property prices increase at a faster pace. These may be effective for residential property but may be difficult to enforce for commercial property. The reason is that firms may be able to use pyramids of companies that effectively increase leverage. Another measure is to have property transfer taxes that are greater the higher is the rate of property price increases. Another, perhaps more direct, measure is to impose restrictions on real estate lending in certain regions.

There is some evidence that as a result of its stimulus policies and loose monetary policy in the United States and other parts of the world China is experiencing real estate bubbles in a number of major cities such as Beijing, Shanghai and Shenzhen. The government has tried a number of these macroprudential policies to cool these real estate markets. However, it seems that their success has so far been limited. This evidence for the lack of effectiveness of macroprudential policies underlines the importance of dealing with global imbalances directly.

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About 24 years ago, there was already a meeting in Paris on how to solve imbalances, which I attended.

The context was supportive. Two years earlier, in 1985, G7 countries had met at the Plaza hotel and managed with a little noise to move the dollar exchange rate. The conclusion was that international coordination was the solution to everything and in particular exchange rates.

But the wider range of macroeconomic policies also needed to be discussed. In the area of fiscal policy coordination, we could not agree at the end of the day. Indeed, macroeconomic policy is made at home. In order to succeed in reducing imbalances, we have to show the damages of uncooperative policies.

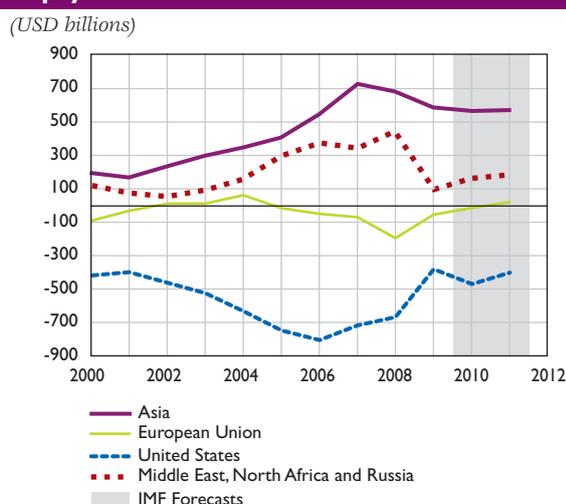
What imbalances remain after the crisis? There were many imbalances before the crisis. Did we learn the lessons? Are we on our way to correcting these imbalances that were generated by the crisis and the response to the crisis? Are we returning to the old paradigm or are we changing paradigm?

What imbalances are we talking about? We can identify six global imbalances:

- International payments imbalances
- China and the global system
- Monetary and fiscal imbalances
- Imbalances and the euro zone crisis
- Imbalances between developed and developing countries
- Long-term demographic challenges.

These are interrelated matters. For lack of time, I will leave aside these last two imbalances.

Chart I Current account of balance of payments

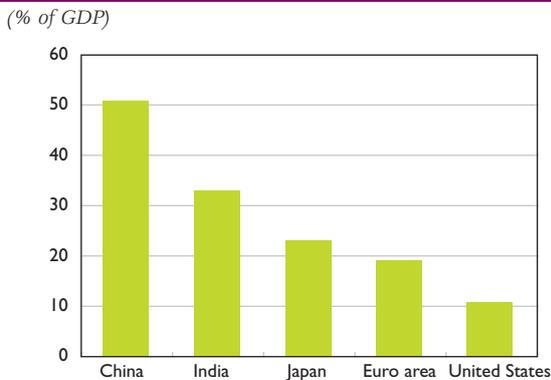


Sources: IMF, last update Oct 01 2010, WEO (2010 and 2011 forecast).

First, the current account. We have experienced many years of large current account deficits and surplus. It is in the nature of economic development to go through different phases of accumulation and disaccumulation. However, there have been polarised current account imbalances in the system for a very long time, leading to a large accumulation of assets. In China, foreign exchange reserves have grown to USD 2.8 trillion, mostly accumulated over the past five years. Of the entire US treasury bills issued since the beginning of history and held abroad, 20% are held in China. This is a very significant concentration, which is a cause of concern, as nobody likes to be dependent on a single banker.

However, the underlying cause of these imbalances is the huge gap in savings: gross national savings represent 51% of GDP in China, compared with 11% in the United States. Hence, exchange rates – another Plaza Accord focusing on exchange rates – cannot significantly correct these imbalances.

Chart 2 Gross national savings – 2009

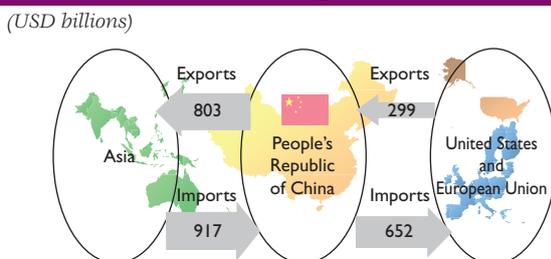


Sources: IIF, (last update: China – Dec 2010, India – Sep 2010, JPMorgan, IMF-IFS (last update: Oct 2010).

We need a win-win strategy, targeting the roots of these imbalances. In China, savings are high due to the lack of social security and pension systems and under-developed capital markets, which prevent companies from distributing dividends. In the United States, there needs to be significant cuts in the budget deficit, which cannot be limited to discretionary spending but should also include entitlements.

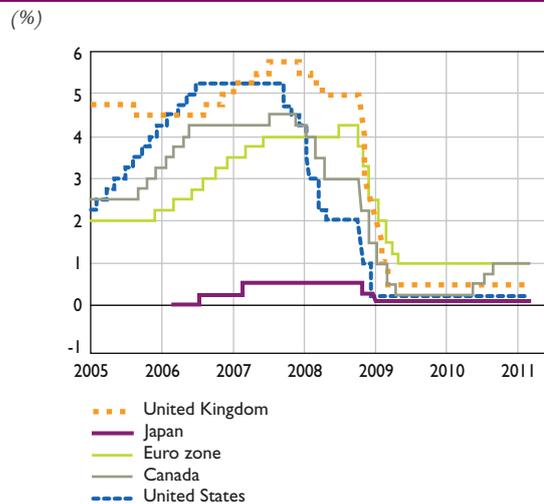
This leads me to the question of China and the global system. But important things have already happened regarding China. China has a surplus vis-à-vis the United States and Europe but a deficit vis-à-vis the rest of Asia, reflecting the global production chain. Hence, exchange rate adjustments have to be made, but we need to recognise that we are in a multilateral context. China is an opportunity and not just a threat: European exports to China have risen from 5% of GDP 10 years ago to 19% last year and US exports

Chart 3 China's role in global trade



Source: National Bureau of Statistics of China, 12-months through January 2011.

Chart 4 Global interest rates



Source: Bloomberg Market Data, (last observation: 1 March, 2011).

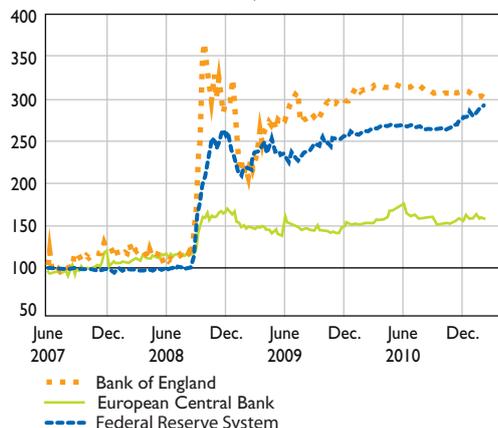
from 3% a decade ago to 19% today. Hence, there have been dramatic changes in the real economy; but the accumulation of reserves, preventing the adjustment of exchange rates as it would imply capital losses for China, is still taking place.

Next, policy imbalances. With the recession, nominal interest rates are close to zero in advanced countries. Real interest rates are negative all over the world and may remain so for a long time. This low-rate policy was a proper policy at the time but it is a source of concern for those who have experienced inflation or hyper-inflation: today we do not see the inflationary pressures but is there something in the pipeline? When we do see them, we will have missed the train.

Moreover, alternative mechanisms of monetary policy have been developed. The balance sheets of central banks have changed dramatically in both size and composition. The strategy adopted by the European Central Bank differs from that of the Federal Reserve System (Fed) and the Bank of England, which went further into such alternative mechanisms. However, the financial markets do not price a shortage of liquidity. There is maybe a shortage of confidence, of clarity about the regulatory framework, of oil... So why design a strategy to increase liquidity? Monetary quantitative easing aims at impacting

Chart 5 Total assets of key central banks (indexed levels)

(indexed, end of June 2007 = 100)



Sources: NSI's, last observation: ECB (Feb 25, 2011); Fed, BoE (Feb 23, 2011).

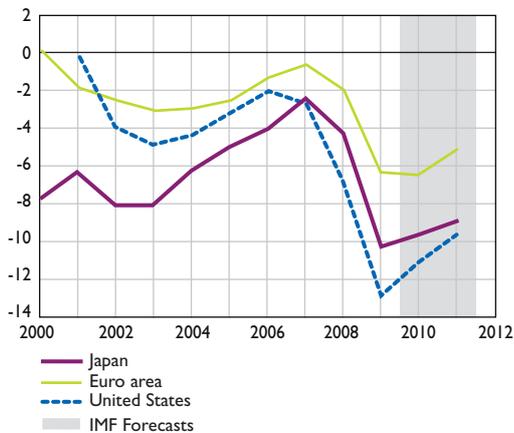
specific parts of the interest rate curve to boost investment and growth; but the credibility of this policy would be enhanced if it was explained why we should be immune from the past failures of these policies. For example, when in the 1960's the Fed launched "Operation Twist" in an attempt to influence part of the yield curve, it appeared difficult to operate on a specific segment of the capital market.

Fiscal policy is no less challenged after the crisis, with a fast expanding sovereign debt. Although it may not be necessary to turn fiscal policy around today, it would be helpful if financial markets received indications of the future strategy for a U-turn to reduce the debt to GDP ratio. In the United States, it would be necessary to adjust entitlements, but the issue is currently taboo.

Finally, in Europe, despite a whole decade of efforts towards greater convergence, the crisis has driven countries away from convergence, in terms of unemployment, unit labour costs, fiscal positions, domestic and external debt. The changes in savings since the introduction of the euro are a cause of concern: savings have risen in Germany but fallen significantly in Ireland, Greece and Portugal. The current account at the European level is in balance but within Europe, situations vary considerably, with Germany posting a 5.8% of GDP surplus and Ireland, Spain, Greece and Portugal a 5.3% deficit. In this respect, financial markets tell us something: spreads have dramatically widened among euro area countries, which calls into question the idea of pan-European bonds. And European governments, once the benchmark, now post higher CDS premiums than corporates, which is an unhealthy situation.

Chart 6 Fiscal positions: General government balance

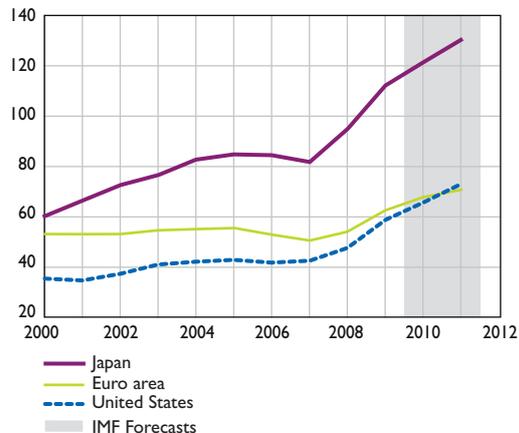
(% of GDP)



Sources: IMF, WEO Database, last update Oct 1 2010, WEO (2009 estimate, 2010 and 2011 Forecast).

Chart 7 Fiscal positions: Net debt

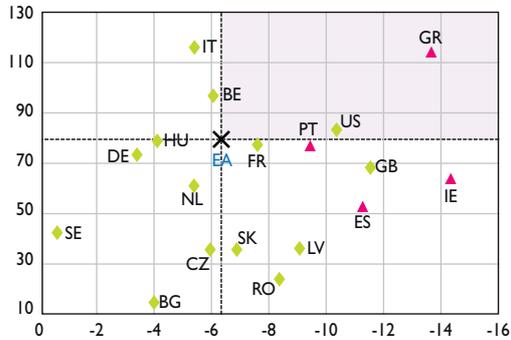
(% of GDP)



Sources: IMF, WEO Database, last update Oct 1 2010, WEO (2009 Estimate, 2010 and 2011 Forecast).

Chart 8 Gross government debt and budget deficit

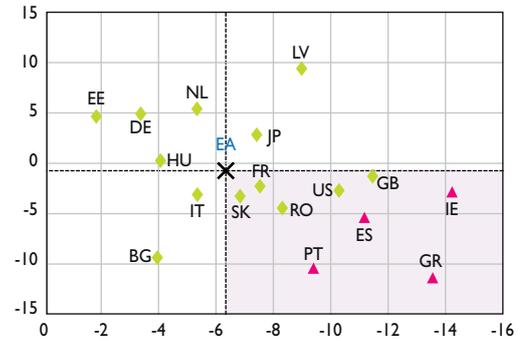
(% of GDP 2009; X axis: General Government Balance; Y axis: Gross General Government Debt)



Sources: Eurostat, National Statistical Institutes.

Chart 9 Current account balance and budget deficit

(% of GDP 2009; X axis: General Government Balance; Y axis: Current Account)



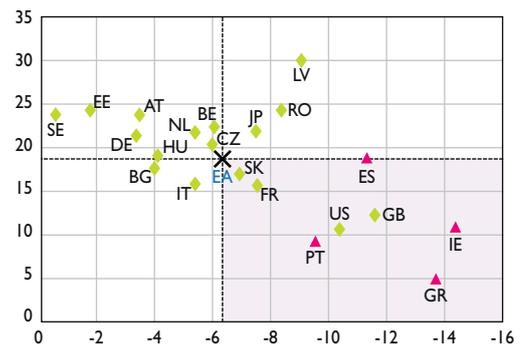
Sources: Eurostat, National Statistical Institutes.

BE Belgium	ES Spain	IT Italy	SE Sweden
BG Bulgaria	FR France	JP Japan	SK Slovakia
CZ Czech Rep.	GB United Kingdom	LV Latvia	US United States
DE Germany	GR Greece	NL Netherlands	"Bad zone"
EA Euro area	HU Hungary	PT Portugal	
EE Estonia	IE Ireland	RO Romania	

What are the lessons to be drawn? We may list countries according to their level of public debt and deficits, according to their current account and public deficit, according to their gross national saving rate and budget deficit. In most of these respects, Greece, Ireland, Portugal and Spain are in the bad zone.

Chart 10 Gross national saving rate and budget deficit

(% of GDP 2009; X axis: General Government Balance; Y axis: Gross National Saving Rate)



Sources: Eurostat, National Statistical Institutes.

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First, let me thank the Banque de France and Governor Noyer for a very stimulating symposium. It is a real privilege to participate in this event, in such a distinguished company.

A little more than three years ago, the world economy experienced a dramatic convulsion, the ripple effects of which are still with us. In the years leading to that crisis, many worried about excessive external deficits in the United States, and surpluses in other parts of the world, the so-called “global imbalances”. These global imbalances are still with us. The latest International Monetary Funds (IMF)’s World Economic Outlook forecasts that US current account deficits will worsen from 0.5 to around one percent of world output between now and the end of 2012. How should we think about these “post-crisis” imbalances?

Theory and the careful study of the historical record tell us that excessive current account deficits are dangerous. They are dangerous for lenders, who have few –if any– means of recourse in case of non-repayment by sovereign borrowers. They are also dangerous for borrowers since fear of default will limit the amount lenders are willing to commit (“debt intolerance”), the instruments they are willing to invest in (over-reliance on debt instruments), as well as the maturity and currency denomination of foreign debt (with a preference for short term debt denominated in the currency of the lenders).

A sudden withdrawal of foreign funding, for reasons real or imagined, often has a destructive effect on the borrower’s economy. As foreign capital flows abruptly reverse course, domestic firms, banks and households need to compete for scarce loanable funds, triggering a sharp increase in the domestic cost of capital. The accompanying collapse in aggregate demand generates a sharp recession. Simultaneously, the domestic currency collapses, as the economy reorients itself towards the production of export goods and away from the consumption of foreign ones. This currency adjustment exacerbates the severity of the downturn, as banks and domestic borrowers with foreign-denominated liabilities suddenly find themselves with unsustainable debt levels.

Countries have limited ways to avoid such a dramatic adjustment. They need access to liquid, marketable funds in sufficient quantities. Few financial instruments on the asset side of a country’s balance sheet offer the required liquidity. Managing sudden stops thus requires a combination of self-insurance through the accumulation of official reserves, and access to international liquidity through other means (IMF stabilisation programs, central bank swap lines, reserve pooling etc...).

By contrast, it was often claimed that current account balances between the different regions of a single country are of little import. First, to the extent that sub-national entities use a common currency, this removes the possibility of a run on reserves as a source of instability. Second, sub-national entities share a common regulatory and legal framework that delineates clearly the rights and responsibilities of creditors and borrowers, and limits the severity of ex post hold up problems. For instance, most legal systems include a bankruptcy framework that specifies the conditions under which the claims of lenders need to be reduced to permit borrowers to continue operations. By reducing the scope for ex post disagreements, these regulatory arrangements allow the emergence of more complex, equity-like, financial instruments between lenders and borrowers that allocate risk more efficiently. Third, sub-national entities share into a common national fiscal authority that can step in and absorb regional losses.

This conventional wisdom shaped much of the analysis of global imbalances prior to the crisis. The large current account deficits of the United States, culminating at 6.0 percent of output in 2006, were perceived as a source of global instability. Many worried that such large external borrowing would leave the United States exposed to a sudden withdrawal of foreign capital, triggering the mother-of-all current account reversals. By contrast, most economists viewed the comparatively larger current account deficits of some euro zone countries (Spain –9.5%, Greece –11.3%, Portugal –10.7% of their respective output in 2006) as largely benign and irrelevant in the context of the single currency project.

Three years later, we know better! The United States suffered many blows, but lack of external funding was not one of them, despite elevated external deficits. By contrast, many peripheral European economies learned the hard way that current account deficits still matter, despite the common currency. Why did this turn out to be so?

Before I answer this question, let me emphasise that the conventional view is largely correct. Excessive external deficits *are* a grave source of economic vulnerability. Nowhere is this clearer than when looking at the policy approach of the increasingly globally and systematically relevant group of emerging market economies (EMEs). Following the many external crisis of the 1990s and early 2000s (including but not limited to Mexico in 1994, East Asian economies in 1997, Brazil in 1998, Russia in 1999 and Argentina in 2001), many emerging economies actively decided to reduce their internal and external exposure. As I show in recent work conducted with my colleague Maury Obstfeld, EMEs spent the better part of the last decade systematically improving their monetary and fiscal position, reducing domestic and international leverage, and accumulating vast amounts of international reserves (Gourinchas and Obstfeld, 2011). This dramatic improvement in fundamentals allowed most EMEs, who historically had been quite vulnerable to global financial crises or global recessions, to weather the recent economic storm surprisingly well despite a rather dramatic turnaround in capital flows. The one important exception to this pattern is Central and Eastern Europe, where many countries suffered from capital flow bonanzas almost surely associated with the prospect of eventual adoption of the euro and the battery of regulatory reforms aimed at facilitating goods and financial market integration since joining the European Union. This "*acquis communautaire*" lowered country risk premia and encouraged large and eventually unsustainable external deficits. The experience of these countries, too, reinforces the conventional view: they borrowed excessively; eventually, they suffered a dramatic sudden stop.

For most EMEs, then, an important policy driver was that it would be difficult to experience a sudden stop if they did not depend on external funding! That calculation proved largely right, but raises an important systemic question: by actively trying to achieve external surpluses, aren't these countries either preventing a rebalancing or forcing the global

rebalancing on deficit countries? The question of the asymmetry between surplus and deficit countries is a perennial question in international macroeconomics. It was at the center of discussions during the Bretton Woods conference, and remains a thorny point of contention more than fifty years later. Then, as now, it is not clear how to implement a superior incentive compatible system and efforts at reforming the international monetary system (IMS) along that dimension most likely will prove futile.

Can we, then, understand why the conventional wisdom made incorrect calls for the United States and the countries at the heart of the European sovereign debt crisis? The answer is yes. To do so, we need to think more carefully about the link between external imbalances and financial imbalances, and about the structure of international portfolios. In other words, we need to go from *net* to *gross* imbalances.

Let's consider the United States first. A careful examination of US internal and external flow of funds reveals that the United States did indeed experience a sudden stop. But this sudden stop did not occur along precise geographical lines. Rather, it occurred by asset class. Markets for structured credit instruments, in particular those related to the subprime segment of the United States housing market, were the first to freeze in 2007, followed by corporate bond and equity markets worldwide. The resulting portfolio adjustments were global, not country specific. Investors worldwide deleveraged and rebalanced their holdings towards safer assets. Foreigners liquidated their US risky portfolio; US investors liquidated their foreign risky portfolio. Much of the proceeds were then channeled back into US Treasury securities, as the global demand for safety soared.

The evolution of the US current account reflects these dual dynamics. The United States was both the issuer of the global reserve asset, and the largest issuer of so called "private-label" safe assets, chief among them the AAA-rated tranches of residential mortgage backed securities (MBSs). Many of these supposedly safe assets proved "toxic" once the US housing market started to drift down. As this reality sank in, investors worldwide rebalanced their portfolio towards the only "macro" safe assets, the US Treasuries. In this respect, it was quite remarkable to observe that many EMEs' central banks refrained from deploying the large amounts of official reserves at their disposal to defend their currency. Overall, the collapse in

markets for structured products did generate a run away from US risky assets, yet that run was more than offset by a surge in capital flows towards US Treasuries.

The crisis vividly illustrated how the unique position of the United States at the center of the IMS shielded it from a potentially devastating sudden stop. At the same time, it delivered a severe blow to the US net external position. As the price of US Treasuries surged, and that of risky securities worldwide collapsed, Gourinchas, Rey and Govillot (2011) show that the market value of the US external portfolio declined by roughly 14 percent of GDP.

The structure of the international portfolios delineates the propagation of gains/losses from the US financial markets to the rest of the world. To a large extent, a key factor was the relative exposure to “private-label” safe assets (e.g. asset backed securities –ABSs) vs. “macro” safe assets (e.g. Treasuries). Here again, one can observe a strong geographical line of demarcation. European financial institutions were largely exposed to US housing market via holdings of AAA-rated structured credit products. They suffered large losses (Acharya and Schnabl, 2010, and Bernanke *et al.* 2011). By contrast, EMEs largely eschewed the more toxic segments of the US financial markets as their central banks bought the safety of US Treasuries (some of the EMEs' sovereign wealth funds were not so lucky: they invested in the US financial sector at precisely the wrong time).

If we step back a little, an interesting pattern begins to emerge. As a supplier of reserve assets, the United States is a global provider of liquidity. This liquidity is especially useful in times of global crisis, when most other stores of value come undone. As a consequence, US Treasuries enjoy a global “liquidity premium” (Krisnamurthy and Vissing-Jorgensen, 2010). This liquidity premium allows the United States to fund itself cheaply. Some of this funding is recycled into the global economy in the form of holdings of illiquid and higher return assets. This well-documented pattern (Gourinchas and Rey, 2005, and Gourinchas, Rey and Govillot, 2011) helps the United States sustain moderately higher levels of external deficits than would otherwise be possible. In other words, the conventional view is partially upended when considering the country at the center of the international monetary system.

Of course, a central question left unexplored in this discussion is why and how some assets become global reserve assets. A central concern must be the capacity to repay of the issuing sovereign, since this underpins the value of government securities. Should that fiscal capacity evaporate, it is difficult to see how the corresponding assets could retain their safe status. Should the fiscal capacity of the United States be challenged, one would expect the conventional view to reassert itself with a vengeance.

What about the euro zone? Here the story is more familiar and the European sovereign debt crisis seems plucked straight out of the old playbook. Following the adoption of the common currency and without effective cross-border financial regulation, country risk premia collapsed, financial imbalances built-up rapidly, and capital flowed into peripheral countries on the anticipation of faster economic convergence and growth, creating large implicit financial risks. Along the way, many of these countries experienced a large real appreciation, accompanied by a boom in the non-traded sector, especially housing. Eventually, the economy stalled.

As always, the combination of excessive external and internal leverage proved lethal. While markets lacked a domestic currency to speculate against, they eventually realised that, despite the common currency, national governments remained responsible for their past follies (Greece, Portugal) or that of their financial sector (Ireland, Spain...). In the absence of a European crisis resolution mechanism that would absorb local losses within a larger economic area, markets recognised that sovereigns would eventually become vulnerable. In other words, simply removing currency risk proved far from sufficient to eliminate the possibility of sudden stop which materialised when investors refused to roll-over private and public external liabilities of the peripheral countries.

The preceding discussion highlights the importance of the demand for global safe assets in interpreting recent current account evolutions for the United States. It also emphasises that some European countries, despite the common currency, are perhaps not so different from Argentina circa 2001 or Mexico circa 1994.

Going forward, what imbalances can we anticipate after the crisis? In the short term, the prospect for

significant rebalancing is limited. EMEs are growing strongly, while industrial countries are still struggling under the weight of the recession, in a context of fiscal consolidation. EMEs fear overheating, industrial countries fear a double dip. This calls for a gradual monetary tightening in EMEs, while monetary conditions need to remain accommodating in industrial countries, especially as they step on the fiscal brakes. Tighter monetary conditions in EMEs and accommodating ones in industrial countries imply a realignment of currencies, with an appreciation of EMEs currencies. This appreciation is a natural component of the transmission mechanism of monetary policy in a globalised environment. Yet it is fiercely resisted by many EMEs. This resistance creates huge carry trade opportunities. It also further stimulates the demand for safe assets in the form of reserve accumulation, to offset private capital inflows. Eventually, as inflation concerns become more pressing, one can anticipate that EMEs will lean less against the appreciation of their currency as a moderate appreciation of the domestic currency can help ease inflation pressures. In the meantime, the desire to prevent an adjustment in currencies contributes to exacerbate the demand for safe assets. This increased demand occurs in the context of reduced supply of alternative safe assets. In fact, following the global

re-pricing of risk after the crisis, markets are somewhat more discerning of “real” vs. “fake” safe assets: exit ABSs; exit sovereign debt of peripheral euro zone countries. The United States has become the sole provider of global liquidity. The increase in demand for safe assets is thus accompanied by a decline in the effective supply. The market implications are clear: this pushes down the equilibrium rate of return on safe assets (US Treasury yields) and helps sustain larger US external deficits. It may also exacerbate financial instability, if excessively low returns to capital fuel risk taking, increase leverage and facilitate the emergence of financial bubbles.

In the short run, then, both for macro and financial reasons, one should anticipate that global imbalances will not disappear. The underlying imbalance between the demand and supply of safe assets may well persist and generate further financial instability.

At a longer horizon, one can only hope that a combination of financial development in emerging markets and better management of the demand for global liquidity, especially on the part of central banks, will both lead to an increased supply as well as a reduced demand, helping rebalance the global economy.

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In these remarks, I will describe the global imbalances at a very abstract and academic level, but I hope to lead the reader to a very simple and practical point. Specifically, global financial policymakers need to navigate a shift to a world in which equity-like instruments play a much larger role in global finance, and debt instruments a much smaller one. The real problems with the imbalances come when they contribute to excessive concentrations debt accumulation.

Three and half years after the global financial crisis began, the role of the global imbalances remains controversial. While many see the imbalances are a key driving force behind the financial meltdown, there are others who see the imbalances as an innocent bystander at the scene of the accident. Given the determined official initiative to reduce the global imbalances, as well as the huge political and economic inertia behind them, it is worth stepping back to ask why large sustained current account and trade imbalances might be a problem.

Of course, in a world of perfect financial markets, trade imbalances would not be a problem. They would simply be the outcome of efficient intertemporal trade and risk sharing. Governments would always behave responsibly. All contracts would be contingent, and all claims would be honored without question. This, of course, is the world that Kenneth Arrow and Gerard Debreu illustrated in their classic papers more than half a century ago. With enough ancillary conditions, such as decreasing returns to scale (and therefore no monopoly power), one gets an efficient allocation over all of time. Such a world may seem rather abstract and unrealistic to practitioners, and of course it is.

Thus it may surprise some readers that many important scholars have argued that the Arrow-Debreu model yields a surprisingly good approximation to real macroeconomics, as for example real business cycle theorists have argued. This has proved a fruitful line of research although largely at a methodological level. In a real business cycle world, it would not matter

if the European Central Bank (ECB) and the Federal Reserve pursued different strategies for trading off inflation and growth, because in a real business cycle world, monetary policy is irrelevant.

Monetary policy does matter in New Keynesian models, which allow for wage and price rigidities in goods and labor markets. New Keynesian economics, the framework for many models used in modern central banks, accepts most of the basic tenets of real business cycle theory, save only for the assumption that there is a singular imperfection in labor and production markets that prevent prices and/or wages from moving to market clearing values. Yet, by and large, these models also assume perfect financial markets, in no small part because it is a great analytical convenience.

Perhaps surprisingly to non-specialists, the trade balance in perfect market models is essentially no more than an accounting identity, a scorecard that depends on the shocks buffeting the global economy and determining where the best investments are to be found. Debt accumulations are not a great concern, first because the notion is utterly abstract in a world dominated by state contingent assets, and second because all contracts are honored anyway. There is complete transparency, and perfect enforcement. In the purest form of the complete markets model, even regulation is ceremonial since there are no frictions or information asymmetries.

Of course, this is a large literature that attempts to introduce various kinds of market imperfections but the bottom line is that it is surprisingly difficult to meaningfully integrate the current account.¹

The failure of most models to meaningfully incorporate debt instruments presents a profound problem for their real world applications. This, more than anything, accounts for their spectacular breakdown both in the runup to the global financial crisis –their failure to detect problems– and even more so in the models over-optimism about how quickly economies would emerge from the crisis.²

¹ Obstfeld and Rogoff do develop a class of models where current accounts matter, their so-called “new open economy macroeconomics models”: Obstfeld (M.) and Rogoff (K.) (1995): “The intertemporal approach to the current account,” in G. M. Grossman and K. Rogoff, (eds) *Handbook of International Economics*, vol. 3, Amsterdam.

² Reinhart (C.) and Rogoff (K.) (2009) “This time is different: eight centuries of financial folly”, Princeton University Press. In this work, the authors show that in fact, the recoveries after financial crises are slow and painful, particularly in terms of unemployment.

Debt markets bear little resemblance to the assets featured in the canonical frictionless perfect markets paradigm. The most important problem is that fact that in bad states of nature, debt contracts are notoriously difficult to enforce. Whether referring to sovereign, corporate or individual debt, most debt contracts are no more than a starting point for conversation when an economic implosion occurs. Our ambiguous attitude towards enforcement of debt contracts is something very deeply ingrained in our social culture.

This is why sustained global imbalances are a much bigger problem when they are financed (overtly or covertly) by debt instruments, whether it be bank lending, bond lending or even official lending. It is debt markets, with their attendant imperfections, that lie at the center of most financial crises. To reduce the risk of financial crisis, policymakers need to create a system where state contingent claims (such as stocks) play a far larger role, and where pure debt instruments play a correspondingly smaller role. We are very far from such a world today. Bank deposits, private debt securities and government debt constitute well over two-thirds of the roughly USD 200 trillion global stock of financial assets, with equity instruments (stocks) playing a far smaller role.³

Unfortunately, altogether too many countries have a myriad of policies creating just the wrong incentives, with a huge bias in favor of debt over equity. The US housing boom might never have reached the same proportions if homeowners were not allowed to treat interest payments on home loans as a deduction from gross income on taxes. Corporations are allowed to deduct interest payments on bonds, but not dividend payments on equity. Central banks and finance ministries are also complicit, since investors know that if a firm goes bankrupt, equity holders will be allowed to lose their shirt whereas bond holders can count on buying a new suit with their bailout money.

Western policymakers and economists often portray Islamic financial systems, with their emphasis on shared risk and responsibility in lending, as less efficient than western systems that put no strictures on debt. Yet one can equally argue that Western financial intermediation is far too skewed towards debt, and as a consequence generate many unnecessary risks.

Fixing the debt bias in global finance is not easy, especially as it involves fixing deeply ingrained national policies. In the United States, for example, no politician is anxious to say that home mortgage deductions should be eliminated, or that dividend payments to individuals should not be taxed, given that tax has already been paid at the corporate level. At the same time, equity markets in many emerging markets are like the Wild West, with unclear rules and lax enforcement. Many economists believe that lack of transparency and weak corporate governance help explain relatively low price earnings ratios in many parts of Asia, even though high future earnings growth prospects should otherwise lead to very high price/earnings ratios.

A better approach would be to generate more equity-like instruments to help countries borrow. This entails not only domestic institutional and legal reform as I have discussed, but also the development of new frameworks firmly supported, and even catalysed, by the international community. Yale economist Robert Shiller has proposed that countries should issue bonds with payments linked to country growth, thereby providing a natural cushion against shocks. The idea has been studied at the International Monetary Fund (IMF), and Argentina even adopted a version of these bonds in the aftermath of its 2001 default, but further official help is needed to catalyse growth in the market.

The creation of sovereign debt restructuring mechanism, as the IMF proposed in 2001 and has been proposed for Europe quite recently, would also help level the playing field for equity and direct foreign investment as opposed to debt. A sovereign debt restructuring mechanism would make it easier for the international community to allow countries to restructure their debts, much as officials are trying to do for large banks. If successful, such efforts would reduce the risk of tax-payer bailouts by making ex-post subsidies less automatic. Of course, borrowing could potentially fall, but that fall might help spur development of alternative more equity-like instruments.

In its surveillance of the global imbalances, the IMF can also help by assessing the vulnerability of each

³ The McKinsey Global Institute estimates the total global stock of financial assets to be USD 194 trillion at the end of 2007.

country's financial structure, with the ratio of equity to debt being an important element. Monitoring will not be an easy task, as financial firms and country statisticians can find very clever ways to dress up debt and equity, leaving large vulnerabilities that can be difficult to detect. One can also imagine a myriad of political and legal problems with equity, for example countries seizing direct foreign investment, or adding burdensome ex-post taxes on dividends. Certainly, the IMF can help promote greater transparency about debt instruments, which is sadly lacking. In my book with Carmen Reinhart, referred to above in footnote 2, we find that governments are spectacularly non-transparent with their own debt, including hidden debt, contingent debt and even plain vanilla debt. Unfortunately, precisely because debt is measured so poorly, and trade balances are measured more accurately, the IMF will probably continue to need to monitor current accounts as part of its surveillance process even if, in principle, what one really wants to know is the entire balance sheet of a country.

I certainly do not want to be seen as saying that a wholesale shift from debt to equity would eliminate all concerns about the global imbalances. We have many examples of nationalisations and other seizures showing that neither foreign direct investment (FDI) nor stock markets are without problems. But they are far less likely to be systemic than debt markets. I also want to underscore that economic theory shows why debt markets may be surprisingly large in environments with significant imperfections such as information asymmetries. Nevertheless, it is clear that many of the factors that bias the world towards debt are policy induced, and perhaps held in place by inertia and special interests, problems that could be addressed over time.⁴

Introducing fundamental changes to shift financial markets away from debt instruments and towards instruments with better risk sharing properties – at the very least to level the playing field – could be a big part of any lasting solution to the global imbalances.

4 For a related discussion of the ideas presented here, see “Global imbalances without tears,” Kenneth Rogoff, *Project Syndicate*, March 2011. <http://www.project-syndicate.org/commentary/rogoff78/English>

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I think that this is a very important conference, especially because, as we know, this year is the G20 presidency of France; and France has put on the table the important question of how to reform the international monetary system (IMS). The topics we are discussing today including the issue of global imbalances are essential.

If you think about these questions at the center of the debate on the reform of the IMS, we have many to address. First, we have a problem of large global current account imbalances in general; and as I will discuss, in particular the asymmetry of adjustment between surplus and deficit countries when we consider these imbalances. How can we resolve this asymmetry?

Second, there is a problem of how to satisfy the demand for liquidity especially by emerging market economies (EMEs) that worry about liquidity risk and maturity mismatches. As we have seen that during the recent crises foreign reserves seem to never be enough when liquidity runs do occur, which raises the question of how to deal with this massive demand for self-insurance by emerging markets.

Third, we also have these imbalances because advanced economies have a system of floating exchange rates while EMEs fear excessive exchange rate flexibility and resist it via their intervention policies. How can we change the system in a direction of greater exchange rate flexibility for both advanced market economies (AMEs) and EMEs, a flexibility that can contribute to the reduction of these global imbalances?

Fourth, there is the “Inconsistent Trinity” problem: EMEs are intervening aggressively to prevent their currencies from appreciating; this implies that they risk losing monetary and credit independence; they are therefore now resorting increasingly to capital controls as a way to deal with the inconsistent trinity between fixed exchange rates, monetary independence and capital mobility. So, as they go

in the direction of capital controls, how can we have rules or principles about managing capital flows better in a world in which we want to go towards greater globalisation of capital?

Fifth, how can we move in a world in which the dominant role of the US Dollar as a major reserve currency could change over time? This is becoming an issue in the vein of the famous and traditional “Triffin Dilemma”: a country whose currency represents the global reserve currency will undermine this special status once it has run current account deficits for too long. I think this is a fundamental issue in terms of the global imbalances.

And sixth, I think it is also important to think about questions related to a restructuring of unsustainable debts including ideas like the one of Kenneth Rogoff of converting debt into equity as a way of dealing with the issues of excessive leverage. Indeed, the problems of the global economy are not just problems of excessive amounts of debt and leverage in the private and public sector but also of illiquidity. Eventually if these issues are not just of illiquidity but also of insolvency, debt reductions, debt restructuring or conversion of debt into equity have to be a part of the solution.

So these are the important key issues that we have to think about. This session is about which imbalances that still exist after the crisis and that are very relevant for thinking about how to reform the IMS. But probably the starting point for the discussion should be the imbalances that led to the crisis in the first place.

Hence I will start with the problem of global current account imbalances because I think that one of the fundamental problems in the IMS. This is not just the issue of the US Dollar's status as the main reserve currency; it is, more importantly, the problem of asymmetry of adjustment that exists between countries that are running current account deficits towards those who are running surpluses.

This has been a fundamental problem for a long time. It led to tensions in the 1930's and was not really resolved when the Bretton Woods system was instituted after the Second World War. It manifested itself again in the last decade with these global imbalances. An important caveat is the following one: traditionally the asymmetry argument has been that if you are running a current account deficit eventually that is going to become unsustainable because either the bond market vigilantes are going to wake up or you are going to run out of foreign reserves; thus, eventually a currency and a financial crisis occurs that force adjustment and reduction of such deficits. For a surplus country, however, there is an asymmetry as there is not the same kind of pressure by the markets to adjust because you can always intervene for a long time, accumulate reserves and thus prevent your currency from appreciating; you can thus maintain your current account surplus for a very long period of time. But there is one important caveat: if there is a country that has "exorbitant privilege" in the sense that its currency has the status of a major reserve currency –and in the case of the current financial system this is the United States with the Dollar– then by being able to print its own currency this country can run deficits for much longer than otherwise; so it is not forced to adjust. So the argument that markets force adjustments of countries with a current account deficit has an exception in the case of a country that provides the major reserve currency. As a consequence, the deficits of this country can last for much longer than otherwise.

Now if we think about the causes of this very severe financial crisis over the last few years and if I were to characterise the global economy I would say that on one side we had a bunch of countries –starting with the United States– that were the consumers of first and last resort, spending more than their income and running ever larger current account deficits for a long period of time. Usually we emphasise the role of the United States in this context, but let us not forget that there were many other countries that were in the same situation: the United Kingdom, Spain, Ireland, Iceland, some of the Baltic States, some of the countries in Central Europe and even some other countries like Australia and New Zealand. Common to all these countries was a housing bubble and/or a credit bubble; this bubble was driven by easy monetary policy, a loose supervision and regulation of the financial system, excessive leverage and risk taking. That bubble led to an increase in wealth

especially housing wealth; and even though part of the increase in wealth was fake as was driven by a bubble that eventually burst, it led –via wealth effect and home equity withdrawal– to a sharp increase in private consumption and a reduction in savings rates. Thus, the boom in residential investment implied that as private savings were falling while residential investment was rising, a large current account deficit emerged. Hence, these current account deficits were associated with a large accumulation of debt mostly private debt of the household sector, of the financial system and even of parts of the corporate sector. Of course since some of this wealth was fake –wealth driven by an asset bubble– this accumulation of debt and investment in relatively unproductive forms of capital like housing capital eventually was going to become a problem.

Now, on the other side of the world of course you had the producers of first and last resort. These were the countries that were spending less than their income and were running ever larger current account surpluses. These were China, emerging Asia and a number of other EMEs but also, among the advanced economies, countries like Japan and Germany. All these countries were having high savings rates for a number of reasons –including probably demographics in the case of China, Japan and Germany– and these high savings rates were behind the large current account surpluses.

Now the problem was of course the fact that the surplus countries were willing and able to finance the deficit countries which enabled those countries which were running current account deficits to keep this unstable equilibrium based on rising leverage continue for a long time. The deficit countries could borrow cheaply starting with the United States but not just the United States; even the deficit countries in the periphery of the euro zone benefited from that ability to cheaply finance large external deficits.

So these were the global imbalances; and while people were referring mostly to the imbalance between the United States and China or between the United States and other EMEs, similar kind of current account imbalances existed even within the euro zone. The European Central Bank (ECB) and the Europeans attempted to dismiss the importance of these imbalances within the euro zone by saying that the global imbalances were between the United States, Asia and China because the euro zone overall did

not have a current account deficit; it was rather in a balance. However, the overall balance within the euro zone was hiding the fact that Germany and part of the core was running surpluses while most of the periphery was running large external deficits. And these imbalances eventually became a source of severe financial distress even for the peripheral countries of the euro zone.

Now this happy party of debt, leverage and imbalances lasted for almost a decade but eventually the accumulation of unproductive forms of capital, housing capital and accumulation of debt in the private sector became unsustainable. The subprime crisis and the housing bust in the United States and other countries led to a financial crisis which had elements both of excessive debt and insolvency but also elements of illiquidity because of maturity mismatches of households and financial institutions. So once the crisis emerged you had a balance sheet imbalances became unsustainable you had a collapse of private demand in most advanced economies that led a global recession. Many deficit countries experienced not only a credit bust and a credit crunch; but there were also severe issues of illiquidity for banks, households and eventually even governments.

As a consequence, we experienced the Great Recession and of course at some point after the collapse of Lehman Brothers this Great Recession even led to the risk of another Great Depression.

The global policy response tried to prevent this Great Recession from becoming something much worse. So what was the policy response? First, it was monetary stimulus in the form of traditional reductions of interest rates all the way down to zero, the provision of liquidity to countries and or agents in the economy that are presumed to be illiquid rather than insolvent; so we had both domestic and international lender of last resort support and we also had unconventional monetary policy in the various forms of quantitative or credit easing policies.

On the fiscal side we also tried to prevent a collapse of economic activity by:

- allowing automatic stabilisers to kick in;
- perform Keynesian policies to try to stimulate demand by increasing spending and cutting taxes;

- we also socialised some of the private losses through a variety of policies of backstopping of the financial system and/or of the household sector; call them "bailout" policies.

But the result of these policy reactions especially on the fiscal side was a very sharp rise in public debts and deficits primarily in advanced economies. This occurred as a result of partially automatic stabilisers, fiscal responses and the socialisation of losses of the financial system in countries like the United States, United Kingdom, Ireland, Iceland, Spain and many other countries.

For a while, the policy stimulus on the monetary and fiscal side compensated for the collapse of private demand that occurred in both deficit and surplus countries; indeed, even the surplus countries went into a recession given the collapse of demand in the deficit countries and their net export source of growth. So you had a recession even in Germany, Japan, East Asia or a near recession as in China. But after a while we had two types of problems:

- the recovery of private demand remained anaemic in many of the deficit and leveraged countries because of the burden of large private debt and the need for their deleveraging via lower spending and higher savings;
- the bond market vigilantes now imposed fiscal adjustment and discipline starting with the euro zone, the United Kingdom and other countries.

So, in many cases you could not keep on boosting demand on the domestic side via the fiscal channel as both private and public sector deleveraging has to start to occur. Thus, we saw the anemic, sub-par, below trend U-shaped recovery of many advanced economies suffering of balance sheet problems.

So what is the balanced solution that we need to return to sustained growth in a world where there are these debt and global imbalances? It is clear that deficit countries are going to have a painful process of private and public sector deleveraging and therefore they are going to have weak domestic demand. Thus, these countries need a nominal and real depreciation of their currencies to reduce their trade deficit and thus restore their growth towards its potential rate. But if that process of nominal and real depreciation

in the deficit countries occurs and thus the surplus countries need to experience a nominal and real appreciation of their currencies then in order for these surplus countries to maintain their own economic growth close to potential they need to switch away from a model based mostly on export led growth. Thus, they have to reduce their savings and increase domestic spending, especially on consumption, in order to maintain their economic growth close to potential. So that is the adjustment that is necessary in the surplus and the deficit countries to return to potential growth.

The trouble –and obstacle to this orderly adjustment– is that in most of the surplus countries either for political reasons or for structural ones the ability and willingness to reduce savings and increase consumption is limited. Thus, these surplus countries can, at least for a while, resist the nominal appreciation of their currencies via aggressive forex intervention; look for instance at what is happening in China and other emerging markets. Moreover, for a while these surplus countries can even resist a real appreciation of their currency if they do sterilised interventions –that prevent monetary growth and thus prevent a rise in inflation; and if they impose capital controls they can resist even longer this nominal and real appreciation. Indeed, at least for a while you can resist a real appreciation by preventing inflation from rising via policies that partially mop up the liquidity caused by the forex intervention.

However, think about the fundamental problem: the deficit countries need a nominal and real depreciation which the surplus countries successfully can prevent for quite a while. So if surplus countries can prevent the nominal and real appreciation of their currencies, then the only way in which the necessary real depreciation of the deficit countries can occur is through deflation in such deficit countries.

But we know that deflation is destructive because it leads then to significant increases in the real value of private and public debt. So you have a process of debt deflation and that is exactly the risk that the periphery of the euro zone may experience over time. Since the exchange rate tool is not available to individual euro zone countries the necessary real depreciation occurs via destructive deflation that increases the real burden of private and public debts and ensures that such countries remain in a stagnation or recession trap. Now the United States had tried to avoid this risk of deflation as an adjustment channel for its real

depreciation by doing monetary easing, in particular quantitative easing I and II. So this was the response of the United States: an attempt to trigger a weakening of the United States to avoid deflation and to achieve the needed depreciation. But, for a while China and many other emerging market economies have resisted this dollar weakening through the forex policies. So this currency tension is the source of the risk of currency wars and, eventually possibly, trade wars.

In the case of the euro zone you have a bigger problem because, by having one common currency, you cannot have this independent nominal depreciation of the peripheral countries that have a deficit when the surplus countries (Germany) can live with and enjoy a stronger euro. Therefore the relative price adjustment between the core of Europe that is running surpluses and the periphery that is running deficits has to occur through a painful process of deflation in the periphery countries that eventually changes relative prices. The question is: can that deflationary process be associated with restoration of economic growth in the periphery? My worry is that it is not the case. You might –as in Argentina in the late 1990s– have a nasty debt deflation in the periphery that will maintain stagnation and recession and that, eventually, is going to lead to disorderly defaults and debt restructurings.

In the case of emerging market economies that have been resisting their own real appreciation, at least for a while, through sterilised interventions, eventually this intervention is only partially sterilised. The combination of the US implementing quantitative easing I and II, China effectively pegging to the US Dollar, and other emerging market economies also aggressively intervening because they do not want to lose global market shares to China, this becomes a process that eventually leads in these economies to overheating, goods inflation, credit and asset bubbles and even commodity inflation. So this is one of the risks we are facing right now; the risk of a rise in inflation in many emerging markets.

But let us think about how we can resolve these unsustainable debt problems. We started with private debt, we pretended this high private debt was only a situation of illiquidity even when in cases of clear insolvency. Therefore we socialised some of these private losses and we ended up with a large stock of public debt. And now we have a public debt

problem in a number of countries that eventually lost market access. Then, we have tried to deal with this public debt problem in the euro zone by essentially having super-national authorities –the International Monetary Fund (IMF), the European Financial Stability Facility (EFSF), the European Financial Stabilisation Mechanism (EFSM), the ECB– bailing out the country that is distressed, first Greece, then Ireland, soon enough Portugal, and maybe eventually even Spain.

But if you think about it, kicking the can down the road, going from private debt to public debt to supernational debt, is not a solution because if the problems are of insolvency, rather than illiquidity, no one is going to come from the moon or Mars to bailout the IMF or the EFSF or the ECB. So at some point you have to resolve otherwise these debt problems.

Let us think briefly: how can you resolve these debt problems? One solution of course is high growth because growth can heal most wounds, especially debt wounds. The problem is that in most of the advanced economies growth is going to be anaemic for the next few years because of the painful process of private and public sector deleveraging. So high growth is not going to resolve the debt problem.

The other solution is to consume and spend less in the private and public sector, save more and thus reduce debts over time. That is a good idea but it leads –as we know– to the paradox of thrift. If people suddenly start to consume too little and save too much the economy is going to double dip and then the debt to income ratio is going to rise because output is falling; and thus the debt becomes again unsustainable. The paradox of thrift holds both for households and

governments: in the public sector excessive front loaded fiscal austerity –however necessary may be in the medium term to avoid a fiscal train wreck– might lead to another recession and thus undermine the debt stabilisation process. So the paradox of thrift is a constraint to how much you can resolve your problems by saving more.

One solution could be inflation but of course this is taboo for central banks. You could reduce debt deflation through inflation but inflation has its own consequences. Once inflation expectations are out of the genie bottle pushing them back into the bottle is going to be very hard and painful. Inflation could lead to a collapse of the Dollar if the creditors of the United States resist the attempt to wipe out the real value of their dollar holdings that inflation entails. So high inflation, however appealing theoretically may be, is not a sensible solution to debt problems. Therefore if growth is not going to resolve the debt problem, if saving more and consuming less is going to lead to the paradox of thrift and inflation is a bad idea as it is a capital levy, the only other solution at the end of the day is debt restructuring, debt reduction or even debt conversion into equity. We have to do it for insolvent sovereigns, we have to do it for insolvent banks and financial institutions as well as for households and for countries that are in clear conditions of insolvency.

In many cases the problems we are facing are not just of illiquidity but also of insolvency. Thus, unless we focus more on these problems, destructive debt deflation and eventually disorderly defaults are going to occur. So I would certainly want to put on the table of discussion of the reform of the IMS the question of orderly debt restructuring when necessary and unavoidable.

SESSION 2

THE CHALLENGES OF SURVEILLANCE AND COORDINATION

Chairperson:	Mario DRAGHI, Governor, Banca d'Italia Chairman, Financial Stability Board	51
Speakers:	Lorenzo BINI SMAGHI, Member of the Executive board, European Central Bank	54
	Olivier BLANCHARD, Economic Counsellor, International Monetary Fund	63
	Choongsoo KIM, Governor, Bank of Korea	66
	Olli REHN, Member of the European Commission for Economic and Monetary Affairs	70

Mario DRAGHI
Governor, Banca d'Italia
Chairman, Financial Stability Board

The recent crisis has greatly raised our awareness of two processes that have been shaping the world economy: first, the growing interconnections between economies, that make the global system vulnerable even to local shocks; second, the move towards a multi-polar setting in which no single dominant politico-economic power exists and new subjects, such as the fast-growing emerging economies, are coming to the fore.

Both processes are a reflection of fundamentally benign developments, such as free trade, free capital movements and the spreading of technological innovation which have brought enormous benefits to the world economy. However, as the crisis has forcefully shown, the potential for inherent instability is greater; and the damage that may result from this instability is too large to ignore.

In the past decades, after the end of the Bretton Woods regime, weak forms of policy cooperation prevailed. In terms of the international monetary arrangements in place, it was a “non-system”. For a long time, stronger forms of international policy coordination were deemed unnecessary: many theoretical and empirical analyses in the 1980s converged to show that any gains from such macroeconomic coordination were likely to be of modest size.

However, we may now need to revisit that fairly sceptical conclusion. In the new global environment, policies (and policy errors) in individual economies can have substantial spillover effects. Moreover, the costs of uncoordinated policies may increase in a non-linear fashion if those policies lead to large systemic breakdowns.

In my view there is one main, simple lesson we should take from the crisis: if we want to preserve the gains brought by open, competitive markets on a global scale, we need stricter and more effective international cooperation.

The common response to the crisis was a quantum leap forward in international economic relations. With a coordinated, prompt and synchronous set

of policy measures we managed to avoid the worst consequences for the global financial system and the world economy. As the situation improves, it would be naïve to think that we can now go back to the previous loose coordination.

There continue to persist underlying “fault lines” (to use the words of Raghuram Rajan) that pose significant risks at the global level: an uneven recovery, diverging economic policies, protracted low levels of interest rates, increased sovereign debts, large imbalances in international payments, and pressures on exchange rates.

Correspondingly, we should continue to improve international cooperation. There are three main priority areas:

- first we need to complete the reform of the international financial system;
- second, we have to develop a better system of macroprudential surveillance, refining the authorities’ ability to identify systemic risk and, especially, to act upon early warnings;
- third, crucially, we need to establish a coherent set of norms, rules of conduct and formal institutions shaping coordination of national economic policies.

We have come a long way towards strengthening the financial system since the crisis began. My own experience in the Financial Stability Board is that it is certainly possible –at times even surprisingly easy– to come to a shared diagnosis and devise a common response even to extremely complex problems, when there is a willingness to do so.

The new Basel III regulatory framework is now in place, with new capital and liquidity requirements and limits to financial leverage. Its gradual phasing-in will prevent it from hampering the economic recovery. The over-the-counter derivatives markets will have a sounder and more transparent basis. We have identified many of the perverse incentives that encouraged excessive risk taking

–in banks' executive compensation systems, in the role of credit rating agencies and in accounting rules– and we have begun to rectify them. The activity of the Financial Stability Board (FSB) is now concentrating –in accordance with the mandate given by the G20– on two crucial priorities: tackling the moral hazard problem posed by systemically important financial institutions (SIFIs) and extending the rules to the “shadow banking system”.

The reform of the financial system is however not complete. There is a danger that, as the world economic recovery advances, the sense of urgency –a major propeller so far– might now weaken. It would be unforgivable not to keep the momentum in international cooperation and miss the occasion to decisively strengthen the international financial system. There are two obvious compelling reasons for this. First, neither our public finances nor our citizens would be ready to withstand a new crisis. Second, in a global system where external imbalances remain large and capital flows may be subject to sudden reversals, it is essential to rely on a financial system that is at the same time efficient and more robust, immune to the perverse incentives that led to the accumulation of excessive risks that generated the crisis.

Consistent implementation of the agreed reforms at the national level is the arena where the effectiveness of international cooperation will be tested. In the absence of a global enforcer the only practical way forward is to strengthen both the peer review process and the reach of international institutions, *in primis* the IMF, which retains the responsibility for surveillance over the global financial system.

Significant progress has also been made in setting up top-down, system-wide oversight arrangements at the national, regional and international levels. These arrangements are designed to deliver more encompassing surveillance, with broadened macroprudential perspectives and better mechanisms for triggering actions on identified risks. Examples include the European Systemic Risk Board in Europe, the Financial Services Oversight Council in the United States, and the International Monetary Fund (IMF)-FSB Early Warning Exercise to assess macrofinancial risks and systemic vulnerabilities at the global level.

A lot remains to be done in this, in many respects, uncharted territory. We now need to improve analytical tools, design instruments of intervention,

elaborate organisational arrangements by which the different authorities can effectively share information and, especially, coordinate actions to prevent and to manage critical situations. A painful lesson of the recent crisis –and the many preceding it– is that the authorities did too little to act upon “early warnings” that, though weak and imprecise, were often clear enough to have warranted more forceful preventive action.

Challenges even more severe lay ahead on the macroeconomic policy front. Here the risk is very tangible that, with the emergency now over, a purely domestic orientation again prevails in economic policy decisions –a tendency of which some signs are unfortunately already evident. The consequence would be larger imbalances, increasingly erratic capital flows, and greater exchange rate volatility –all factors that ultimately can hamper the recovery. It is imperative to resist such tendencies and abide to the pledge –repeatedly stated by the G20– to work together to ensure a lasting recovery and set the world economy on a path of strong and sustainable growth.

A “new Bretton Woods” is perhaps a rhetorical exaggeration but we do need a common realisation that the present, weak cooperation arrangements for managing the world economy are inadequate. Greater interdependence requires stronger policy cooperation and some form of disciplining mechanism to ensure that national policies are mutually consistent. Stronger cooperation in turn necessarily presupposes an agreed set of benchmarks and rules in all the relevant fields. Individual economies should not only continue to “keep their own house in order” –which is probably at this point a still necessary, but insufficient condition. They must also be induced to take more fully into account the global effects of their own policies, whose mutual consistency needs to be ensured.

To achieve this objective we need a decisive improvement in the governance of the international monetary system, addressing those problems that have hindered its proper functioning. The central issue is, in my view, the need for a more effective process of multilateral surveillance over national economic policies.

Some steps forward are being taken. The “legitimacy deficit” of international bodies has been at least in part addressed with the agreement on the IMF

quota reform at the Seoul summit of November 2010; the very same leadership role taken by the G20 in international economic affairs is a recognition of the need to increase legitimacy and representation. The IMF has been given more resources and more incisive monitoring power, for example by making Financial sector assessment programs (FSAPs) compulsory for all systemically relevant members over a 5-year cycle, and is enhancing its traditional machinery for surveillance (bilateral and multilateral).

In parallel the G20 is proceeding with its own peer review process (the Framework for Strong, Sustainable, and Balanced Growth) to identify objectives for the global economy and the policies needed to achieve them. The evaluation of the mutual consistency of such policies is the goal of the “mutual assessment process” (MAP). The MAP requires an assessment of the nature and the root causes of impediments to the adjustment of persistently large imbalances and indicative guidelines, composed of a

range of indicators, to facilitate a timely identification of imbalances that require preventive and corrective action. This is an essential and, at the same time, a very demanding task.

As agreed by the G20, there must be a shift to a more balanced global pattern of demand. Some progress in this direction is being made, but important challenges remain. Emerging market countries of systemic relevance ought to prioritise structural reforms and greater exchange rate flexibility to strengthen domestic demand; further fiscal consolidation is necessary in advanced countries, based on growth-friendly measures; finally, all G20 members should implement product and labour market reforms to boost their potential output.

It is also to be welcomed that both the IMF and the G20 under the French presidency have started ambitious and comprehensive discussions on possible avenues for the reform of the international monetary system.

Let me conclude by saying that in all the above fields Europe can and should bring to the international debate a wealth of experience. In Europe, we have come –in some cases rather belatedly– to the realisation of the close interdependence among our economies and of the consequent need for effective rules and governance. The single currency is acting as a powerful device to reinforce surveillance, coordination and the peer review process in an institutional setting where economic policy decisions remain to a very large extent in the national domain. This makes Europe a natural laboratory for experimenting solutions that can be of use at the global level as well.

Lorenzo BINI SMAGHI

Member of the Executive Board

European Central Bank

There is a broad consensus that the crisis we've been living through the last three years is the result of imbalances accumulated both at the macro and micro level, mainly in advanced economies. Surveillance of these imbalances was clearly insufficient. Any prescription to improve the resilience of our economies must thus include a strengthening of surveillance.

I will concentrate in my remarks on macroeconomic issues.

There has been a lot of discussion on what went wrong with surveillance, in particular at international level. The IMF should be praised, in particular, for having its own surveillance process independently evaluated. The results of this analysis were published in January this year.¹ Maybe in Europe we should follow the same transparent and open procedure to get a better understanding of what didn't work.

The recommendations offered by the Independent Evaluation Office are mainly procedural and concern the workings of the IMF. They included creating an environment that encourages candour and diverse or even dissenting views; overcoming the silo mentality; speaking truth to power; and delivering clear and consistent messages. These are recommendations which should probably be taken to heart by other institutions too.

I would like to address a more fundamental issue, concerning the ability of our current analytical tools to capture the changes which have taken place over the last two decades. As surveillance is ultimately based on a conceptual framework, then if that framework is biased, we are inevitably less able to capture imbalances and to detect risks to the world economy. So it's important to assess whether the crisis has challenged some of the main assumptions of our framework.

Work in this area has already started, to some extent. One key assumption which has been challenged, for instance, regards the efficient market hypothesis.

In prevailing models, markets are assumed to price risk efficiently and to reflect underlying fundamentals. Thus, as long as asset prices do not reflect a change in the market assessment of risk, the risk is assumed not to exist or is underestimated. And often policy-makers behave as if the risk simply didn't exist as has been the case for sovereign risk or inflation risk.

I would also like to examine another fundamental assumption of our economic models which has largely gone unchallenged, or at least has been insufficiently considered in my view. It is the impact of "globalisation", i.e. the strong and sustained growth of emerging market economies (EMEs), on the long-term trends of the world economy, including the effects on advanced economies (Charts 1 and 2). In most of our macro models, long-term variables, such as potential growth or the "natural rate of interest" or the non-accelerating inflation rate of unemployment (NAIRU), play a very important role. They determine, for instance, the output gap, domestic inflationary pressures, and as a consequence the structural indicators that are used to assess fiscal policy and the degree of monetary accommodation. These variables are estimated in large advanced economies like the United States as if the latter were a closed economy. They are considered as independent variables for the rest of the world.

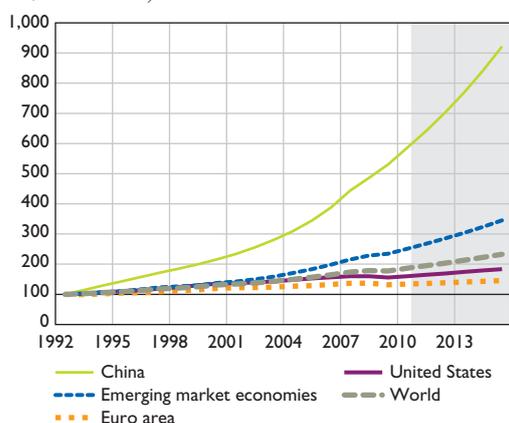
To use some model terminology, most of our models are built on the assumption that \bar{y} –which represents the long-term growth rate of the economy– is influenced mainly by domestic factors such as productivity and population growth. Similarly, r^* –which represents the world interest rate for most small open economies– is assumed to be determined by long-term equilibrium conditions in the United States.

Given the importance of these variables for our models, a bias in their measurement would have a direct impact on the assessment of economic conditions, on the forecasts and on the policy prescription. It would seriously undermine surveillance. For instance,

¹ IMF Performance in the Run-Up to the Financial and Economic Crisis: IMF Surveillance in 2004-07, 10 January 2011. See <http://www.ieo-imf.org/ieo/pages/ieohome.aspx>.

Chart 1 Real GDP in selected countries and regions

(annual; 1992 = 100)

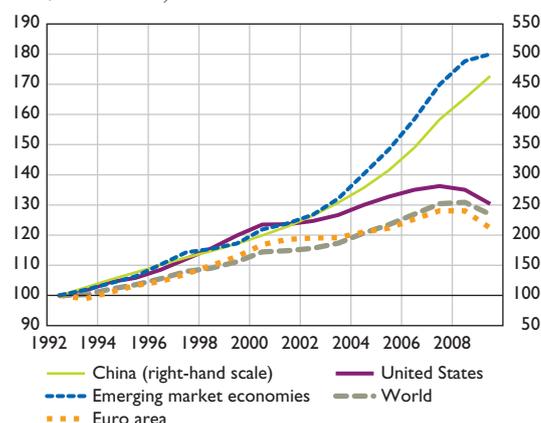


Note: Data based on IMF WEO October 2010 database. Grey shaded area indicates the evolution based on the IMF October 2010 WEO projections up to 2015.

Sources: IMF WEO and ECB staff calculations.

Chart 2 Real GDP per capita in selected countries and regions

(annual; 1992 = 100)



Note: Data shown is calculated on the basis of 2000 constant US dollar series.

Sources: World Bank Development Indicators Database, Haver Analytics and ECB staff calculations.

if the long-term trend growth of the economy is overestimated, the output gap (in absolute terms) would as a consequence be overestimated too and so would the deflationary risks. Monetary and fiscal policies would then be considered, *ceteris paribus*, as excessively tight and there would be a bias towards excessive expansion, with a view to achieving an optimistic rate of growth. The borrowing capacity of countries, households and companies would also be overestimated if their potential growth were overestimated. Ex post, the miscalculation of growth potential would result in an excessive accumulation of debt, both public and private, a misalignment between the interest rate and its long-term “neutral” level, and insufficient savings.

As shown by Kydland and Prescott in their work on time inconsistency of optimal policy, which was later applied to monetary policy by Barro and Gordon, policy-makers who aim at excessively “optimistic” growth will conduct an inconsistent policy which will generate instability. The solution to this problem, at least for monetary policy, is to set a rule or establish an independent central bank which is aware of such an inconsistency and has a sufficiently long horizon to avoid it. This assumes however that the independent policy-maker knows what the right, “not over-optimistic” long-term growth of the economy is. He or she also has to know what the right model of the world economy is.

This brings me back to the question I raised at the start, i.e. the impact of globalisation on the long-term growth of advanced economies. Let me put it differently: is potential growth in those economies being affected by the fact that one part of the world, with nearly two-thirds of its population, is growing on average by 6-7% (or more) per year? If so, in what ways? One hypothesis which we may want to assess and test is that the so-called “long term equilibrium” variables which are so important in our economic models are in fact affected by globalisation, as advanced economies are becoming smaller and smaller. Not taking this into account may induce policy-makers to misjudge the situation and cause international surveillance to fail.

These are clearly very difficult issues to examine. However, it seems to me that the analysis so far is insufficient. I won't go into detail but would just like to pose some questions.

I | Growth

The first issue, or question, I would like to raise is whether the increase in growth rates in EMEs has had, and will have, a negative or a positive impact on trend growth in advanced economies.

Taking a standard neo-classical trade model, the answer depends on various assumptions.

The prevailing consensus is that globalisation provides opportunities for all, including advanced economies; their growth will not necessarily suffer. This is the conventional wisdom. Paul Samuelson, however, has pointed out the restrictiveness of assumptions which are required to obtain the above-mentioned result.² He draws attention to the fact that the long-term impact of innovation abroad in a world of free trade and mobile capital is not unconditionally welfare-enhancing. His observations have not given rise to much debate. Maybe it's time to revive such a debate.

There are several ways in which faster growth in EMEs may have a negative impact on advanced economies and dampen their production potential, at least for some time. One way is through the classical side-effect of comparative advantage. If the dislocation phenomenon is long and sizeable enough, the transition to the new steady state is bound to take a long time, during which growth will be subdued.³ There may be reasons for believing that the adjustment process we are currently experiencing, with hundreds of millions of people gaining access in a very short time to the market economy, is not necessarily consistent with the simplified trade models that we used in order to analyse changes in comparative advantage.

Some of these issues linked to globalisation have been considered from the perspective of technological change. In *Fault Lines*, for instance, Raghu Rajan considers that the main reason for the rising inequality in the United States over the last 20 years has been the inability of the middle class to adapt to new technologies. The changes in technology required to maintain the advanced economies' competitive position may be the result of the rise in productivity and the competitiveness of EMEs, especially if this affects low value-added sectors as well as increasingly high-tech sectors and services.

The US economy was capable of growing at a fast pace prior to the crisis mainly through borrowing. Such borrowing was rational only if households and firms expected their income to increase in the future, at a faster pace, and if asset prices continued

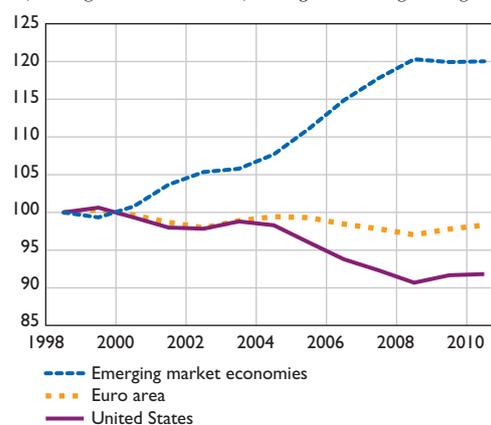
to increase, which ultimately did not happen. In fact, economic growth and asset price increases were the result of overly expansionary fiscal and monetary policies, predicated on measures of output gaps which turned out to be much smaller than estimated in real time, as well as regulatory failures justified by the desire to improve access to borrowing.

Another way in which faster growth in EMEs can impact negatively on growth in advanced economies is through changes in the terms of trade (Chart 3). These changes can occur via different channels. One is through commodity prices (Chart 4). For a given supply, the higher and persistent growth in EMEs is pushing up demand for commodities, in particular food and energy, and increasing these prices permanently, in terms of overall levels and rates of change. Of course, this depends on supply elasticity. However, it may take time to develop new sources of supply that can keep up with demand. The increase in commodity prices weighs negatively on countries which consume more of these products –mainly the advanced economies– and on those with lower productivity growth.

Another “negative-impact” channel is the Balassa-Samuelson effect, according to which prices of manufactures and services in EMEs increase more

Chart 3 Terms of trade developments in selected countries and regions

(annual; average 1996-1998 = 100; three year moving averages shown)



Note: Data based on IMF WEO October 2010 database.

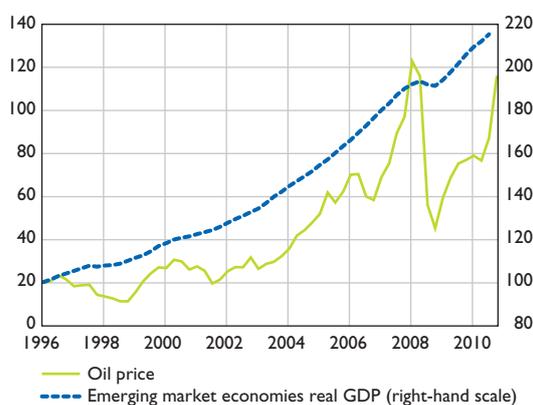
Sources: IMF WEO, Haver Analytics and ECB staff calculations.

2 Samuelson (P.) (2004): “Where Ricardo and Mill rebut and confirm arguments of mainstream economists supporting globalization”, *Journal of Economic Perspectives*, 18, 3, pp. 135-146.

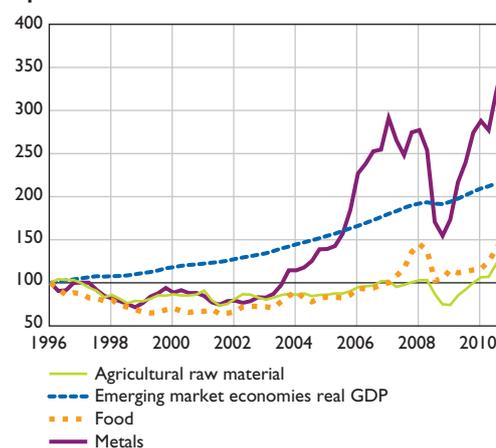
3 Bini Smaghi (L.) (2009): “Towards the G8 – strategies for emerging from the crisis”, LUISS Guido Carli University, Rome 27 May 2009 (www.ecb.int).

Chart 4 Commodity price developments

(quarterly)

a) Brent oil prices and EME real GDP developments

(index; 1996Q1 = 100)

b) Non energy commodity prices and EME real GDP developments

Note: Last observation refers to 2010Q3 for EME real GDP. For Brent oil prices and commodity price indexes data is quarterly up to 2010Q4. Last data point in chart for Brent oil price is spot price on 2 March 2011 and for non-energy commodity indexes January 2011. EME real GDP index for 1996Q2 = 100. Oil prices are quoted in US dollars.

Sources: National sources, Haver Analytics, IMF IFS and ECB staff calculations.

rapidly than in advanced economies. To the extent that these prices remain lower than those in advanced economies, any increase will worsen the latter's terms of trade, especially if domestic production is limited or has been totally offshored.

To sum up, there is a need for more analysis of how growth potential is affected by ongoing developments, such as globalisation. My impression is that there is too little work being done on this issue; I fear that we will exit from the crisis with the same old analytical instruments and assessment that we had prior to the crisis –the very same ones which were responsible for the insufficient surveillance of economic developments and policies.

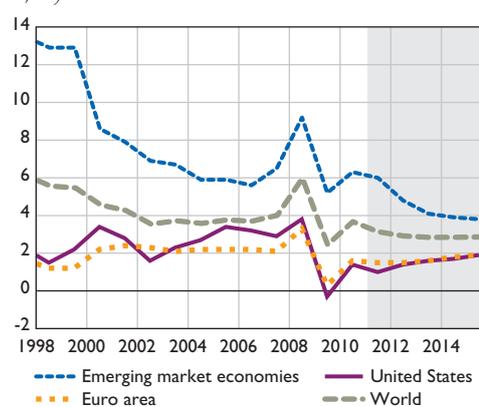
2 | Inflation

Inflation is the second way in which the strong, steady progress of the EMEs is affecting advanced economies (Chart 5). Ongoing increases in the prices of imported products have an impact on inflation in the advanced countries.⁴ This effect occurs through two channels. The first is simply mechanical, arising from the

weight of imported goods in the basket of goods and services purchased by households. For example, food and energy account for about 30% of the average shopping basket in the euro area. Assuming that,

Chart 5 Inflation rates in selected countries and regions

(annual; %)



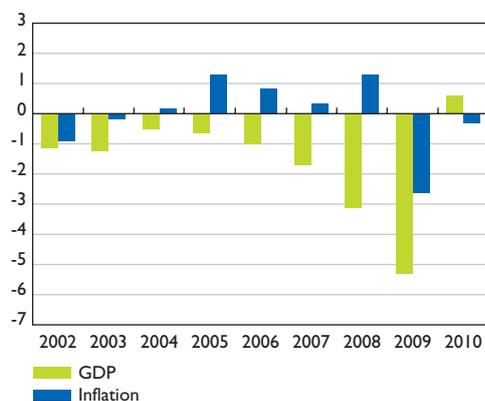
Note: Data based on IMF WEO October 2010 database. Grey shaded area indicates the evolution based on the IMF October 2010 WEO projections up to 2015.

Sources: IMF WEO, Haver Analytics and ECB staff calculations.

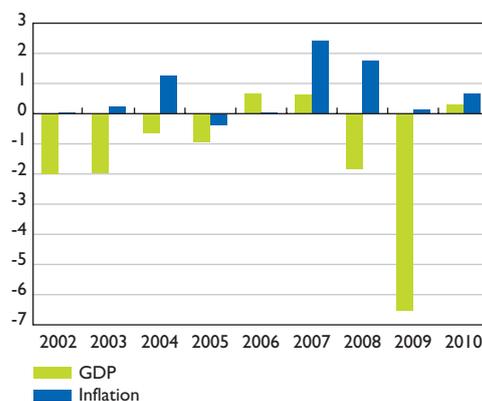
4 Bini Smaghi (L.) (2011): "The challenges facing monetary policy", Bologna, 27 January 2011 (www.ecb.int).

Chart 6 IMF WEO two year ahead forecast errors

(annual; autumn forecasts)

a) United States

(annual; autumn forecasts)

b) Euro area

Note: Forecast errors were calculated as the actual minus the two year-ahead autumn projected figures produced during the preceding year. A positive figure thus shows an underestimation, a negative figure an overestimation.

Sources: IMF WEO and ECB staff calculations.

as a result of increased demand from EMEs and insufficient supplies, commodity prices increase on average by 4% a year, more or less in line with the growth rate of the world economy (or long-term interest rates, according to the Hotelling rule), average prices in the euro area will increase by 1.2% simply because of the effect of these products.

What about the implications for prices of other products? The remaining 70% of the basket includes manufactured goods and services, some of which are imported and others are produced domestically. Assume, for simplicity's sake, that these goods are only produced domestically. If the prices of these products grow at a rate of 2% per year, the overall average inflation is 2.6%, exceeding the 2% objective of most central banks in advanced countries, including the ECB's. If some of these goods and services are produced abroad, the rate of their price increase may be even higher, due in particular to the Balassa-Samuelson effect that I mentioned previously. As the shifting of production to countries with lower wages tends to fade away, any wage increase or exchange rate appreciation in EME will lead to higher import prices in advanced economies.

The central bank then has to choose between either revising the inflation rate objective upwards and taking account of imported inflation, *or* maintaining the inflation objective unchanged, which means lower core inflation. In both cases, headline inflation

is bound to be higher than core inflation. This means that price increases for imported goods must not feed into wages and domestic prices.

The implications for monetary policy are quite complex. The stance of monetary policy cannot be assessed on the basis of core inflation, given that the interest rate incorporates expectations of headline inflation. Keeping the policy interest rate unchanged while headline inflation rises –even if core inflation remains unchanged– implies *de facto* allowing for the monetary stance to become more accommodative. Over time this is likely to impact on core inflation.

It is certainly a challenge to make sure that core inflation remains subdued and lower than headline inflation if imported goods prices increase by more than 2%. This can be achieved without additional monetary policy tightening only in a friction-less world, in which domestic wage and price-setters accept the permanent change in relative prices.

We obviously need more work on these issues, which are particularly relevant in light of past experience. Indeed over the past decade international and national institutions have often made forecast errors in the same direction, underestimating inflation and overestimating growth in advanced economies (Chart 6). This has led to an overly accommodative policy. If we want to avoid repeating the same bias, we should be more alert to this issue.

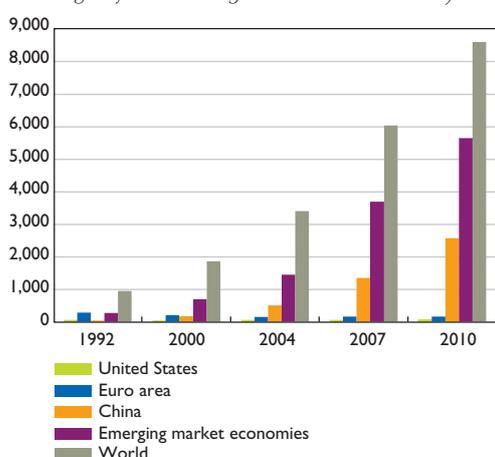
3 | Macroeconomic policies

Another way in which advanced economies are affected by globalisation is through its unbalanced nature. Globalisation is very advanced in trade and economic activity. In the financial area, however, globalisation is more limited, in the sense that EMEs are characterised by an excessive demand for and an insufficient production of high quality financial assets. Many EMEs are net savers and export capital to advanced economies. This is the result of various factors, not least the lower degree of globalisation of their policies and institutions. This limited globalisation can be seen particularly in the lack of independent monetary policies and the pegging of exchange rates, which leads to the accumulation of large foreign exchange reserves and to misaligned prices (Chart 7).

As a result of these imbalances, interest rates in advanced economies may be lowered artificially, to a level which may create problems for their pursuit of price and financial stability (Chart 8). Again, in most of our macro models the interest rate which affects global financial markets (the so-called r^*) is anchored on the US economy. This is clearly not the case in reality as the US rate is affected by capital flows from the rest of the world which are evidently

Chart 7 Foreign exchange reserves in selected countries and regions

(period average – from monthly data – in USD billions)



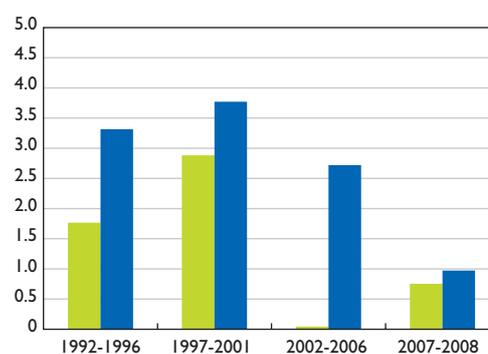
Note: Last observation refers to December 2010 in the case of the United States, China and the euro area and to November 2010 in the case of EMEs and World.

Sources: IMF IFS, PBoC, Haver Analytics and ECB staff calculations.

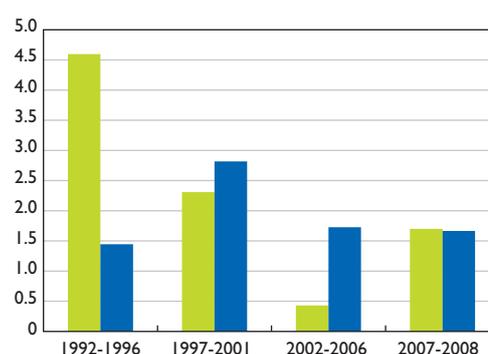
Chart 8 Real ex post short-term interest rates and real GDP growth – United States and euro area

(averages of monthly series)

a) United States



b) Euro area



Legend: Real ex post short-term interest rates (yellow), Real GDP growth (blue)

Note: Last observation refers to January 2011 for the United States and December 2010 for the euro area.

Sources: IMF WEO and ECB staff calculations.

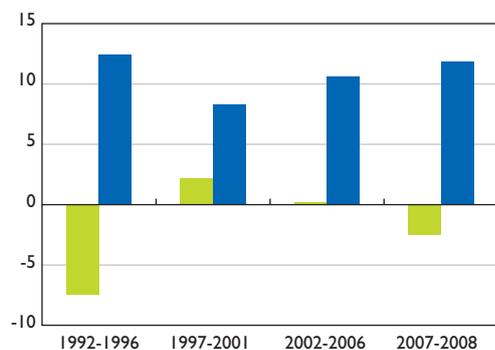
not easy to 'sterilise'. The effectiveness of monetary policy is affected by such influxes. Given that the US interest rate is nevertheless the reference for global financial markets, the reflow of funds produces second and third-round effects on EMEs and on advanced economies (Chart 9). We are witnessing a paradox: EMEs as a whole are being inundated with short-term capital inflows, and yet they are net capital exporters.

We have also failed to understand how these capital flows have increased the liquidity in the financial system and influenced the behaviour of economic agents. For instance, the impact that the pre-crisis low interest rate level had on the propensity of financial institutions to relax credit standards, to increase leverage and to pursue carry trades was

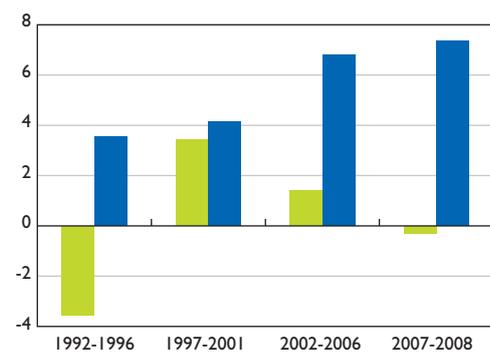
Chart 9 Real ex post short-term interest rates and real GDP growth – China and EMEs

(averages of monthly series)

a) China



b) Emerging market economies



Real ex post short-term interest rates
Real GDP growth

Note: Last observation refers to January 2011 for China and November 2010 for EME aggregate. Aggregate created on the basis of GDP PPP weights from IMF October 2010 WEO (2009 fixed weights).

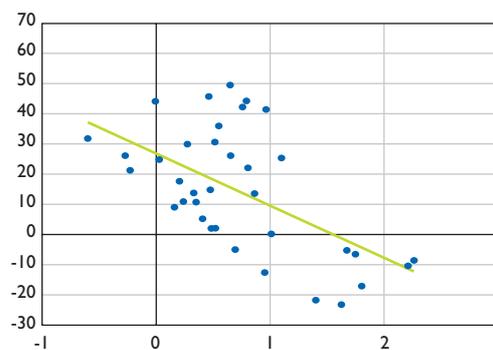
Sources: National sources, Haver Analytics and ECB staff calculations.

underestimated (Charts 10, 11, 12). Policy-makers not only ignored it but considered that this had nothing to do with risks to price stability, that it was related to financial stability and had to be addressed through prudential regulation.

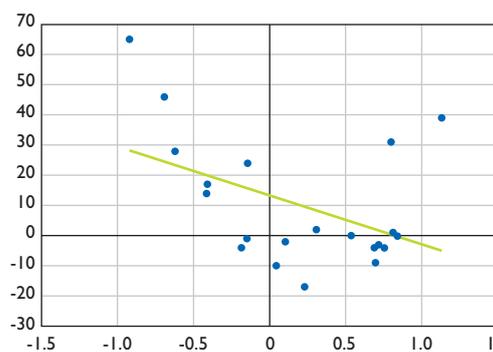
Another issue which requires further discussion is the role that the financial industry has played in advanced economies. The conventional wisdom is that financial innovation and financial deepening promotes growth. However, the evidence is controversial and it is not clear to what extent the industry has benefited the long-term growth potential of these economies. To be sure, it has increased their fragility, especially with respect to their public finances. It is no surprise that most of the countries

Chart 10 Monetary policy accommodation and lending standards (bank's lending standards)

a) United States



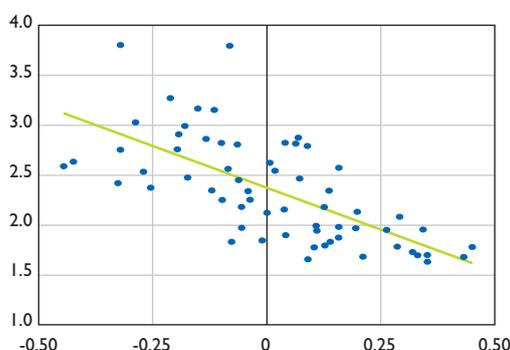
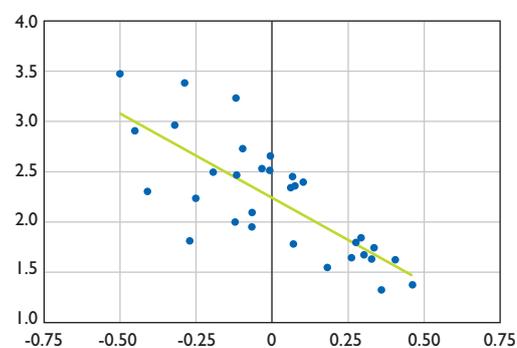
b) Euro area



Note: Monetary policy accommodation is proxied by the residual (percentage points) of an estimated monetary policy reaction function (with inverted sign). For the United States it is based on G. Rudebusch (2009): "The Fed's monetary policy response to the current crisis", San Francisco Fed Economic Letter. For the euro area it is based on an update of the reaction function estimated in L. Christiano, R. Motto and M. Rostagno (2010): "Financial factors in economic fluctuations", ECB WP No. 1192. The lending standards (percentage points) are the net percentage of respondents tightening lending standards to enterprises. The sample is 1999-2007 for the United States and 2003-2007 for the euro area.

Source: ECB Staff calculations.

with the largest deficits and the largest increase in debt after the crisis have been those in which the financial sector played an increasing role, also as a source of fiscal revenue. As the financial industry becomes less profitable, and provides less tax revenue, the gap has to be filled by other sources of taxation, or lower public expenditures, which may be politically difficult to accept. These aspects may not have been fully incorporated in the projections for the adjustment of public finances in many advanced economies, unless it is expected that the financial sector will return to its pre-crisis peak, which is a risky assumption.

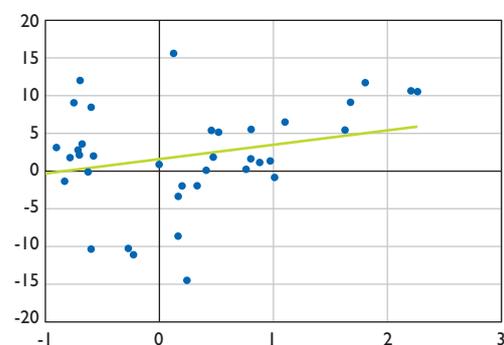
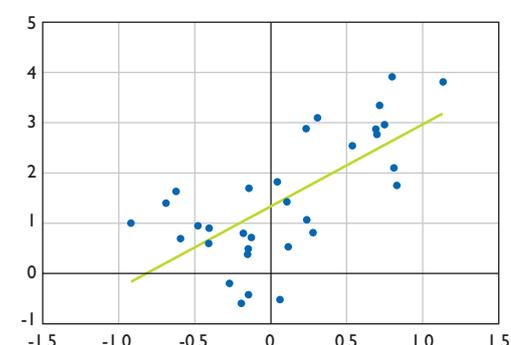
Chart 11 Monetary policy accommodation and price of risk (equity)**a) United States****b) Euro area**

Note: The price of risk of equity is derived from the VIX-index following Bekaert et al. (2010), 'Risk, uncertainty and monetary policy', NBER Working Paper Series No. 16397. The charts (logarithmic scale) are based on the historical decomposition derived from their multivariate model, extended also to the euro area. The sample is 1991-2007 for the United States and 2000-2007 for the euro area.

Source: ECB Staff calculations.

More generally, this crisis has shown the vulnerability of public finances to volatile structures in the economy. In good times, volatile sources of income, such as those from the financial sector or the housing market, may overestimate the soundness of public finances, while the adjustment costs in the downturn may be enormous. A case in point is that of Ireland, which during the pre-crisis years was able to reduce taxes and increase expenditures for an amount of about 12%

of GDP (in the period 2003-2008), thanks to the rise in revenues from the financial sector and from housing. The comparatively large size of these two sectors made Irish public finances vulnerable to the bust of the cycle, leaving personal income tax as the shock absorber until the economy recovers. Interestingly, the fiscal package that is included in the Irish adjustment programme with the IMF is of a comparable magnitude to the pre-crisis fiscal expansion.

Chart 12 Monetary policy accommodation and leverage (highly-leveraged financial institutions)**a) United States****b) Euro area**

Note: Monetary policy accommodation is proxied by the residual (percentage points) of an estimated monetary policy reaction function (with inverted sign). For the United States it is based on G. Rudebusch (2009): "The Fed's monetary policy response to the current crisis", San Francisco Fed Economic Letter. For the euro area it is based on an update of the reaction function estimated in L. Christiano, R. Motto and M. Rostagno (2010): "Financial factors in economic fluctuations", ECB WP No. 1192. For the US leverage is computed as the year-on-year change in the leverage ratio of brokers and dealers. For the euro area it is computed as the year-on-year change in the leverage ratio of OFIs computed on the basis of asset transactions to make sure that movements in leverage are not dominated by revaluation of assets. The sample is 1997-2007 for the United States and 2000-2007 for the euro area. The lead of monetary policy varies.

Source: ECB Staff calculations.

Surveillance has clearly failed to understand this phenomenon. More attention needs to be paid to the overall size and interconnectedness of the financial sector as a whole in the various countries, and to the ability of these countries to

absorb shocks affecting not only a single financial institution but the whole financial system. It is now fashionable to stress-test the banks. It would probably be appropriate to stress-test countries as well.

Let me conclude by suggesting that surveillance of the world economy, in particular some of its systemically relevant members, has to focus more on the sustainability of their policies, in particular their fiscal and monetary policies. Some policies may appear to be sustainable on the basis of assumptions which may turn out to be simplistic, especially those relating to long-term trends of growth and inflation. In particular they may not take sufficiently into consideration the impact of broader developments under way in the global economy.

As Keynes said, we may be “slaves of some defunct economist”. The textbooks which most of us studied depicted a world economy different from the one we are confronted with today and certainly different from the one which will take shape in the coming years. That environment was characterised by one large economy, which set the reference interest rate, and by many small ones. What used to be the leading economies are getting smaller and smaller, while others are growing fast and becoming systemically relevant. The imbalances are the result of both sides not fully recognising these opposite developments and acting as if the old paradigm was still valid.

What is required are not changes at the margin, but a global framework that can encompass the unprecedented changes which are taking place. Otherwise our analysis will fall short, our surveillance will remain weak, and the policy mistakes may become more frequent, and more costly.

Olivier BLANCHARD*Economic Counsellor**International Monetary Fund*

I would like to discuss policy coordination in the context of current account imbalances –or, as some would say, current account balances, depending on where you stand on the issue.

The motivation is an obvious one: the G20 has decided to construct indicators of external imbalances, presumably with the view that these indicators would help identify problems, and, then, maybe nudge or force some countries to adjust their external positions.

This raises two issues, one easier than the other. First, why should countries reduce or want to reduce their current account deficit or their current account surplus? This is the relatively easy issue, and it has been touched upon a number of times this morning. The harder question, but the question that is central to the G20 process, is: why would the international community want a country to do something more (or less) than what this country wants to do?

I just wrote a short paper on these issues with Gian Maria Milesi-Ferretti. You can find it on the IMF web site. Let me present its basic conclusions.

Take the first question first. It is useful to discuss current account deficits and current account surpluses separately, as there is no symmetry here.

Start with current account deficits. We all understand that they are a symptom of something else, and that they can arise for good or bad reasons. Good reasons are, for example, times when the future is bright and it makes sense to save little, or times when investment opportunities are great, in which case one should invest a lot. In both cases, these decisions lead to current account deficits. But deficits can arise for bad reasons as well, either because there are underlying distortions, or interactions between good reasons and underlying distortions which lead to a bad outcome. An example is the dynamic Dutch disease: the reason why the exchange rate appreciates may be a “good” one, but it may have the effect of destroying the manufacturing sector which makes it very difficult for the country to adjust later on.

Turning to the current account surpluses, the analysis is pretty much the same, except for one thing: unlike deficits, surpluses are sustainable. My point here is that the notion of sustainability, which is in the G20 communiqué, does not strike me as the most useful one. Current account surpluses are typically sustainable, but they can be good or bad. They can be good if you have an aging society and want to set funds aside for the future; but they can be bad, as in the case of the saving rate in China, if they reflect limited social insurance for households or a lack of good governance for firms. These are distortions; these are bad and therefore the resulting current account surplus is not desirable. In this case the solution is simple: remove distortions. By doing so, you kill two birds with one stone. The main purpose is not to decrease the current account, but to remove the distortion. For example, providing social insurance to Chinese households is not designed to reduce the current account surplus of China but to make Chinese households better off. Yet, in the process, you will also decrease the current account surplus.

That part, I think, is well understood. In practice, however, assessing what is good and what is bad in each country is difficult. Things become more difficult when we turn to the second question: suppose the countries have done what they thought was best for themselves. They have tried to remove distortions and so on. Is there then a case for the international community to tell them “good for you but not good enough for the world as a whole”?

Here, Gian Maria and I could think of three reasons –which are often mixed together but are, I think, conceptually quite different– which make a case for a multilateral approach to current account imbalances. The first one applies to countries that have large current account deficits and the other two will apply to those that have large current account surpluses.

Take current account deficits. We have learned that current account deficits can end up in sudden stops, when investors decide not to lend anymore, and typically do so in dramatic and quick fashion.

In the event of a sudden stop, some of the creditors get out, but the others get stuck, potentially leading to trouble in creditor countries. The argument is analogous to why we care about large systemic financial institutions: when they go down, they have effects on many others. The argument is basically the same for countries.

The argument is valid. But it is not clear that it leads to singling out the current account deficit. What matters are not only the flows, which a current account deficit is, but also the stocks, in effect the whole balance sheet of a country: how much is debt, how much is equity, and so on. The current account deficit is relevant; the need to finance it may be what triggers the sudden stop. But, at the end, the damage to the country and to others will depend on the whole balance sheet of the country. In the last crisis, in Europe, the countries that suffered the most where indeed the countries with the largest current account deficits, namely the Baltics and some of the euro members, but if you look at the world as a whole (and use econometrics, as I did in a Brookings paper earlier this year) what appears to have been most costly (in terms of lost output) was not so much the current account deficit *per se* but the extent to which it was financed by running up short-term debt. Hence, the current account deficit may be a useful tool to identify potential problems but is unlikely to provide a complete picture.

The other two arguments focus on current account surplus countries. The first of these two focuses on export-led growth. Export-led growth can be described in various ways but, fundamentally, it is a strategy in which you try to achieve a low exchange rate to favor exports, presumably because this is where productivity growth is. Having increased exports, you then have to do something to restrict internal demand so as not to have overheating. Now, this policy is formally equivalent to one of putting tariffs on imports and subsidies to exports, and doing whatever is needed to domestic demand to keep the economy at its potential. Tariffs and subsidies are typically deemed to be unacceptable within the World Trade Organisation (WTO). Shouldn't export-led growth be equally unacceptable?

The argument is convincing, but in practice the case is likely to be difficult to make. It could well be that the motivation behind the low exchange rate and restricted domestic demand is not primarily export-led

growth. It could be for example that a country has a very high saving rate due to distortions which make people save a lot. In that case, that country, in order to achieve internal balance needs to generate demand somewhere else. Namely it needs a low exchange rate and high exports to maintain internal balance. Clearly, in this case, the intent is quite different, the idea is to sustain output domestically rather than try to gain advantage on others. Yet, the outcomes are the same. In short: it is going to be very difficult to prove intent when you see a very large current account surplus; the country is going to argue that it is doing this for internal reasons, and the competitors are going to argue that it is done for other reasons.

One possible approach would be to forget intent and simply say that the countries with very large current account surpluses, say, more than x% of GDP, should take measures to reduce them, no matter what. But this leads to a whole other set of political issues. Some countries will feel that they are being accused unjustly, and are being forced to take measures which go against their best interest. The bottom line here is that the intellectual argument is fairly strong; the relevance of the argument is even stronger now that many of the countries that seem to be pursuing export-led growth are fairly big players in the world economy. Yet implementing anything here is going to be very difficult.

This gets me to my third and last point, which I think in the current context must be the most relevant. It applies to current account surplus countries.

In the current world economic environment, some countries are at the zero interest bound, at the liquidity trap. In this case, a higher current account surplus by other countries will decrease demand to this set of countries, and given that they cannot use the interest rate, this will decrease these countries' output. Put another way, if China insists on having very large positive net exports, other countries including the United States will be "forced", in a way, to have negative net exports and will have a hard time sustaining demand and growth.

I think this argument is both logically correct and relevant. An important footnote is that in general, in normal times, the argument does not carry much water; in normal times, if you have a decrease in net exports, you can offset this by decreasing the interest rate or by an expansionary fiscal policy. But this

is clearly not the situation today. Under current circumstances, there is a fairly solid case for saying that, if surplus countries were willing to decrease their current account surplus, this would be a good thing for other countries. The surplus countries could probably offset the adverse effects of lower exports on demand by increasing domestic demand and so this would have no effect on their domestic output.

The next question, however, is: why should these countries oblige? What do we have to give in exchange in order to induce them to do so? They are probably not going to do it out of the kindness of their heart. One can think of various answers, none of which I find fully convincing. In the end, solidarity must be part of the reason.

Let me go back to the G20 process.

One can have a very pessimistic view of what the G20 Mutual Assessment Process (MAP) can achieve. One can say: yes, there are good conceptual arguments for introducing multilateral restrictions on what countries can do. But in practice, it is going to be very difficult to agree on these restrictions. And it will be

even harder to implement them. In particular, proving intentional export-led growth is going to be very hard.

But one can also have a more optimistic view, which is mine. As luck would have it, it turns out that, in the current economic environment, removing some of the most obvious domestic distortions would be good for the countries themselves, and would go a long way toward solving the multilateral problems. If China were to provide better social insurance, it would be good for the Chinese people, and it would also decrease their current account surplus, and this would be useful to other countries. In the same way, if the United States started doing something on the fiscal front, this would be good for them, and good for the world.

Now, what is the role of the G20 in that process? I think it is to have discussions which would not take place otherwise, to think about how the different strategies interact, to try to trace the implications of different policies on the world economy, maybe to nudge countries to go a little faster in doing what they should do anyway... This is not global governance, by any means. But it is much better than nothing. And, in my sense, this is a realistic set of expectations for the G20 process.

Choongsoo KIM

Governor

Bank of Korea

I would like to express my gratitude to Governor Noyer for inviting me to this symposium. I also want to thank all the other Banque de France officials for preparing today's symposium.

As you will recall, last month G20 Finance Ministers and Central Bank Governors agreed on indicative guidelines to address global imbalances.

The final indicative guideline should be approved at the coming April G20 meeting, and I am sure that France as the G20 Chair will successfully demonstrate its leadership in producing concerted and coordinated deliverables.

I | Global imbalances, surveillance and policy coordination

As President Sarkozy mentioned at the press conference in January, there have been 125 banking crises during the past 40 years, and their occurrence has picked up extraordinary speed over the last 20 years. This clearly underlines how global imbalances are now building up ever faster.

A financial crisis is no longer a *tail risk* with a low probability of occurrence. It should rather be regarded as a *normal risk* that can materialise at any time and at any place in new and diverse forms.

A capacity to pick up promptly on the build-up of fresh imbalances calls for preemptive and proactive surveillance by central banks and supervisory authorities.

What is more, closer attention must be paid to the mounting importance of cross-border and cross-institutional policy coordination in the process of resolving such imbalances.

On October 8th 2008, the United States, Canada, the United Kingdom, the European Central Bank (ECB), Sweden, and Switzerland together decisively lowered their policy rates in a concerted move. The six of them demonstrated their resolve to overcome the crisis through such international coordination, and

this effectively tamed the raging turbulence of market sentiment and helped restore stability.

This experience teaches us the valuable lesson that international coordination can lessen market uncertainty in times of global crisis.

International coordination, therefore, is undoubtedly the key to resolving the global imbalances. Arguably it was the framework of international policy coordination through the G20 Summit that made it possible to overcome the global financial crisis earlier than anticipated and allowed the swift introduction of Basel III.

On the other hand, there are a number of obstacles that stand in the way of the seamless conduct of surveillance and policy coordination. I would now like to run through the challenges that particularly strike me.

2 | Challenges of surveillance and coordination

2 | I Factors that complicate the exercise of surveillance

2 | I | I Blurred designation of accountability due to the complexity of financial instruments

First of all, the recent financial crisis is set apart from previous crises in the sense that it is difficult to put your finger on the exact locus of responsibility for those specific elements that gave rise to it. This very fact itself represents a substantial hurdle for surveillance. For example, more than one thousand people were held criminally liable when many US savings and loans associations folded in the 1980's. On the other hand, with the possible exception of a handful of cases such as that of Bernie Madoff, no criminal prosecutions were undertaken against the staff and management of financial institutions during the recent crisis.

Today, it is much more difficult to pinpoint those players who actually give rise to risk because the *originate and distribute* model passes on and spreads out heavy risks into a myriad of lesser risks. *CDOs* (collateralised debt obligations), frequently cited of the major causes of the subprime crisis, are a case in point.

When *CDOs* go through “originate and distribute” process numerous times, the risk-creating entity cannot be clearly identified. For this reason, regulatory authorities were unable to fully comprehend the trade mechanism and the relevant data of *CDOs* when Lehman Brothers went bankrupt in September 2008.

The purpose of surveillance is “to detect problems ahead of time and correct faulty elements.” Nonetheless, if the structures and transactional processes of financial instruments are too complex as with *CDOs*, in which it is too difficult to identify the problematic entity, surveillance becomes a path fraught with difficulties.

2 | 1 | 2 Financial innovation incentives

Secondly, the incentives for innovation by financial market players themselves turn into barriers to effective surveillance.

The market reacts spontaneously and swiftly to new regulations by innovating techniques and products to circumvent them. Innovation on the part of market participants can be expressed in other words as “the build-up of a new risk or imbalance that is not immediately apparent to the relevant authorities.”

During the period of transition to Basel III, banks will attempt to minimise the burden imposed by the new regulations. This change in the regulatory environment will create new side-effects with the potential for triggering the eruption of new and unanticipated imbalances or risk build-ups. I see this very point as throwing up the greatest challenge for surveillance in the coming years.

For instance, global-systemically important financial institutions (SIFIs) that are subject to systemic capital surcharge requirements will attempt to pass on the additional cost to their counterparties. These counterparties will, in turn, react to such attempts. If unexpected side-effects or imbalances crop up during this process, the need for additional

regulatory measures will have to be discussed. In this case, global-SIFIs regulation may not fulfill its original objective of reducing systemic risk, but merely give rise to the implementation of additional regulatory requirements. We may fall into a vicious circle in which the imposition of one regulation itself gives birth to another and so *ad infinitum*.

2 | 1 | 3 Missed risk factors

Thirdly, the difficulty of identifying newly emerging imbalances in a timely manner is another stumbling block on the road to effective surveillance.

The complex network interlinking financial institutions is effective in diversifying the risks during a business expansion phase. In a critical financial situation, however, the same network functions as channel of risk contagion.

The aggregate risk of the financial system as a whole during a crisis is amplified and taken to a much higher dimension than the simple arithmetic sum of firm-specific risks.

A lesson to be drawn from the global financial crisis is that regulatory authorities placed too much emphasis on microprudential surveillance, and as a result, they ignored or indeed turned a blind eye to the adverse effects of the accumulation of aggregate risk.

It was only after the recent crisis that the authorities came to realise that network systemic risks expand as interconnectedness among banks intensifies.

The addition in Basel III of macroprudential overlays –such as countercyclical capital buffers, forward-looking provisioning, and systemic surcharges for SIFIs– is based on the repentance of the previous microprudential surveillance framework.

It is downheartening to say it but we must admit the very strong possibility that we may still not pick up on newly emerging risks in a timely fashion. Regulators should bear this firmly in mind and be appropriately humble in their approach, never underestimating what they are up against.

2 | 1 | 4 Distorted incentive structure

Fourthly, I would like to point out two cases where incentive distortion challenges surveillance.

If an attitude of forbearance prevails, it may well distort the outcome of surveillance.

When low interest rates remain in place for a long time, the market tends to blindly expect that those bad loan assets that should be written off will revert to normal status. In turn, forbearance toward the redemption of these loans comes to prevail, in what is known as a game of *extend and pretend*.

If this *evergreening practice* in the accounting treatment of delinquent loans as normal loans becomes common, there can be little confidence in the outcome of surveillance.

Moreover, the symbiotic relationship between credit rating agencies and financial institutions, and conflict of interest problems within the agencies themselves represent another factor that threatens the credibility of surveillance outcomes.

According to a report in the New York Times (June 3, 2010), certain credit rating agencies stand accused of distorting the rating outcomes in collusion with the issuer institutions being graded.

This distortion of ratings can largely be seen as essentially a structural problem. In the current structure of the *issuer-pays model*, the issuers themselves pay the rating fees and rating agencies are able to provide consulting services to these issuers. In order to hide their assessment errors, credit rating agencies (CRA) tend to persist in assigning high credit ratings even when an issuer faces a high probability of insolvency. Of course, surveillance outcomes using such less than adequate ratings undoubtedly hamper appropriate policy decision-making.

Recently, The Financial Stability Board (FSB) has finalised proposals for reducing reliance on CRA ratings. I look forward to this plan being put in place in the near future.

2|2 Obstacles to policy coordination

2|2|1 Global dimension

As the interconnectedness of global economies has intensified, the need for international policy coordination has grown to a great extent.

If a national jurisdiction imposes capital controls in the absence of policy coordination with its neighbouring jurisdictions, the risks may spill over to other neighbouring countries as opportunities for regulatory arbitrage open up.

We ought to take a closer look at the recent experience of those emerging market economies that, after the onset of the financial crisis in September 2008, put in place a *blanket deposit guarantee* and consequently transferred the risks to their peers and neighbouring countries.

In addition, emerging economies' excessive accumulation of foreign reserve to counter sudden surges in capital outflows will itself accentuate global imbalances. International policy coordination to resolve this problem is embodied in the global financial safety nets (GFSNs), which took on detailed form at the Seoul G20 Summit. In this context, notable advances were achieved last year in the improvement of the IMF Loan Facility. There remain, however, some aspects of it in need of further refinement. Therefore the French initiative set out this year in this area is greatly welcomed and I look forward to its successful realisation.

No jurisdiction is opposed to the idea of international coordination in principle, but when the interests of individual countries are in conflict, when the benefits from coordination are not obvious, or when there is no urgent call for it, then it is very hard to bring about international policy coordination in practice. That at any rate was Korea's experience as the G20 chair last year.

It seems there is already a firm consensus among the G20 member countries as to the overarching imperative of policy coordination through the G20 framework for the synchronous growth of the world economy. This being the case, it binds us all to put into practice in all good faith what we may term the mutual trust built up through negotiation and agreement.

2|2|2 Domestic dimension

From a domestic perspective, the coordination problem lies in the institutional arrangements in relation to macroprudential policy. If the institutional setting for macroprudential policy is not configured properly, its coordination with monetary, fiscal, and other policies may well become problematic.

As macroprudential policies are thrust into the spotlight, it is possible, misguidedly, to take the view that it is feasible to deal with inflation by means of macroprudential tools. Accordingly, monetary policy is increasingly likely to be adversely affected by the overzealous use of macroprudential tools. Hence, it is critical that there should be a clear understanding that *macroprudential policy* does not substitute for monetary policy but rather *complements* it.

3 | The way forward

Lastly, I wish to draw attention to the following two issues that may shed some light on the trail that lies ahead.

First, potential imbalances in the future may arise from entirely new sources. As the boundaries between differing spheres are being dissolved in the process of globalisation and increasing interconnectedness, social political and geopolitical risks once remote may well spill over more easily to the real economy and result in increased economic risk.

One example springs readily to mind. The current events unfolding before us in the Middle East are upping the geopolitical risks and triggering such

economic threats as an oil price shock and financial market turbulence.

I would like to call this *global systemic risk* as opposed to *financial systemic risk*.

Piling Pelion on Ossa, in addition to international financial instability, *international social instability* represents an issue that must be dealt at an early date in order to avoid a new type of crisis. With this problem of social instability very much in mind, particular emphasis was given to the “development issue” in the talks at last November’s G20 meetings in Seoul.

It follows on from this that discussions are required within the G20 framework on surveillance and policy coordination with particular reference to “global systemic risk.”

Next, the institutions with a mandate for global surveillance (such as the FSB and the IMF) can be readily identified. On the other hand, it is difficult to clearly delineate exactly those that are responsible for arbitrating conflicts between differing parties within the global policy coordination framework. To my mind, this underscores yet again the imperative for a further strengthening of the G20’s role in international policy coordination.

Olli REHN

*Member of the European Commission
for Economic and Monetary Affairs*

It is a great pleasure for me to be here with you today and to speak on the highly topical subject of economic governance. I will defend the idea that it is absolutely crucial to better coordinate economic policies within the European Union and the euro area in particular. In my speech, I will discuss this issue in the context of the EU's overall response to the crisis.

In June last year, Jacques Delors, said: "the fire-fighters have done their job, now we are waiting for the architects". As is often the case, Mr Delors, who served for many years as President of the European Commission, was right. Today, I am talking to you as an architect. But, unfortunately, the fire-fighters' work is not entirely over, and we must remain extremely vigilant to ensure that the fires do not start again.

Lessons from the crisis

The financial and economic crisis, which started in mid-2007, took most of the economists, financial actors and policy-makers by surprise. The belief in the efficiency of financial markets blunted their vigilance. The same was the case when the ongoing global turbulences triggered the eruption of the sovereign debt crisis in the euro area. We were all taken off guard mainly because of the impressive strength and the speed of spillovers across countries in the European Union and especially in the euro area.

The existence of spillovers in an area with so close economic, financial and institutional links as the European Union and even more so in the euro area, has always been known to European policy makers. For this reason, the Treaty requires the EU Member States to closely coordinate their economic policies. On this basis, rules have been developed for policy coordination, notably within the Stability and Growth Pact (SGP). The Pact was created precisely to ensure that no country would pursue fiscal policy that would endanger financial and economic stability of the other Member States.

But the system we have built over the years did not work well in crisis. Let me mention some of the weaknesses in our policy coordination and surveillance mechanisms that the crisis revealed.

- Fiscal surveillance did not pay enough attention to debt and did not intervene enough to limit imprudent policy. While the surveillance suffered from some weaknesses in design, the key problem was insufficiently rigorous implementation at Member States level.
- Surveillance was too narrowly concentrated on fiscal developments, leaving non-fiscal economic imbalances effectively unattended.
- The surveillance processes were backward-looking; their outcomes were ex post feedback rather than ex ante guidance.
- Financial supervision was too narrowly concentrated on domestic developments, which was incompatible with the international nature of the operations of large financial institutions.

But we have learned the lesson and the European Union embarked on a comprehensive programme to strengthen economic and financial governance, including crisis management tools.

Financial stability

Following the turbulence in the sovereign debt markets last spring, the European Union quickly created temporary financial backstops –the European Financial Stability Mechanism (EFSM) and the European Financial Stability Facility (EFSF). With some experience of how these backstops function, we are now in the process of strengthening the EFSF, and at the same time designing a permanent arrangement, the "European Stability Mechanism".

Crucially, we have put in place a new European financial supervision structure. On 1 January this year new institutions have been established:

- the three European Supervisory Authorities, overseeing supervision of banks, insurers and securities markets, will help overcoming segmentation and inconsistencies between national supervisors and enhance the overall quality of supervision;
- the European Systemic Risk Board (ESRB) will widen our scope of oversight to the nexus of macroeconomic and financial markets at large and be ready to spot and deter the build up of excessive risk at an early stage.

These new institutions are a significant step towards a consistent European financial supervision that can effectively monitor and intervene in financial market developments that have major cross-border implications. The new round of banks stress tests this spring will be an important test of this new arrangement.

Economic governance

In order to correct the loopholes in the framework of economic surveillance the Commission presented a package of legislative proposals to this effect in September last year.

First, in order to avoid the repetition of sovereign debt crisis, « *à la Grecque* », we have to strengthen the SGP and do away with complacent fiscal policy, especially in good times. For this reason we want to make the adjustment towards a medium-term budget objective more operational and binding. We also want to revive the rather neglected debt criterion of the SGP and pay more attention to debt sustainability.

Second, we propose to broaden economic surveillance to identify and redress macroeconomic imbalances and divergences in competitiveness; this is particularly important to avoid crisis « *à l'Irlandaise* ». This will be based on a scoreboard of economic and financial indicators, and when unsustainable developments are identified, we will carry out in-depth country analysis and issue country-specific recommendations.

Third, we need to effectively enforce economic surveillance through the use of stronger incentives

and sanctions. These would kick in at an earlier stage of the surveillance process and be gradually tightened, unless corrective action is taken by the member state concerned. Very importantly, we also want to make the consequences of irresponsible behaviour more automatic and thus less subject to political deliberation.

The proposals are currently being discussed in the Council and the European Parliament. Both institutions committed to agree on the legislation by this summer.

However, one important change in the way economic surveillance is conducted has already been implemented. From this year on, the process of European Union economic surveillance will be conducted in the first half of the year, during the so called «European Semester». This will allow integrating various strands of surveillance: fiscal, structural and macroeconomic, and to issue more comprehensive and coherent guidance to Member States. The guidance will also be issued early enough to be taken into account by Member States in the formulation of the budgets for the following year.

Annual growth survey

The first European Semester started with the publication of the Commission's Annual Growth Survey (AGS) on 12 January which sets out the Commission's views about the economic situation and the main challenges the European Union must address.

The AGS is very clear, even blunt, on the most pressing priorities. It proposes ten specific actions on fiscal consolidation, financial repair, labour market reforms, and growth enhancing policies.

One of the core messages of the AGS is the need to strengthen competitiveness of the European Union and to assure sustainable adjustment and convergence. The Commission thus welcomes the high level of ambition on the political level in the European Union to increase competitiveness and adjustment capabilities. If the "Competitiveness and Convergence Pact" –or whatever it will be called– provides political willingness and support to urgent actions that will lead to more growth and employment, it can only be welcomed.

The governance and policy reforms underway show that Europe has drawn the right lessons from the crisis and act accordingly. Yet, a successful outcome is not guaranteed. It is essential that we do not allow the relative calm in the financial markets and the improved macroeconomic outlook to lower the level of ambition or slow down the completion of the reforms.

Equally important is that we aim at the simplest possible governance structures. In my view, only the community method makes this possible. Once the two conditions of, first, maintaining the high level of ambition, and second, drawing on the European framework of common rules and institutions, I am confident that Europe will emerge from the crisis strengthened and a strong and constructive player in the global policy arena.

SESSION 3

THE ROLE OF CENTRAL BANKS: LESSONS FROM THE CRISIS

Chairperson:	Michel CAMDESSUS, Managing Director, International Monetary Fund (1987-2000)	75
Speakers:	Charles A. E. GOODHART, Professor Emeritus, London School of Economics	77
	José DE GREGORIO, Governor, Central Bank of Chile	80
	Olivier JEANNE, Professor, Johns Hopkins University, Baltimore	86
	Jean-Pierre LANDAU, Deputy Governor, Banque de France	93
	Athanasios ORPHANIDES, Governor, Central Bank of Cyprus	95

Michel CAMDESSUS

Managing Director

International Monetary Fund (1987-2000)

Let me tell you first how delighted I am to attend this symposium, to meet here so many old friends, and particularly the so many of you who, thanks to their perspicacity, vision and courage have been able to play a decisive role in containing the crisis and avoiding that it turns to be a kind of ultimate catastrophe. But I am not here for compliments but to make sure that we could in less than two hours discuss the lessons of the crisis as far as the role of central banks is concerned with this extraordinary floor Banque de France has been able to assemble here today.

The lessons of the crisis and the role of central banks: we all had many occasions to think about it, to write about it, and to debate a lot and of course, there are plenty of things to say about it. But as time is short, I would suggest that we keep focusing on three issues particularly relevant for the next few years, taking into account what, *de facto*, you have been led to do to face a world in crisis in which monetary and financial developments are so intimately interconnected.

- How can central banks integrate financial stability in their specific agendas?
- Would such broadening of the central banks agenda be compatible with their duties of independence and efficiency?
- What role for the central banks in the management of global liquidity?

Let me add just a few words about each of them.

How to integrate financial stability in our specific agendas? The question has gained relevance all along, at least, the last two decades. The need is now well recognised but how best to do it, and how advanced are we in that agenda?

But immediately, the second question emerges: is this broadening of the central banks responsibilities compatible with their duties of independence and

efficiency? There are questions about it. I am somewhat concerned to hear the same people being emphatic in praising what the central banks did in response to the crisis reacting boldly and effectively, in constructive cooperation with the Treasuries, and now raising questions about the impact of these new modalities of interventions on the independence of our institutions... Is not that threatening the independence? This debate should be faced, I think, and clarified.

Last, we have a question, whose importance has been revealed or magnified by the crisis: what role for central banks in the management of global liquidity?

As many of you already know, I have been recently involved in a somewhat peculiar initiative, the "Palais-Royal Initiative" (PRI), in which a few of you here, together with great veterans such as Paul Volcker, Horst Koehler, Andrew Crockett, Hamad Al Sayari, Venugopal Reddy, Guillermo Ortiz, and others, we have tried –with no mandate whatever from whatever authority– to reflect on the feasibility of an international monetary reform and how (the report is now on the website of the Banque de France).¹ We have touched many issues including the reform of the International Monetary Fund (IMF) and of the G20, but the question of management of global liquidity has appeared to us of a crucial importance.

- We observed in particular that in the run up to the crisis, an unsustainable global expansion was facilitated by rapid growth in global credit. The result was a commodity price boom and what was subsequently recognised as a global asset price boom. Then the crisis struck, and liquidity in financial markets all but evaporated, leaving financial intermediaries and central banks around the globe scrambling for hard currency financing. From peak to trough, gross capital inflows worldwide fell from nearly 20 percent of global GDP to less than two percent. Now they appear to be heading back to, or exceeding, their pre-crisis level, and the risk remains of a return to "business as usual". Such extreme fluctuations have critical effects on the functioning of the global

¹ http://bdfllu-ws01.heb.fr.colt.net/smi/gb/telechar/news/Rapport_Camdessus-integral.pdf

economic and financial system and macrofinancial stability at the country level. Yet the phenomenon is poorly understood. I don't want to bother you with our analysis, but I would like to submit to your attention four suggestions we made.

- Shouldn't the IMF and the Bank of International Settlements (BIS) work together towards a shared analytical approach for a better measurement and surveillance of global liquidity? These are necessary in order to make possible international surveillance of this important determinant of the stability of the system. Given the many dimensions of liquidity, a set of indicators will probably need to be developed, underpinned by adequate statistical tools. The adequacy of these indicators will need to be reviewed on a regular basis to take into account the effects of financial innovation.
- Shouldn't the central banks and the authorities in charge of macroprudential policies of systemically relevant economies conduct their policies taking into account the need for broadly appropriate global liquidity conditions? Shouldn't the IMF, the BIS and the Financial Stability Board (FSB) regularly monitor developments in global liquidity with a view toward formulating recommendations for all systemically relevant countries regarding the conduct of their

policies (including monetary and exchange rate policies, as well as financial regulatory and supervisory policies) with a potential impact on global liquidity?

- Shouldn't the use of capital controls, subject to IMF surveillance under an amended Article VI, be warranted as an option to prevent disorderly exchange rate movements or financial instability? Shouldn't the IMF establish a more complete analytic framework on capital flows, both in capital exporting and importing countries, in light of the experience gained over the last two decades that have been characterised by large and volatile capital flows?
- And last, shouldn't IMF work with relevant governments, central banks, and regional pools to put in place, with appropriate safeguards, permanent crisis financing mechanisms akin to a global lender of last resort?

Well for addressing these key questions, I have with me five super eminent experts and colleagues, the list starting appropriately by Charles Goodhart. After him, I have been suggested to depart from the alphabetic order and to give the floor to Professor Athanasios Orphanides and then to Governor José de Gregorio, Professor Olivier Jeanne, and Governor Jean-Pierre Landau.

Charles A. E. GOODHART*Professor Emeritus**London School of Economics*

The golden age of central banking came to an abrupt end on August 9th, 2007. Prior to that central bankers had generally assumed that a combination of their (considerable) success in achieving price stability, via inflation targets, plus the maintenance of Basel II capital adequacy ratios (CARs) by all the main commercial banks would, by the same token, more or less guarantee financial stability also. In some cases the financial stability divisions of central banks were pruned in size; almost invariably they were seen as a backwater, (Mongolia, if not quite Siberia) compared to the excitement of the monetary policy department of each central bank.

There were concerns about future financial stability, but aside from the Bank of International Settlements (BIS), these related more to worries about exchange rate volatility (the macroeconomic imbalances) and to certain hedge funds, than to the credit-fuelled housing boom. Indeed, there was a delusion, fed by econometric modelling, that the value of a geographically-diversified portfolio of US houses would/could never decline by more than 4 or 5% at worst, (because it never had in the previous 50, or so, years for which good data were available).

It was not so much the low level of (US) interest rates, but the promise that they would be kept low “for an extended period of time”, that encouraged financial intermediaries to extend leverage, to borrow short in wholesale markets to lend for a longer term. Since risk was thought to have been reduced, as measured by credit default swap (CDS) spreads which reached a low point in summer 2007 just before the balloon exploded –so much for “the wisdom of markets”– everyone took on more of it, in pursuit of a higher return on equity (ROE).

There was a mass common delusion, shared by central bankers, regulators, politicians and most economists, as well as by the bankers themselves. The best description of how we all got into this state is to be found in the various writings of Hy Minsky.

The first, most obvious, central lesson for central bankers is that the achievement of price stability far from guaranteeing financial stability may, in some

circumstances by apparently reducing risk, be even inimical to financial stability. The second, most obvious lesson is that Basel II was unsatisfactory in many respects, being in effect both much too procyclical and too focussed on micro, rather than systemic macro, prudential issues. The third lesson was that it was totally unsatisfactory to be left with the alternatives, when faced with a failing systemically important financial intermediary (SIFI), of a liquidation or direct government (taxpayer) support. The fourth lesson was that property (residential and/or commercial) booms are particularly hazardous for the economy because of their inter-linkage with the banking system.

We shall now discuss each lesson in turn.

I | Alternative instruments

Central banks have sometimes been described as akin to “one-club golfers” with their only effective instrument being their command over the short-term policy rate. In view of additional concerns about financial stability, should central banks use this single, main instrument to try to achieve some combination of both price and financial stability by “leaning into the wind”? My own answer would be “no”. Trying to achieve two objectives with a single instrument does not work very well, (though I would add housing prices into the European Harmonised Index of Consumer Prices –HICP). The achievement of price stability has been a great boon, and to lessen the focus on that, at a time of much concern about both deflationary and inflationary pressures, would be, in my view, a mistake.

If central banks are to continue to predicate interest rates to the achievement of price stability, then should another institution, say a financial services authority, be given responsibility for macroprudential financial stability? Again my answer would be no, for many reasons. First, a major instrument for dealing with financial (in)stability is the ability to provide and to control liquidity, both generally to markets and individually in emergency lending assistance (ELA).

Second, both financial markets and monetary policy cannot work in conditions of extreme instability. So, third, central banks already generally have overall responsibility for financial stability, and a body of professional staff to do the job.

Of course, until the zero lower bound for interest rates is hit, a change in the provision of central bank liquidity will have implications for short-term interest rates, subject to some minor qualifications about operating on the interest rate corridor and on expectations (of future short-term rates).

So, if we are going to give the central bank a reinforced mandate for the second objective of financial stability, we need some additional instruments to enable that to be achieved. A number of such can be identified, for example, loan to value (LTV) and loan to income (LTI) ratios in the housing market, leverage ratios and net stable funding ratios (NSFR) for all levered financial intermediaries, and risk-weighted CARs for banks. All of these should be capable of variation by a Financial Policy Committee (FPC) according to circumstances.

The problem lies not so much in identifying such instruments but in deploying them in a counter-cyclical manner. In a bust/crisis, markets and bankers often become so shell-shocked (risk averse), that the authorities' main concern is to persuade them to take on *more* risk/credit/leverage. So regulation can only really bite in a boom. But the boom would not continue unless most in the market expected it to do so; and boom conditions are popular with all concerned. So for a central bank to announce that it judged the boom "unsustainable" and intended to take real, solid steps to halt the "irrational exuberance" would generate howls of execration. Indeed if the measures succeeded in preventing a crisis, this would be held to prove that they had not been needed in the first place!

The second main problem is that cycles are not global in coverage but vary from country to country and market to market. Without controls on capital movements, (or even with such), regulatory restrictions falling particularly heavily on some specific intermediaries, or countries, or markets will be subject to the desire for "a level playing field" and to disintermediation (the border problem).

So we (and central banks) will have problems in the application of counter-cyclical measures for the

achievement of financial stability. These problems have not really been satisfactorily addressed in the current Basel III measures, to which we now turn.

2 | Basel III

Besides being procyclical, Basel II required far too little loss-absorbing tier 1 core equity (TCE), took no notice of liquidity at all, wildly understated the need for capital against trading books, and failed to realise how badly the risk-weightings were calibrated (taking no notice of highly correlated systemic risk from commonly held portfolios, e.g. of mortgage backed securities –MBS). As a result Northern Rock was assessed by the UK Financial Services Authority (FSA) as Basel II compliant a few months before its collapse, despite having a fragile funding base and a leverage ratio of over 50 to 1, which in the United States would have been assessed as *critically under-capitalised*.

These latter defects, but not really the procyclicality, have been partially addressed in Basel III by the Basel Committee on Banking Supervision (BCBS). Some forms of liquidity requirements, a liquidity coverage ratio (LCR) and an NSFR are to be introduced, but only as observation ratios and from 2013. The CAR for TCE is to be raised smartly to 7%, and, at long last, sanctions are to be applied as the ratio falls from 7% to the minimum of 4.5%. Previously the BCBS had not felt that they could propose sanctions, so their proposed ratios became minima, and the available buffers were the exiguous margins held above such minima.

Partly because risk-weightings are both poorly designed and open to gaming, an extra back-stop in the form of a leverage ratio has been introduced, but at 33 to 1 (3%) is far too generous. Moreover, the CAR of 7% for TCE is too low to protect against a severe asset market downturn (though there will also be an, as yet, unspecified add-on for SIFIs). There is a huge debate whether the weighted average cost of funds to banks would rise significantly if the TCE ratio were to be lifted much further, (as many of us would advocate), and of the social cost/benefit of doing so.

Something of a compromise appears to be taking shape with the suggested CARs left in place, but supported by the addition of contingent convertible (CoCo) bonds and collective action clause (CAC) bonds, which have the capability of transformation into

loss-absorbing equity under certain (pre-arranged) conditions; more on this in the next Section.

But while all of this provides a greater loss-absorbing buffer, none of it is directly counter-cyclical. Basel III does provide for such an additional counter-cyclical buffer, but only up to a maximum of 2.5% of risk weighted assets (RWA), and purely at the “discretion” of each central bank. Given the unpopularity of ever exercising such discretion (see Section 1), I doubt if it will be much used.

3 | Resolving failed banks

So Basel III is not likely to make bank failures (or failures of other SIFIs) improbable in the future. Methods of handling failing banks have included:

- assisted mergers;
- liquidation;
- nationalisation and/or taxpayer support.

All have very serious drawbacks. The United States are putting their (Dodd-Frank) faith in a combination of prior “Living Wills”, an expanded role for the FDIC in liquidation and an “ex post” charge on the remaining SIFIs to bear any extra losses, in order to make liquidation more palatable than in the past. I have my doubts whether/how this will work.

The Europeans are putting their faith in finding another source of funds for meeting the burden of loss in a failing bank. This extra source is to be the bank bond-holder

and the proposed route is to be via CoCos and CACs, (but not until 2013). My own concern, re CoCos, CACs and bail-ins are three-fold. Will they get the complex technical issues right? If a CoCo or a CAC gets triggered will not this lead to even more contagion to other banks than we have at present? If the implicit insurance guarantee on (senior) bank bonds is removed, will we not move towards a (Modigliani/Miller) world in which the structure of bank liabilities has no effect on overall funding costs? If so, more pure equity is much the same, but simpler, than equity plus CoCo/CACs.

4 | Restraining real-estate cycles

It has been a major component of public policy in many countries, especially in the Anglo-Saxon countries, to encourage home ownership. As noted earlier regulation can only really be effective in restraining a boom. While there are several instruments that could be used for that purpose, including various forms of taxation, as well as LTVs and LTIs, their use in a counter-cyclical manner would run into even more (political) opposition than, say, counter-cyclical shifts in bank CARs or liquidity requirements.

What is needed is a presumptive rule, or rules, relating say LTVs or housing taxes to some combination of bank credit and housing price performance. No rule can ever be perfect, but the “comply or explain” approach can deal with rule fallibility. Instead central banks are holding on with much determination to their precious scope for discretion. This is one lesson that they have not learnt.

José DE GREGORIO**Governor**

Central Bank of Chile

I am very grateful for the invitation to participate in this panel on *Lessons from the Crisis on the Role of Central Banks*.¹ The crisis has revealed weaknesses in the functioning of financial markets and the regulatory and supervisory frameworks in several advanced economies, which went through years of credit expansion and leveraging that ultimately proved unsustainable. There are many lessons to be learned in order to reduce the likelihood of another crisis of this magnitude. Indeed, many of the policies implemented during the recent crisis, and which helped to avert a catastrophe, were lessons we learned from the Great Depression.

But the recent episode has also revealed the strengths of policy frameworks and financial systems in emerging market economies (EMEs) that were able to successfully mitigate the effects of the worst global crisis since the Great Depression. Fiscal prudence, more autonomous central banks, low inflation, flexible exchange rates, and financial regulation and supervision, consistent with their lower degree of financial sophistication, were central to this unprecedented performance. Many of these lessons have been learned the hard way, through decades of macroeconomic mismanagement, and several costly experiences of currency and financial crises.

Today, however, I would like to focus on the challenges to macroeconomic management faced by EMEs in the current global environment. Indeed, the two-speed recovery of the global economy is creating tensions in EMEs, putting pressure on macroeconomic management, in particular, in the context of inflationary pressures, capital inflows and currency appreciation. I will refer to these challenges, starting from monetary policy and exchange rate appreciation, to then move to financial stability issues.

I | Inflation and currency appreciation

The conduct of monetary policy by independent central banks with a clear mandate for price stability

was central to allow for the implementation of countercyclical monetary policies in EMEs during the Great Recession. Today the appropriate stance of monetary policy must avoid the buildup of inflationary pressures in a world of rising commodity prices and economic activity close to full capacity in many EMEs. Failing to act decisively against inflation pressures will undermine credibility, with negative consequences on the ability to achieve stable inflation with low output costs in the future.

Perhaps the main apprehension of policymakers in tightening monetary policy is the fear of further appreciation of their currencies. As monetary policy in advanced economies is expected to remain very expansionary for a prolonged period of time, many EMEs that have been tightening monetary policy have also experienced appreciation of their currencies. Not dealing with inflationary pressures in a timely manner, however, could result in economic overheating and rising inflation.

Most emerging markets have enjoyed great success from trade openness and export-led growth, and hence their worries arising from exchange rate appreciation are well justified. However, it is important to distinguish between real appreciation –the relevant variable from the competitiveness standpoint– and nominal appreciation. Exchange rate actions that attempt to mitigate a real exchange rate appreciation will have only transitory effects, which could provide valuable time for the economy to adjust to a new global environment and might hence be relevant from the point of view of welfare, but cannot be thought of as a permanent tool to foster competitiveness. In order to sustain the real exchange rate, real actions need to be taken, such as increasing domestic savings. It is time to rebuild fiscal buffers in emerging market economies and accelerate the pace of reforms to achieve productivity gains that can sustain competitiveness.

It is important to note that the economic strength of EMEs relative to advanced economies is the main reason why their real exchange rates are appreciating. In addition, the correction of global imbalances

¹ The author is very grateful for comments and discussions with Rodrigo Cifuentes, Kevin Cowan, Luis Oscar Herrera, and Enrique Orellana.

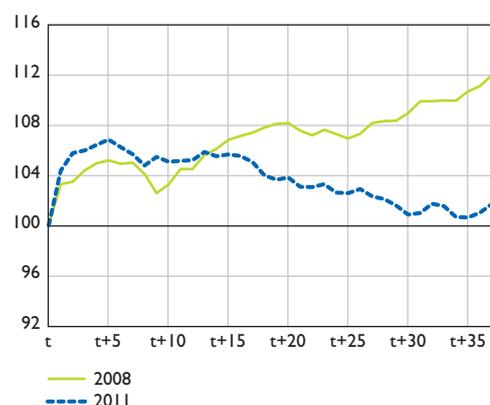
requires both an increase in consumption in surplus economies and a shift of this greater demand towards goods produced by advanced economies, especially since in the latter growth of domestic demand will be sluggish because of the post-crisis deleveraging process. Relative price adjustments around the world should help this process. Many EMEs have been trying to mitigate the appreciation through exchange rate intervention, with partial success. Chile is one of the latest to join this group. Others have sought the use of capital controls or macroprudential regulations, not only for exchange rate reasons, but also to avoid the buildup of excessive market or liquidity risk associated to the foreign exchange position.

In January this year we announced a program of reserves accumulation of 12 billion dollars, about 5 percent of GDP. This measure had a dual purpose. On the one hand, it would relieve some pressures on the exchange rate, facilitating the adjustment of the economy to the current international environment. On the other hand, it would increase Chile's international liquidity position to levels around 17 percent of GDP. Indeed, evidence shows that having a high level of reserves makes economies more resilient to financial turbulences, even though they are generally not massively used. Reserves act as a deterrent against sharp capital flow reversals.² In addition, reserves allow central banks to credibly establish foreign currency liquidity facilities. These played an important role in normalising both domestic currency and foreign currency short term debt markets in many EMEs during the recent global crisis.

After an initial sizable depreciation, the peso has strengthened, for some days even reaching levels similar to those prevailing before the intervention announcement. This contrasts sharply with the experience of the previous period of reserve accumulation initiated in April 2008 (Chart 1). In that episode and with the global financial crisis intensifying it was deemed appropriate to accumulate about 4 percent of GDP over a period of 8 months. This process was suspended after the collapse of Lehman Brothers that triggered a sharp depreciation of most currencies in EMEs. During that episode, the currency depreciated almost continuously by about 18 percent between early April and late August. Two very important issues help explain to a large extent the difference between the two episodes.

Chart 1 Nominal exchange rate

(chilean pesos per US dollar; day of intervention announcement = 100)



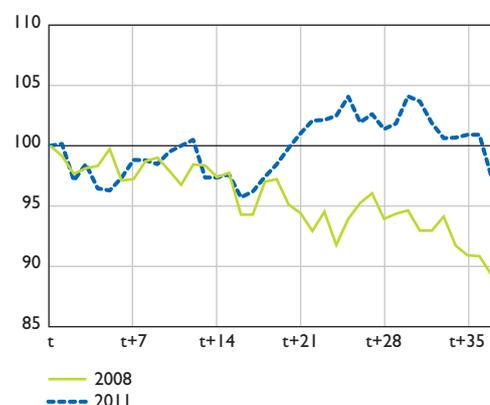
Source: Central Bank of Chile

In 2008, the dollar strengthened and the price of copper fell. Today, the dollar has remained weak and the copper price has reached all-time highs (Chart 2). This example shows how the effects of the intervention are confounded by other macroeconomic developments. Overall, available estimations indicate that, without the intervention, the peso would be between 3 and 5 percent stronger than it is today.

A key uncertainty for policymakers in EMEs is how long the period of decoupling and “exchange rate tensions” will last. Part of the tensions will be persistent, as many EMEs have proven very resilient in the current crisis –validating their policy frameworks.

Chart 2 Cooper price

(day of intervention announcement = 100)



Source: Bloomberg

2 For further discussion, see “International reserve holdings in emerging markets” by José De Gregorio, Central Bank of Chile Economic Policy Paper No. 40, January 2011.

This resilience should be factored into a lower risk premia for the assets issued by these economies. However, some of the tensions will prove transitory and will subside once activity in advanced economies recovers more strongly. Therefore, over time some tensions should alleviate, and this depends crucially on a healthy recovery of advanced economies.

The cyclical difference between EMEs and advanced economies, with the consequences on expected relative returns and risk, is inducing large gross capital inflows to EMEs. Net capital inflows, however, are well below the levels seen in the early 1990s. Indeed, at this time EMEs are running current account surpluses on average, while in the early 1990s deficit predominated. In the case of Chile, we have not seen net capital inflows yet. But, as the adjustment progresses we should observe rising net capital inflows to EMEs. In addition, large gross capital inflows raise concerns from a financial stability perspective, an issue to which I will turn next.

2 | Financial stability and capital inflows

We can think of three ways through which unsteady gross inflows may affect financial stability in a country. The first one is that in small and often illiquid markets capital inflows may *increase asset prices beyond fundamentals*. The problem arises if asset prices respond significantly to inflows, and these inflows stop or revert suddenly. A sharp decline in asset prices affects the balance sheets of local and foreign agents. If, in addition, the financing of asset purchases is highly leveraged, the fall in asset prices may trigger solvency problems, just as those of the subprime crisis. In addition, drastic reductions of positions in domestic markets by non residents may also introduce excess volatility in the exchange rate markets as investors leave the country. Through these chains of effects, a reversal or even a slowdown in capital inflows may significantly weaken financial stability in the local economy and also potentially in the economies from which the inflows are being financed.

A second source of vulnerabilities may arise from *cross border flows that provide debt funding* to local agents. These can be financial intermediaries or non-financial companies, and the funding can be via deposits or lending. If lending is short term, then this may result

in maturity mismatches. If lending is in a foreign currency, then the risk of currency mismatches must also be factored in. The problem arises if local agents do not correctly internalise these risks or if regulation limiting these risks in the financial sector is inadequate.

A third source of problems is that capital flows may *increase the scale and the complexity* of the local financial system, and this expansion may expose weaknesses in the regulatory and supervisory structure. For example, if external funding has not been readily available in the past for certain intermediaries, awareness of currency mismatches can be weak for these institutions or for their customers, and may not be properly addressed in the regulatory framework. Similarly, the availability of new funding may cause credit to rise at a faster pace than that of the supervisory capacity required to monitor its quality.

These three sources of risk call for different policy actions.

The first approach for *dealing with asset price misalignments* is for authorities to communicate their views on the extent of potential asset price distortions and their consequences for financial stability. These “verbal interventions” are relatively common regarding the exchange rate. I see no reason why we should not use them also for other assets such as bonds and equity, since they are relevant variables from the point of view of macroeconomic and financial stability. Indeed, recent experience has shown that central banks need to be more assertive and communicative about the conduct of financial systems. In our last *Financial Stability Report* we indicated that evidence pointed to some overvaluation of stock prices in Chile, but we also indicated that financial stability was not threatened by potential corrections, even sharp corrections, in these prices. Of course, making this assessment is not a trivial task –as modeling asset prices is complex– and it is not the role of central banks to communicate continuous assessments of asset prices. For this reason, this kind of communication must be done exceptionally, and in the context of discussing the potential implications of these price developments on current and future financial stability. In addition, communication must be done in a timely manner, before vulnerabilities build up.

In addition, central banks may choose to participate in distorted financial markets where there may be threats

to financial stability, as is sometimes done with reserve accumulation and exchange rate intervention in EMEs, or as has been the case of some interventions in debt and other asset markets in advanced economies. However, interventions beyond currency markets must be truly exceptional and only on the grounds of preserving financial stability or complementing monetary policy.

Another way to control the vulnerability of the system to the reversals of asset prices is to limit the amount of debt that finances the purchase of those assets with higher prices or increase capital buffers for such debt. In terms of macroprudential policies there are a series of options for this. Higher capital requirements for intermediaries participating in the business of making leveraged purchases of financial assets are one option. In the same vein, reducing loan to value (LTV) ratios in mortgage loans, increasing provisions for housing loans or increasing capital requirements on mortgage lending are all viable options if the distortion is in the housing market. Several countries in Asia have been actively using LTV caps over the last couple of years to reduce the risks from housing price booms. Which of these tools should be used will depend, however, on the institutional setting of each country, the functioning of the financial system and the asset price that is distorted. For example, in Chile, if it were determined that housing prices are distorted and lenders are not correctly internalising this distortion, then the Superintendent of Banks and Financial Institutions (SBIF) has the authority to increase provisions and capital requirements on housing loans.

Addressing the risks that arise from *expanding cross border debt* requires, at the very least, that existing prudential regulation ensure that funding liquidity risk is dealt with adequately by financial intermediaries. Often, however, this may simply lead to a transfer of this risk to the non-financial sector. Hence, there remains a role for a foreign currency liquidity buffer made up of international reserves.

Vulnerabilities regarding currency risk that often come hand in hand with increased foreign debt, merit special attention. In the past we have seen many crises originating from the accumulation of unhedged foreign currency debt in banks and non-financial corporations. This was one of the main

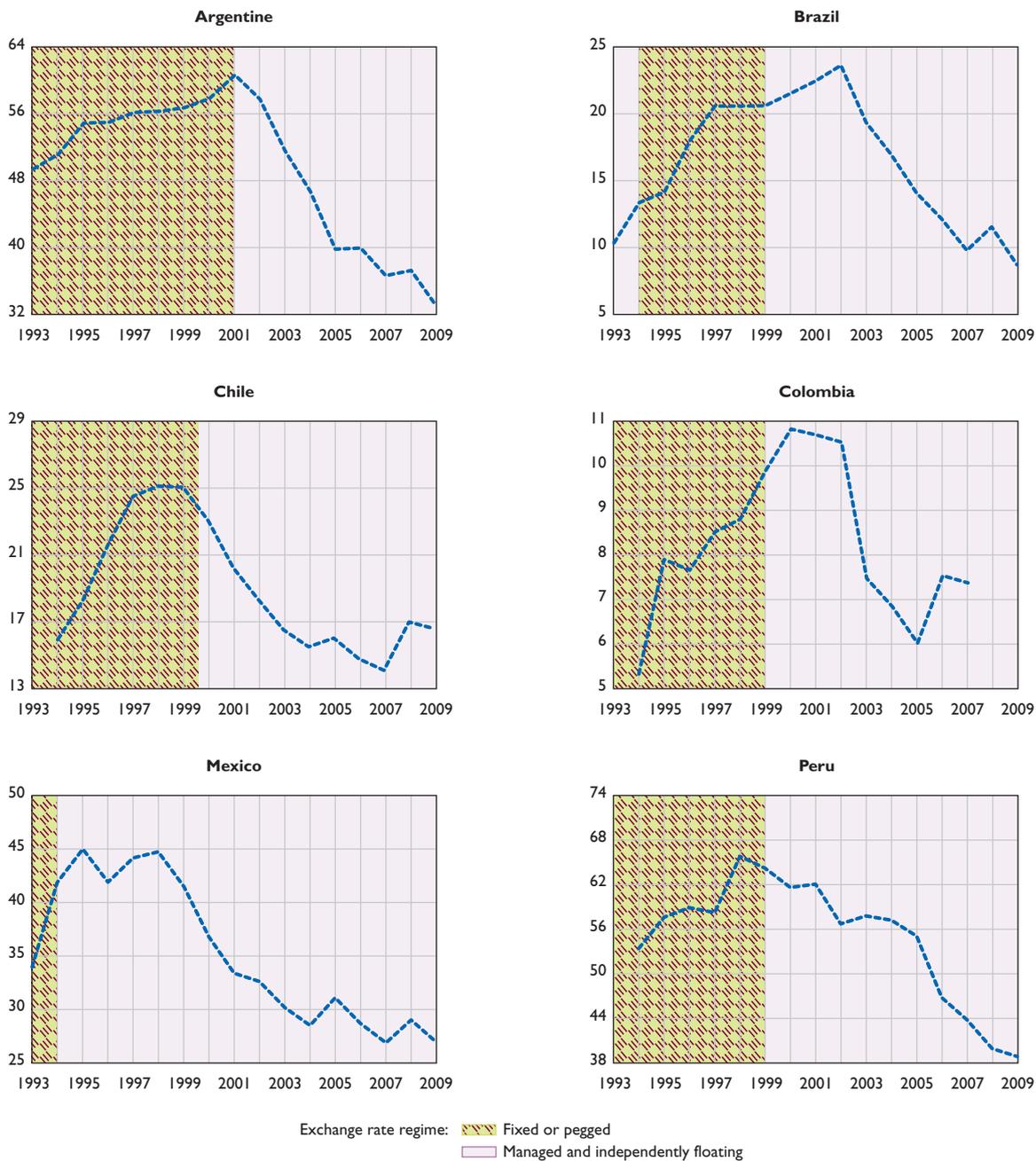
amplifiers of the Chilean banking crisis of the early 1980s— where firms in the domestic sector built up substantial amounts of dollar-denominated debt during a period of fixed exchange rates and capital account opening. It was also an important factor in the Mexican crisis of 1995, in the Asian crisis, and more recently in financial problems in some Eastern European countries. On the other hand, low currency mismatches allowed the central banks of many EMEs to lower interest rates aggressively as a response to falling demand during the crisis. In the past there was fear of exchange rate depreciation because of currency mismatches.

Exchange rate flexibility is a key component in any policy mix to reduce currency mismatches. Indeed, this is an example of a macroeconomic policy that also contributes to financial stability. In the case of Chile, and elsewhere in Latin America, we saw currency mismatches drop after currencies were allowed to float following the Asian crisis, as agents and regulators adjusted to increased exchange rate volatility (Chart 3). Indeed, bank regulation should not only incorporate currency risks explicitly, but also indirectly by dealing with the credit risks that arise from currency mismatches in the corporate sector.

Finally, *the growth in size and complexity of the financial system that often accompanies capital flows* calls for a continuous process of revision in microprudential regulation. One of the key elements to consider here is the scope of financial regulation and supervision. For a start, in periods of abundant foreign capital, intermediaries that have not accessed cross-border financing may begin doing so, lacking both the adequate regulation and internal risk management. Furthermore, if prudential regulation on traditional intermediaries tightens in these episodes, incentives are increased for by-passing these intermediaries. An additional element to consider is the speed at which financial innovations are incorporated into middle income economies. For sure, large global financial institutions have incentives to expand the scope of their financial services. However, if possible, the speed at which this is done should be kept in line with the capacity of domestic regulators and supervisors to monitor and respond to the potential risks generated by these changes.

Chart 3 Dollarisation of liabilities of the corporate sector in Latin America: 1992-2009

(in percent, annual average across firms)



Source: IMF.

Regarding monetary policy, the main challenge of EMEs today is to avoid persistent deviations of inflation from its target, especially in an environment where the price of agricultural commodities and oil have been rising sharply. Changes in relative prices have to take place, but the risk of propagation to other prices has to be mitigated, in particular in economies, like Chile, that are operating close to full capacity. Monetary policy cannot be subordinated to exchange rate objectives, even in cases where measures to alleviate exchange rate appreciation have been adopted. This is the reason why in Chile we implement sterilised intervention in a fully transparent way, with pre-announced magnitudes for foreign exchange purchases. This allows preserving independence of monetary policy to stabilise inflation.

Regarding financial stability, I have outlined some issues relevant to EMEs, but there is a need for global cooperation. My opinion is that too much of the recent discussion on capital inflows has been framed from the perspective of recipient countries. Although this view is certainly relevant, it is incomplete. The risks of excessive currency mismatches, overvalued assets, complex products and so on, are also relevant for the institutions making these investments –be they large internationally active banks, defined benefit pension funds or insurance companies. Hence, addressing the global risks to financial stability requires that source countries also properly monitor and control these risks with adequate supervision and regulation.

Olivier JEANNE

Professor

Johns Hopkins University

Originally, central banking was born from an act of collusion between the sovereign and the financial sector. A good illustration (since this conference is held in the Napoléon room of the Westin Hotel!) is the creation of the Banque de France by Napoléon Bonaparte in 1800. Napoléon's objective was to have an institution that would be more willing to finance the Treasury than the Parisian private bankers, in exchange of which he was ready to grant the new institution an exclusive privilege of issuing bank notes in Paris. The first years of the Banque saw conflicts between the private bankers who owned the Banque and Bonaparte,¹ as "he saw that they made use of the Bank to advanced their own interests" (Liesse, 1911, cited in Goodhart, 1988). Those conflicts led to a new law that ensured, a few years later, that the management was appointed directly by the head of state.

The origin of the Banque de France illustrates a more general pattern. As Goodhart (1988, pp. 19-20) puts it: "Central banks were generally set up initially in the eighteenth and nineteenth centuries to provide finance on beneficial, subsidised terms to the government of the day, and were often rewarded in return with certain monopoly rights in note issuing."

This suggests that if one tried to define the objective of central banking in choice-theoretic terms, the original objective was to maximise the joint welfare of the sovereign and of the financiers.

Obviously, we live in very different times. Central banks have objectives that are primarily *macroeconomic*, and these objectives are often laid out explicitly in a mandate that constitutes a sort of "contract" between the central bank and society. The objective is to maximise the welfare of society (often represented, in modern models, as a "representative consumer"). This being said, the tensions between the central bank, the sovereign and the financiers that existed at the origin of central banking are still present and I will argue that the crisis gives them new prominence. My remarks will be organised in three parts. First, I will describe the new consensus about monetary

policy and how it is being revised in response to the crisis. I will then talk about the relationship between the central bank and the financiers, and that between the central bank and the sovereign.

I | The "new consensus"

The theory and practice of central banking has always been work in progress. The main focus, since the fall of the Gold Standard, has been the "invention" of a new nominal anchor to replace gold. This effort culminated at the end of the last century in a consensus about monetary policy that can be characterised as follows:²

- the objectives of central banking are *macroeconomic*, primarily in terms of inflation and secondarily in terms of output or employment;
- the institutional framework of monetary policy should ensure both the independence and the accountability of central banks.

These ideas are embodied in the mandate of inflation-targeting central banks, as well as the practice of many central banks that do not operate in the context of a formal inflation-targeting regime. The optimal central banking arrangement has been described, in theoretical terms, as a "contract" that is passed between society and the central banker (Walsh, 1995).

The financial crisis has led to several critiques of this consensus. The main critique was that the focus on the macroeconomic objectives of central banking had come at the cost of neglecting financial stability. This has led to debates about how financial-stability policies can be improved, and about the extent to which central banks should be in charge of those policies. It is generally accepted that the provision of liquidity in a crisis should be done by central banks, but there are disagreements about the role of central banks in prudential regulation and supervision

¹ The new institution was owned by private shareholders, mostly bankers, but also by members of the Bonaparte family.

² I am giving here a definition of the new consensus that is rather minimalist and glosses over significant differences in the way that central banks practice monetary policy because these differences are not essential for the points that I am going to make.

(Blinder, 2010). The general trend, however, seems to be giving more powers to central banks in those areas.

There is also a debate about whether monetary policy should pursue financial-stability objectives on top of its macroeconomic objectives. In particular, should the interest rate be increased above and beyond the level required by the inflation and output objectives during asset price and credit booms in order to mitigate the risk of a crisis?³ The positive answer is based on what one might call a “holistic” view of monetary policy, that is, a belief that all instruments (including interest rate setting) should be put at the service of pursuing all targets (including financial stability). The opposite view (which one might call “reductionist”) is that monetary policy should remain exclusively at the service of its macroeconomic objectives, whereas financial stability would be pursued by other instruments such as macroprudential policies (see, e.g., Svensson 2010).

These debates are still going on and it is probably premature to try and delineate the contours of a new post-crisis consensus. This being said, most of what I hear from central banks suggests an attempt to preserve the purity of the “macroeconomic contract” for central bankers. It is argued that since it is financial-stability policies that were at fault before the crisis, it is those policies that need to be fixed. Conditional on this, there is no need for a big revision in the pre-crisis consensus about monetary policy itself: it should continue to focus on its macroeconomic objectives.

I can see merits in the revised consensus. It is hard to disagree with the notion that it is better to develop new instruments than chasing more and more targets with the interest rate. Furthermore, monetary policy is probably too blunt an instrument to deal with financial imbalances when they develop in certain sectors of the economy. In the euro area, in particular, booms and busts in credit and asset prices are often national, and so must be dealt with using another instrument than monetary policy.

The main problem with the new consensus, as I see it, is not a lack of intellectual consistency, but a lack of *realism* about the challenges to central banking

that will stem from the crisis. Those challenges, I will argue, are related to the “dirty roots” of central banking –the triangular relationships between the central banker, the financier and the sovereign. Let me consider, in turn, the financier and the sovereign.

2 | The central banker and the financier

One thing that was clear to Napoléon Bonaparte, but that the consensus model is missing, is a realistic representation of the financial sector as a special interest. The consensus model focuses on the agency problems that arise between the central bank and the sovereign (the objective being to preserve the former from the latter's discretionary interventions), but it neglects the more subtle agency problems that might arise with the financial sector. The financial sector is represented as essentially passive: as an anonymous and perfectly competitive market for bonds –or as a source of financial friction in the monetary policy channel.

One important new theme that has emerged from the crisis, however, is that of the capture of policy-making by the financial sector, especially in the United States (see Johnson and Kwak, 2010, and references therein). Indeed, one reason to endow central banks with more regulatory and supervisory powers is the perception that they will be less amenable to capture than agencies with a narrower mandate. But this raises the question of the extent to which central banks themselves are independent from the financial sector as an interest group.

This is not an easy question. First, there are legitimate reasons that the relationship between central banks and the financial sector should be a symbiotic one. Central banking, whether it relates to monetary policy or financial stability, is largely about managing the expectations of the financial sector. It stands to reasons that central bankers should pay close attention to those expectations. Understanding how financiers think may sometimes come close to thinking like them.

Second, the mechanisms by which central banks come to internalise the objectives of the financial sector

3 This is the continuation of a debate that was already going on before the crisis: see for example Borio and Lowe (2002), Bordo and Jeanne (2002), Bernanke (2002). This debate is related to, but conceptually distinct from the question of whether monetary policy contributed to causing the boom. Some argue that the US real estate boom was caused in part by a policy interest rate that was too low from the point of view of the macroeconomic objectives of monetary policy (see, e.g., Taylor, 2007). I tend to agree with the opposite view that monetary policy was roughly in line with the Taylor rule given the information available at the time (Bernanke, 2010), but this does not mean that the interest rate should not have been higher for prudential reasons.

are implicit and indirect. This does not mean, however, that they are not powerful. For example, central bankers are appointed by the sovereign, not by the financial sector. However, the basis for this appointment is the professional reputation of the candidates, which itself is strongly influenced by the opinion of market participants. Between two candidates that are otherwise equally qualified for the job of central bank governor, the sovereign is likely to choose the one who is more popular with the financial sector. Thus, a central banker with rational career concerns should always pay close attention to his or her reputation with private market participants.⁴

One could object that central banks cannot veer away too much from their legitimate objectives because they are guided or constrained by their mandate. But again, this mandate is about the *macroeconomic* objectives of monetary policy, and leaves plenty of discretion insofar as policies toward the financial sector are concerned. There is a lot of room, in the interstices of the macroeconomic contract, to pander to the interests of the financial sector. The problem, in the parlance of contract theory, is that the contract for central banker is “incomplete”.

Following this train of thought logically leads to the following model for what real world central banks are doing: central banks maximise the welfare of the financial sector conditional on satisfying their macroeconomic contract with society. Such a model is perhaps too simplistic but it has a certain power to explain the financial crisis as well as how central banks responded to it. In the United States, for example, the macroeconomic contract (low inflation, low unemployment) was satisfied before the crisis, but the Federal Reserve System (Fed) clearly made insufficient use of the prudential policy tools that were at its disposal.⁵ The crisis policies of the Fed have been interpreted through a similar prism by Buiter (2008).⁶

It is also hard not to notice that when the “science of monetary policy” –to use the phrase of Clarida *et al.*, 1999– contradicts the preferences of the financial

sector, it is the latter that tend to prevail. Consider, for example, the operation of monetary policy under the “zero-bound constraint” on the nominal interest rate. A large literature on the Japanese liquidity trap had concluded, before the crisis, that quantitative easing does not work unless it raises the expected rate of inflation (Krugman, 1998; Eggertsson and Woodford, 2003; Walsh, 2010). The implication is that the central bank should try to raise the expected inflation through a policy of “forward guidance” about the future policy rate. This is an implication not only of dynamic stochastic general equilibrium (DSGE) models that have been increasingly used by central banks, but of any model in which monetary policy operates through the real interest rate and expectations are forward-looking. The Japanese monetary authorities were blamed for failing to understand that fact.

When the US Fed and other central banks hit the zero bound constraint, however, they too resorted mainly to quantitative easing and very little to forward guidance.⁷ There may be good reasons for this: in particular, the forward guidance of inflation expectations may be difficult to implement in practice without compromising the long-run credibility of monetary policy. But it is also difficult not to note that the financial sector should prefer quantitative easing to higher inflation, because the former bids the price of assets up whereas the latter depresses the price of long-term fixed-income assets.

How can this problem be solved? Ideally, one would like to “complete” the contract between the central bank and society so as to address the agency problems with the financial sector as they were with the sovereign. The problem is that is difficult or even impossible to design contracts for financial-stability policies that would have the same transparency and accountability as for monetary policy. This is intrinsically more difficult because the outcome of financial-stability policies is difficult to observe and measure. As shown by Laffont and Tirole (1991), this is exactly the kind of environment in which regulatory capture tends to arise.

4 Alternatively (if one does not like a worldview in which opinions are professed out of self-interest), the individuals who genuinely think that what is good for the financial sector is good for the country are more likely to prevail in the contest for central bank governor jobs.

5 The Fed did not have all the tools that it retrospectively wished it had, but it did not use effectively the available instruments, suggesting that the lack of instruments was not the only problem.

6 Buiter (2008) writes about a “cognitive regulatory capture” of the US central bank by Wall Street: “Throughout the ten months of the crisis, it is difficult to avoid the impression that the Fed is too close to the financial markets and leading financial institutions, and too responsive to their special pleadings, to make the right decisions for the economy as a whole.”

7 Thus, the Fed chairman went to great length to reassure the public and congress of an exit strategy that would not involve higher inflation. I am glossing here over an important nuance between “quantitative easing” and “credit easing”. The purchase of long-term bonds may reduce the spread between long-term and short-term bonds, although the impact of this policy seems to be relatively small (Gagnon *et al.*, 2011).

What are the policy implications? First, I believe that the debate about the capture of policy-making by the financial sector is likely to stay with us for some time. As central banks get more and more involved in financial-stability policies, they will need to find credible ways of defusing the suspicion that they care about the interests of the financial sector rather than society as a whole. A failure to do so would weaken the legitimacy of central banks' independence, including for monetary policy.

Second, an incomplete contract view of central banking can provide a justification for a holistic view of monetary policy in which the interest rate is used also to achieve objectives in terms of financial stability. The idea that monetary policy can focus exclusively on macroeconomic objectives works only if the public trusts that financial-stability policies are doing their job. But if there are reasons to doubt that they will, it can make sense for society to ask the central banks to lean against the wind in financial booms in a *verifiable* way, by raising the interest rate.

3 | The central banker and the sovereign

The consensus model of monetary policy assumes *monetary dominance*, i.e., that the monetary authorities do not monetise government debt. This implies that if the government is insolvent, there must be a fiscal adjustment or a default. Monetary dominance is a basic assumption (so basic that it generally goes unstated) of the consensus model. However, because of the fiscal consequences of the Great Recession (and aging), advanced economies are heading into an extended era of fiscal stress. This raises the question of how a conflict between monetary dominance and fiscal dominance would play out in advanced economies.⁸

The first question one must address in a conflict between monetary dominance and fiscal dominance is: who wins? The litmus test of monetary dominance, to put it concretely, is whether the central bank would rescue the Treasury or let it default when push comes to shove, that is, when the Treasury is unable to roll over its debt with private lenders. It is fair to say

that we do not know the answer to this question, and that it may depend on the countries that we look at.

I tried to get a better sense of the answer in the case of the United States by asking the question to a few economists who are working or have worked in the past at the US Fed. The overwhelming majority of my respondents said that they could not imagine that the Fed would let the US government default. The reasons that were given to me ranged from the systemic consequences of a default for the financial sector, to the fact that the US Treasury never defaulted in its history. Only one respondent saw a default as possible, although unlikely.

In addition, the historical evidence does not suggest that monetary dominance –when it is really tested– is common. I have looked for, but did not find a case where a government defaulted on its debt although the debt could be monetised and inflation was low. There are of course many examples of government defaults in the modern period (as reviewed by Reinhart and Rogoff, 2009), but they generally occurred when the debt was denominated in foreign currency or indexed in such a way that it could not be easily monetised, or when the domestic seigniorage capacity had already been destroyed by hyperinflation.⁹ By contrast, there are many examples of peaks in government debt being resolved by high inflation, an approach that seems especially effective if nominal interest rates are kept low by financial repression (Reinhart and Sbrancia, 2011).

The lack of historical evidence in favor of monetary dominance does not mean that it cannot prevail in the future. In some countries (including euro area countries) central banks are explicitly barred from monetising government debt, and such safeguards might indeed be effective. This being said, it is not farfetched to think that we are entering a time in which monetary dominance will be tested and will prevail with a probability that is lower than 100 percent. How does monetary policy work in such an environment?

This question has been studied in a small theoretical literature. For example, Davig and Leeper (2011) use a DSGE framework to assess the implications of rising government debt in an environment with a “fiscal

⁸ This conflict is already visible in the euro area, but in a form that is rather special since it involves one single independent monetary authority and seventeen largely uncoordinated fiscal authorities. Although this setting seems uniquely tilted toward monetary dominance, it is striking to see how difficult letting a government default seems to be.

⁹ See Table 7 of Reinhart and Rogoff (2009) for a list of domestic government debt default or restructuring.

limit", i.e., a point where either a fiscal adjustment or debt monetisation must occur.¹⁰ They show that the risk of debt monetisation poses a substantial challenge for a central bank that targets the inflation rate. Monetary policy falls prey to a kind of "peso effect": the risk of monetisation, even if it is small, increases expected inflation, which in turn worsens the trade-off between inflation and unemployment. As a result, the central bank must pay a much higher cost in terms of unemployment to keep inflation close to the target.¹¹ Davig and Leeper show that this phenomenon starts occurring at a relatively low probability of debt monetisation.

It is easy to see that in such an environment, the dynamics of the economy may be affected by negative feedback loops. Pursuing the inflation target is difficult to sustain if this depresses the economy and worsens the fiscal stress. The relationship between the fiscal policy and the monetary authorities may become excessively contentious. The weak performance of

monetary policy may weaken the societal and political support for central bank independence, making monetisation more likely. This is not an environment in which central banks would like to live in.¹²

What is the policy implication? The main implication for central banks is they have a strong interest in avoiding an outright conflict between monetary dominance and fiscal dominance, which they are unlikely to win. Central banks, thus, should be at the forefront of the research and analysis on how government debt could be structured ex ante so as to minimise the risk of default (for example, by indexing debt to GDP, as suggested by Ken Rogoff in an earlier session of this conference) and how it can be restructured ex post at a minimum cost in terms of financial disruption. Admittedly, it is difficult for central banks to publicly comment about a government default, but on the other hand, eluding the question simply by repeating a mantra about the necessity of fiscal adjustment is not a viable strategy.¹³

This session was about central banking – what central banks are supposed to do and how they are supposed to do it. Before the crisis a remarkable degree of consensus had been achieved about *monetary policy*, which is not the same thing as central banking. The crisis has shaken this consensus, but it is not yet clear how deeply it has done so.

The purpose of these remarks was not to present a critique of the consensus model of monetary policy. I do not know a better alternative to anchor nominal expectations, and it is important to preserve the achievements of this model in terms of price stability and credibility. However, the consensus model might be challenged more deeply than is commonly acknowledged. The contract for central banker is a social contract that can be undone, and ultimately is buttressed by the perception that it is delivering good outcomes for society. I have emphasised two challenges in that regard. First, it will be important for central banks to address the perception that they put excessive weight on the interest of the financial sector. Second, central banks should be more proactive in finding ways of defusing a conflict between fiscal and monetary dominance.

¹⁰ The Davig-Leeper model does not allow for government default. Uribe (2006) presents a model in which default is an alternative to monetisation, but in which there is no nominal stickiness. There is clearly a need to develop richer models of the conflict between monetary and fiscal dominance.

¹¹ Davig and Leeper (2011) claim that the central bank is "losing control" over the inflation rate. What they mean is that a monetary policy rule that delivers low and stable inflation under monetary dominance implies high and increasing inflation when monetary dominance is uncertain. Another way of putting it (which I prefer) is that although the central bank can control inflation, it faces a worsened trade-off with unemployment.

¹² Another problem is that the operation of monetary policy becomes more complicated as short-term government debt is no longer a safe asset (Bolton and Jeanne, 2011). The lack of certainty about monetary dominance creates a host of problems that have not been thought through carefully in the literature.

¹³ Let me add in passing a thought about the meaning of "flexible inflation targeting" in a conflict between monetary and fiscal dominance. Flexible inflation targeting, as defined by Svensson (2010), means that the central bank minimises a loss function involving inflation and capacity utilisation. Monetising the government's debt implies high inflation but letting the government default might involve a very low level of capacity utilisation. It is not a priori obvious, if the choice is between those extremes, that flexible inflation targeting implies that the central bank should opt for default rather than monetisation. This is a quantitative question, not a point of doctrine.

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I am going to talk about the relationship between monetary policy and financial stability. This topic is abundantly debated. I will take, however, a modest approach and deal only with some operational aspects. These are, nevertheless, crucial since the essence of modern central banks is their operational independence. It is therefore relevant to ask how it might be affected or impacted by the search for greater financial stability.

The starting point is that financial frictions matter. They matter both for financial stability, which is obvious, and for the transmission of monetary policy, a point which should have been obvious but was somehow forgotten. Prior to the crisis, most of our macromodels tended to represent the transmission mechanisms through a simple, immaculate, inter-temporal substitution effect whereby changes in policy rates would induce expenditures shifting across time. Money and financial institutions play almost no role in that mechanism, as credit was implicitly supposed to respond only to interest rate movements.

What do the words “financial frictions” exactly mean? I will interpret those terms as encompassing the conjunction of maturity transformation and leverage which drives the expansion or contraction of financial institutions’ balance sheets, thus the overall equilibrium in credit markets, including securitised markets.

Those dynamics obviously have a direct impact on financial stability. Financial fragility comes out of excessive leverage and maturity transformation, fueling asset price increases. And, conversely, liquidity shocks and deleveraging are the symptoms and channels behind financial crises.

As importantly, and less recognised until recently, those dynamics also have a major impact on the transmission mechanism of monetary policy. The functioning of the credit channel, but also the interest rate channel depend on financial intermediaries being able to fund themselves and arbitrage across different market segments, instruments and maturities. Dysfunctional credit markets were a major reason why central banks embarked into exceptional liquidity provision, credit easing and asset purchases.

One important point, here, is that the same dynamics affect both financial stability, on the one hand, and monetary transmission channels, on the other. Now, presumably, any macroprudential policy would try and influence the evolution of maturity transformation and leverage. By doing so, however, it would also have a monetary impact. And, conversely, changing the monetary stance, by moving policy rates, also may have an influence on financial stability.

The relative strength of those influences is not empirically known. Those of us who would use monetary policy with a financial stability objective implicitly assume that leverage and maturity transformation are very sensitive to interest rates. I am not sure this is true. At the very least, during the crisis, we have seen deleveraging proceeding at an accelerated pace, although interest rates have been brought down –and this is the reason why there has been a zero lower bound problem. I suspect that, symmetrically, interest rate hikes would have been powerless to stop the incredible build up in leverage prior to the crisis.

This is the very reason why we need additional –macroprudential– tools to deal with financial instability. But this analysis also shows that macroprudential and monetary tools are not independent. So we have to give up the ideal vision of a world where two objectives –price and financial stability– would be pursued with two independent set of instruments. The reality is somehow messier and this has important consequences. Operating two different policies with two sets of interacting instruments is definitely a challenge. Once we move away from the pure “Tinbergen” world, preserving the operational independence of monetary policy may require particular attention.

Add to this that mandates and accountability regimes are very different for price and financial stability. Central banks are independent, but macroprudential authorities are not. In all major jurisdictions, Governments, and Parliaments, are deeply involved in the organisation and management of macroprudential supervision. Likewise, while price stability mandates are precisely defined and often quantified, financial stability mandates are specified in very broad terms.

There are good reasons for this situation. In devising and implementing macrosupervision, authorities are facing delicate trade-offs between efficiency and stability in the financial system. Deep social choices are involved, which, arguably, can differ across countries and periods of time. Also, as recent experience has shown, financial stability may ultimately involve fiscal commitments.

Finally, and most importantly in my view, we lack the analytical framework upon which both a financial stability mandate and operational independence could be validly and legitimately anchored. Central bank independence has closely followed theoretical breakthroughs, in the 1970s, in our understanding of inflation dynamics. It was made possible because societies reached a common –and easily communicable– agreement on the lack of trade-offs involved, on the long run, between inflation and growth. That robust, and commonly shared analytical background on what monetary policy could –and could not– achieve was essential in establishing the primacy of price stability and the legitimacy of independence in monetary policy making. We are very far away from such a theoretical agreement on the causes of financial instability, on the real trade-offs between efficiency and stability in finance, on the role of innovation and, finally, on the origins and detection of asset and credit bubbles. It would therefore be illusory, and dangerous, to expect that a precise mandate for financial stability could be defined, let alone quantified, in a foreseeable future.

The situation is therefore somehow confusing and this raises important challenges for the future.

At the risk of oversimplifying, central banks associated with –or responsible for– financial stability may find themselves with:

- two separate missions: price and financial stability;
- two different accountability regimes: full independence for monetary policy; coordination or subordination mode for financial stability;
- two interacting sets of instruments: interest rates and macroprudential tools (a situation made even more complicated when unconventional monetary policies are implemented).

The potential for confusion is real. It is not difficult to imagine situations where actions that central banks take on pure monetary policy grounds are nevertheless contested in the name of financial stability. To some extent, this has always been a possibility. The difference, now, is that institutional frameworks exist through which –implicit or explicit– challenges to central banks operational independence can materialise.

It might be tempting to conclude, then, that central banks should stay away from financial stability and concentrate exclusively on ensuring price stability. This, unfortunately, is impossible, if only for reasons that Charles Goodhart has well explained in a previous paper: ultimately, central banking is about providing liquidity and liquidity provision is an essential and central component of financial stability.

What can we conclude?

- First, central banking is not only about monetary policy but also involves an essential component of financial stability. This seems to me a broad consensus coming out of the crisis.
- Second, monetary policy is about setting interest rates, but also involves observing and analysing leverage and liquidity. Monetary aggregates as well as the volume and modalities of maturity transformation reveal very useful information on the transmission mechanism. This is actually the conventional wisdom within the Eurosystem, through the use of the second pillar. Although less acceptable outside the euro area, I conjecture that the lessons of the crisis will trigger some rethinking here and there.
- Finally, the debate on whether monetary policy should also aim at financial stability must give more consideration to the awkward interaction between instruments and the diversity of accountability regimes. Both create the potential for additional confusion about the ultimate objectives of each policy. It seems to me that most of the discussions are conducted under the implicit assumption that price stability will be as easy to maintain in the next decade as it was in the past. So, there would not be much to lose in “diverting” some of the power and credibility of monetary policy to seeking financial stability. It is very clear that this assumption is severely tested, perhaps sooner than we thought. It will be important, in this environment, to maintain clarity of purpose and robustness in institutional arrangements in order to limit the risk of weakening the benefits of central bank independence, which were so hardly won over the last decades.

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The topic of this session is lessons from the crisis, specifically regarding the role of central banks. Let me start with a question: how do we learn in our profession? The answer, I believe, is that our main guide is history. Indeed, one of the many differences between central banking and the natural sciences is that in central banking, unlike the natural sciences, we cannot run controlled experiments to improve our knowledge. As a result of the crisis, we are experiencing a unique natural experiment to draw lessons from. I fully expect this episode, which unfortunately is still mutating and evolving in some areas, to provide material for myriads of PhD theses and other studies for decades to come.

What do we mean by “lessons” for the role of central banks? Lessons in the sense of learning things we did not know? Or in the sense of reaffirming things we knew? In my view, we have some of each but, in addition, we have seen an evolution in the consensus views on familiar questions. Let me focus on just a few.¹

The crisis has reaffirmed the benefits of an independent central bank focused on maintaining price stability and safeguarding well-anchored inflation expectations in line with price stability. The focus on price stability yields gains in credibility and allows central bank flexibility as well as the ability to act decisively when needed on other issues. As an example, let me remind you of the decisive provision of liquidity in August 2007 and later in September 2008. Another example is the decisive policy easing in response to the crisis. The risks of deflation were greatly reduced because inflation expectations over the medium term remained well-anchored, in line with our definition of price stability.² The new spike in energy prices, that reminds us of the spectre of stagflation risks, once again reaffirms how important it is to act decisively to ensure that inflation expectations remain well-anchored to preserve stability.

Another lesson reaffirmed is that monetary policy is not just about setting policy rates. Even though

the academic consensus was converging to this view before the crisis, monetary policy is *not just* about determining current and future overnight interest rates. As both practical experience and also earlier generations of academics have taught us, there is much more to monetary policy.

Prior to the crisis, some were concerned about the zero bound on short-term nominal rates. However, the large array of unconventional measures employed successfully by various central banks around the world to engineer further policy easing has dispelled the fear that the zero bound is like hitting a wall, rendering monetary policy helpless.

The management of a central bank's balance sheet has been understood as an important policy tool. We have also learned, in some cases while forced to innovate on the way, about operational aspects that matter for policy. Examples include the collateral framework and the list of counterparties. In revised editions of central banking textbooks, I expect to find discussions of these things that were absent from the pre-crisis editions.

There have also been lessons about the strategy of monetary policy. In my view, the crisis has reaffirmed the danger associated with the temptation to fine tune the real economy, in addition to maintaining price stability. One way to pose this debate is by contrasting two views.

The first, the stability oriented approach, can be characterised as attempting to dampen economic fluctuations by promoting stable economic growth over time, subject to the primary focus on price stability.

The second, the activist view, can be seen as suggesting that, in addition to price stability, an equally important goal of monetary policy is to actively guide the economy towards attainment of its “potential”. That is, an important guide to policy is the “output gap”, which measures how far GDP deviates from its potential.

¹ I would like to note that the views I express are my own and do not necessarily reflect views of my colleagues on the Governing Council of the European Central Bank.

² See also the instructive analysis by John C. Williams, the newly appointed President of the Federal Reserve Bank of San Francisco, who has examined the role of well-anchored inflation expectations for containing deflation risks in the United States. (Williams (J.C.) (2009): “The risk of deflation”, FRB San Francisco Economic Letter, 12, 27 March).

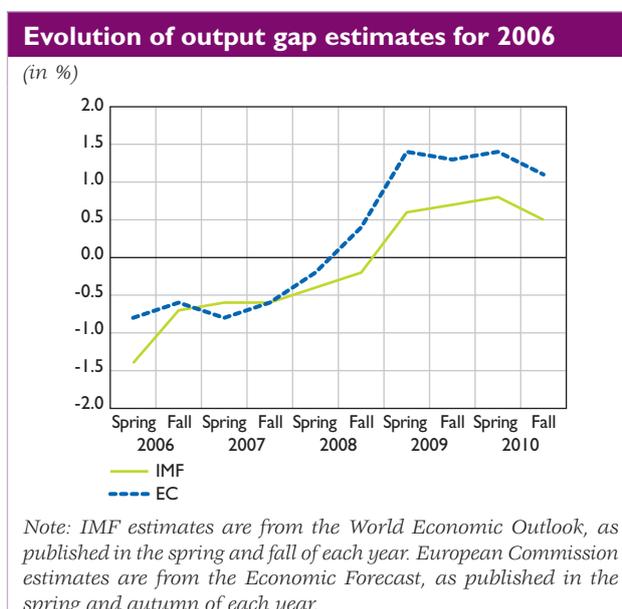
But policy activism in this sense can be dangerous. Trying too hard to close real activity gaps can lead to worse results in both price stability and economic stability. The reason is simple. Too often, the measures of the output gap that our experts can produce give the wrong signal in real time, when policymakers need to take decisions.

Distracting attention away from price stability by attempting to fine tune the real economy might result in a central bank remaining too accommodative for too long following a recession. There are numerous examples of policy recommendations that have proved to be wrong for this reason, and not just from the 1970s. This risk must be avoided.

Nothing should distract a central bank's focus on preserving price stability. A central bank should strive to remain focused and be pre-emptive in its fight against inflation.

How activist central banks can be is an issue where there seems to be quite a bit of disagreement so let me be more explicit by using the euro area as an example. Let us take the first ten years of the euro area and look at real-time estimates of the output gap as published by the International Monetary Fund (IMF) and by the European Commission (EC). (The information can conveniently be found on their websites.) Both organisations have suggested, virtually every spring since 1999, that the output gap for the year reported would be negative. If we compare these to recent retrospective estimates we observe a significant bias. The bias is mainly due to the fact that the experts are now more pessimistic about what potential output was in the euro area than they were in the past. This is not the experts' fault. We simply cannot know in real time. And this applies not only to the size of the output gap, but even to its sign. In comparing what the experts tell us now and what they were telling us then, in real time, the sign of the output gap is revealed to be incorrect in more than half of the years in the first decade of the euro area.

Consider the year 2006, the year before the financial turmoil began. According to the IMF and the EC, the euro area operated below its potential that year with the gap being around minus 1 percent (see chart). As late as 2008, the year 2006 was still being seen as one of wasted resources. But by 2009, with revised estimates, the experts were telling us that three years



earlier the euro area was overheated and output exceeded its potential by a significant amount.

Mismeasurement of the output gap can lead to errors not only in monetary policy –if and when central banks incorrectly rely on this information– but can also lead to mistakes in fiscal policy. In 2006 we had a fiscal deficit in the euro area as a whole. Alarms about fiscal soundness should have sounded before the crisis. But the alarms would have sounded much louder if the EC, the IMF and others had not suggested that the economy was running below potential. Inappropriate reliance on mismeasured output gaps can lead to complacency during good times.

I recount this example about how the output gap can be misused in policy debates because once again, as we are coming out of the crisis, some voices are stressing the extent of the output gap that the euro area is facing today, perhaps drawing conclusions about policy that could again be reversed as time goes by.

The focus on price stability must remain unrelenting.

That said, another lesson is the following: the central bank focus on price stability is insufficient to maintain overall stability in the economy. The crisis has confirmed that a central bank with a price stability objective and insufficient regulatory powers cannot ensure broader financial stability in the economy.

The crisis has revealed a general underappreciation of systemic risks in microprudential supervision. It has highlighted the need for a more system-wide macroprudential approach towards supervisory oversight to ensure overall stability in the financial system. As a result, we see a shift in emphasis with new organisations created in some jurisdictions to address this gap. In the euro area, the establishment of the European Systemic Risk Board is meant to serve this role.

By definition, microprudential supervisors focus on individual institutions and cannot effectively assess the broader macroeconomic risks that pose a threat to the financial system as a whole. This is a task best suited to central banks. But for central banks to better enhance financial stability they must be provided with the right tools. Consider, for example, an episode of persistently high credit growth in an environment of price stability. Adjusting the interest rate tool is unlikely to be the most appropriate response. Ideally, under such circumstances, the central bank should have at its disposal, either directly or through its participation in a macroprudential body, the macroprudential

levers with which to contain the risk of a potential financial disturbance. These could comprise the power to vary capital requirements, leverage ratios, loan-to-value ratios, margin requirements and so forth. Considering the important informational synergies between microprudential supervision and systemic risk analysis, bringing microsupervision close to, if not under the same roof as, other central bank functions seems an attractive proposition. This should contribute to better management of overall economic stability.

A concern has been expressed that an expanded role by central banks in this direction could compromise their independence that is so critical in defending their primary objective of price stability. That may indeed be a risk. But precisely because central banks are generally among the most independent institutions, they can strengthen the independence of the supervisory environment. The risk of political pressure delaying a needed tightening in credit conditions via macroprudential tools, for example, can be minimised if the central bank has a key role. In my view, this benefit, together with the benefit of informational synergies, outweigh the risks.

I close with a very old lesson for central banks: humility. This crisis was not just a once-in-a-generation crisis. It proved to be much worse. I hope subsequent relative calm allows our 22nd century counterparts to characterise this as a once-in-a-century event. But central banks must not let their guard down. The next crisis might well challenge the limits of our knowledge in new and as yet unknown ways.

SESSION 4 (ROUND TABLE)

TOWARDS WHICH INTERNATIONAL MONETARY SYSTEM?

Moderator:	Martin WOLF, Associate Editor and Chief Economics Commentator, Financial Times	101
Panellists :	HU Xiaolian, Deputy Governor, People's Bank of China	102
	Christine LAGARDE, Minister of the Economy, Finance and Industry, France	104
	Jacques de LAROSIÈRE, Advisor, BNP Paribas	107
	Kiyohiko G. NISHIMURA, Deputy Governor, Bank of Japan	109
	Janet YELLEN, Vice Chair of the Board of Governors, Federal Reserve System	111

Martin WOLF

Associate Editor and Chief Economics Commentator

Financial Times

In introducing a discussion of the reform of the international monetary system, one needs to start from where we are. When we do so, we must first appreciate that we are not where the weight of opinion in Western professional and policy circles of, say, a decade ago thought we would now be.

In fact, we have effectively two international monetary systems working side by side –one for the high-income countries and the other for many emerging countries, including the most important emerging country of all, China. While a decade or two ago, the emerging market economies could not change how the world economy as a whole worked, this is clearly no longer true.

After the Asian financial crisis, Western opinion converged more strongly than before on the view that the international monetary system should be built around the following basic principles: national fiat money managed by an independent, inflation-targeting central bank; freely floating exchange rates; little, if any, need for foreign currency reserves; a modestly sized International Monetary Fund, as crisis lender; and bailing-in of private creditors in a crisis. This perspective was never unanimous: France tended to hanker after fixed exchange rates and the European Union introduced the euro, to avoid flexible exchange rates within the single market. But this was the Western dominant perspective on how the system should operate at a global level.

Emerging countries, particularly in East Asia, reached quite a different conclusion. They decided that the right response to the vulnerability to crisis demonstrated in the 1990s included heavily managed exchange rates, a return to reliance on export-led growth and open-ended accumulation of foreign currency reserves.

The balance between financial and real economy motives for these policies has varied over time and from country to country. But the overall consequence has been dramatic, in two fundamental respects. First, the total stock of global foreign currency reserves rose

from USD 1.6 trillion in January 1999, after the end of the Asian crisis, to USD 7.5 trillion in July 2008, just before the global financial crisis. They then fell modestly to USD 7.1 trillion in February 2009. But by October of last year they had risen massively again, to reach USD 9.1 trillion. In all then, global reserves have risen by the almost incredible total of USD 7.5 trillion since January 1999. Second, the emerging countries, as a whole, have been running substantial current account surpluses, partly because of deliberate exchange rate intervention. These have been absorbed –and wasted– by a limited number of high-income countries, with the results we now all know.

The question to be addressed in this session is how these two very different approaches to the global monetary system are to be reconciled, in practice. Without doubt, they reflect fundamentally different views of how governments should relate to markets. These views are not going to change in a hurry, particularly in China. Thus what is needed is not redesign from agreed first principles, but pragmatic mutual accommodation. That is, I think, precisely what the Group of 20 is –and should be– trying to achieve, most recently under the forceful chairmanship of France. Such a mutual accommodation would embrace the following elements: agreed guidelines on when a position of “fundamental disequilibrium” had been reached; agreed guidelines on the balance of exchange rate and macroeconomic policy adjustments to such a disequilibrium; an agreement on management of large-scale reserves, including diversification; agreement on a global reserve pooling mechanism, within the IMF, big enough and automatic enough to persuade countries not to accumulate further vast foreign currency reserves; and reforms of the governance of the IMF large enough to persuade important players that the institution will respect their concerns.

This is not going to be easy. But it is precisely the sort of accommodation that will be needed if we are to manage a world with new powers that are also still emerging countries. The challenge is huge. It must be met.

HU Xiaolian

Deputy Governor

People's Bank of China

Reserve currency is one of the key elements of the international monetary system (IMS). The reserve currencies we use today get their position through long-run evolution of international political and economic system and as a result of market choice. They are used in international transaction, intervention and book-keeping etc., and are regarded as international assets and currency anchor, and facilitating global trade and investment. Nevertheless, in the current IMS, there are some non-negligible problems that merit further discussion.

First, excessive volatility among major reserve currencies causes sharp changes in commodity prices, balance sheets and income statements that are denominated in those currencies, though such movements are not based on changes of actual value or cost and operational performance. Under the current system, major reserve currency issuing countries adopt free floating exchange rate regime. Exchange rates of these currencies are significantly influenced by macroeconomic policies and formed in the market. However, they may not be always consistent with changes in economic fundamentals. For example, the exchange rate between the Euro and US dollar has been fluctuating within a range between 0.8 and 1.6 in a few years, while there has been no corresponding change in economic fundamentals of Europe and United States. Highly volatile exchange rates among major reserve currencies cause unnecessary disruptions to the real economy. Excessive fluctuation sometimes could be a major source of risk and vulnerability to national economies, and sometimes even trigger crisis.

Second, policies of major reserve currency issuing countries have an enormous spillover effect on other countries and the world economy more broadly, and at the same time the effect of their own policies has been weakened by the international usage of their currencies. Domestic economic policies in these countries have both global and systemic implications. If policies in these countries are based on misjudgments or constrained by political concerns, their effectiveness in solving domestic problems will be greatly discounted, and a negative impact will be spilled over to other countries. For instance, easing monetary policy aimed at stimulating domestic demand with a background of

malfunctioning financial system, may lead to more demand for foreign products and capital outflow. This would weaken the effort of recovery in those countries, and also might contribute to asset bubbles in emerging markets.

Third, there is a lack of clearly articulated responsibilities of maintaining appropriate money supply and currency stability, and a designated body to take such responsibilities in the current international monetary system. Under the current system, national central banks take responsibility in their own countries for controlling inflation and thus promote economic growth. At the same time, major reserve currencies are the key vehicle of global credit creation and the main instrument for international payment and settlement. Large expansion or contraction in supply of reserve currency can generate significant impact on global commodities and financial markets and on cross border capital flows. However, currently we do not have an international institution with clear mandate to ensure orderly and appropriate supply of reserve currencies and with the responsibility to keep its value stable.

Therefore, there is a need to improve the current IMS, and there are several potential paths to move forward.

Firstly, issuers of major reserve currencies need to exercise self-discipline. Under the current IMS, major policy mistakes and internal imbalances kept too much for too long should be avoided. At the same time, there is a need to put in place a set of uniform international principles, to guide the adoption of appropriate policies to improve macroeconomic and financial soundness. This could help to reduce their possible negative policy spillovers.

Secondly, diversify international reserve currency. It helps diversify risks, distributes the responsibility of maintaining stability of IMS among more countries, so that it could mitigate a potential shock on global financial and economic stability caused by policy mistake in major reserve currency countries. As we can see, euro and some other currencies now play important role in the IMS. Diversification of reserve currencies comes as a result of market choice.

Other candidates might also emerge in future if they are widely accepted in the market.

Lastly, improve the international monetary system in a well organised way. In this regard, the role of special drawing right (SDR) as reserve currency has been widely discussed after the financial crisis. A SDR is issued and allocated by the IMF and consists of a basket of currencies. It is supra-sovereign and its supply is manageable. As a unit of account it could reduce the volatility of valuation in comparison with

a single currency. It has the potential role to play as an international reserve asset and unit of account etc. Still, there are also many constraints. To address these constraints, we can start tentative reforms in a number of areas, including effort to expand SDR's role as reporting currency, means of payment and pricing, create SDR-based assets and gradually develop SDR market. To support a greater role of SDR, we could consider further improving SDR valuation and allocation, and making the SDR basket more reflective of the reality of global economy.

Christine LAGARDE*Minister of the Economy, Finance and Industry**France*

Dear Mr Noyer, after our February marathon, I am delighted to get together in this magnificent establishment, which many now consider to be an annex of the Banque de France. I know how attached you are to the Golden Gallery, where yesterday evening's meeting was held. But I also understand that you might wish to free yourself from the weight of history in order to look with confidence to the future of the global economy.

Indeed, we live in a disorderly world, in which the share of emerging markets in the composition of global growth has increased steadily from 30% in 1980 to 45% 30 years on. This world is also increasingly interconnected – exports account for a growing share of wealth creation in our national economies – and increasingly volatile. A prime illustration of this is the heightened exchange rate volatility, which is all too often dislocated from economic fundamentals. For instance, between 1 January 2003 and 1 January 2008, the Korean won appreciated by around 30% against the dollar. Conversely, in 2008, it depreciated by 72% against the dollar before appreciating again by almost 30% in the following 12 months. Another example is the high volatility of capital flows that chiefly affects emerging markets. The crisis of 2008-2009 resulted in a decrease in net capital inflows of USD 1,150 billion. In the case of Russia, for example, capital outflows amounted to around USD 270 billion, or 19% of its GDP. Twenty-six episodes of sudden stops in capital flows have been identified since 2008, and 42 since 1990. A third example is a proliferation of liquidity crises with repercussions on the whole economic fabric. To shield themselves, emerging economies are tempted to act unilaterally in the areas of the regulation of capital flows, prudential measures, foreign exchange interventions or monetary measures.

In this imbalanced world, the International Monetary System (IMS) in its current form does not provide the appropriate mechanisms of regulation and coordination. The reform of the IMS is one of the French President's priorities for 2011.

In the first G20 Finance Ministers' meeting on 18 and 19 February we paved the way for the work to be

carried out this year; we defined our objectives and the pitfalls to be avoided and proposed some initial avenues for thought. I would now like to present this first stage to you.

Our starting point is to create the conditions to achieve two closely intertwined objectives, i.e. strong, sustainable, and balanced growth, on the one hand, and an orderly transition to a world that is multipolar in economic and monetary terms, on the other. These conditions are not in place in the "international monetary non-system" that characterises the world today.

In the light of the crisis, we now know exactly what we do not wish to do. We are not pursuing the Cartesian dream of a perfect monetary system. We are not trying to restore a fixed exchange rate system, which would deprive us of the flexibility needed for economic adjustments. We are not attempting to call into question the role of the US dollar as the major international reserve currency. Market forces fundamentally determine the relative share of currencies in trade and financial flows, but it is generally accepted that we are inevitably heading towards a more multi-currency world. We are not in favour of stepping up measures to control capital flows, since such flows are generally conducive to global growth. But we are seeking to avail ourselves of common multilateral rules to be able to guard against, if necessary, destabilising capital inflows or outflows.

Based on past experience, we wish to establish a series of pragmatic measures that are necessary for: improving our coordination in order to achieve strong, sustainable, and balanced growth, reducing the accumulation of foreign exchange reserves, better regulating international capital flows, and attaining an orderly transition to the internationalisation of other currencies.

- The first avenue consists in improving the coordination of economic policies in order to promote growth. To achieve this, we would need in particular to identify the imbalances, via the G20 mutual assessment process under the framework for growth.

In this respect, we made necessary and significant progress at the last G20 Finance Ministers' meeting. We reached an agreement on a series of indicators that will enable us to focus, through a two-stage process, on any large and persistent imbalances requiring measures to be taken. These indicators are public debt and fiscal deficits, the private savings rate and private debt and, for external imbalances, the current account balance, taking due consideration of the exchange rate. We also adopted a timetable for developing the 2011 action plan to ensure strong sustainable and balanced growth and monitor the implementation of existing commitments. We must now agree on the indicative guidelines for assessing each of these indicators, in other words on the use of these indicators to correct these imbalances. The help of the IMF will be indispensable in this exercise.

- The second avenue consists in reducing the need to accumulate foreign exchange reserves, which is costly for both the countries concerned and the global economy. No less than USD 9,247 billion in reserves had been accumulated at end-2009, three-quarters of which by emerging countries. This represents an increase of 162% over five years. From an economic point of view, their use has not always been optimal.

Our aim is to improve the provision of liquidity in order to reduce the need to accumulate foreign exchange reserves, notably via:

- an assessment of the financial safety net systems that we will endeavour to enhance if necessary;

- a better coordination of existing mechanisms with regional arrangements, in particular between the IMF and the European Financial Stabilisation Mechanism or the IMF and ASEAN's Chiang Mai Initiative;

- a closer monitoring of foreign exchange reserves based on common indicators and increased IMF surveillance;

- the boosting of local currency funding, which should contribute to reduce reserve accumulation for insurance purposes.

- The third avenue consists in better regulating international capital flows.

To achieve this, we are seeking to:

- establish a code of good conduct for capital movements and macroprudential measures in order to differentiate between the measures that are required for preserving macroeconomic balances and balanced growth on the one hand, and those for ensuring free capital and trade flows on the other;

- enhance IMF surveillance, ideally by reforming its mandate;

- at the same time, we are seeking to promote the issuance of local currency denominated debt and the development of national financial markets with a view to limiting the vulnerability of emerging countries to international capital flows.

- The fourth and final avenue consists in achieving an orderly transition in which the emergence of new economic areas coincides with the internationalisation of other currencies and reduces the risk of exchange rate fluctuations.

The emergence of new economic areas and international currencies is not without risk. Economic history shows us that economic downturns can lead to sudden monetary adjustments, with sharp breaks, such as the transition from sterling to the US dollar as leading reserve currency: in 1973 sterling became a second class reserve currency, representing less than 7% of foreign exchange holdings, after standing at 60% in 1950 and 30% in 1970. Consequently, we must accompany this transition and reflect on, amongst other things, the role of Special Drawing Rights (SDRs) – the reserve instrument created by the IMF –, and the timetable and arrangements for changing the composition of the SDR basket.

We are therefore planning to broaden the composition of the SDR basket, notably to include the yuan as soon as China meets the prerequisites in terms of the convertibility of its currency, central bank independence and capital account liberalisation. At the same time, we wish to enhance the role of the SDR, in particular through stepping up SDR financing by international financial institutions. Given that the SDR provides considerable benefits in terms of diversification, it is inappropriate for it to account for less than 4% of international reserves.

In February, the G20 adopted an ambitious but pragmatic roadmap that I will now recall. In addition to the agreement reached on indicators to measure economic imbalances, which is a prerequisite for any attempt to reduce them, we achieved far more than just a consensus on the need to reform.

The G20 reached agreement on three objectives:

- ensure the stability of the financial system;
- promote the orderly transition from a world where a small number of economies, with their currencies, represent the bulk of wealth and trade to a multipolar world where emerging countries and their currencies represent a growing if not predominant share;
- avoid disruptive fluctuations in capital flows, disorderly movements in exchange rates and persistent misalignments of exchange rates.

I would like to stress that even bringing these three objectives to the table constitutes a major step forward. It is not free trade that has shown its limitations during the crisis, but the *laissez-faire* approach.

The next step is for us to reach an agreement, at the forthcoming G20 meeting in Washington, on a list of our imbalance indicators and the way in which they could contribute to economic policy recommendations aimed at rebalancing global growth. We must also examine the initial proposals for reforming the IMS, drawing on preliminary studies by the IMF as well as the World Bank and development banks.

In other words, the Paris G20 meeting laid the foundations for discussions in 2011, which will come to fruition at the summit of Heads of State or Government in Cannes in November. A few days before, together with other Finance Ministers and central bank Governors, we will finalise the proposals for reforming the IMS that we will submit at the summit.

Before that, on 31 March, in Nanjing, a high-level seminar dedicated to the reform of the IMS will provide a forum to freely discuss our views and put a stop to the “currency war” rhetoric in favour of a frank but respectful discussion. As Churchill said, at a White House dinner on 26 June 1954, “*To jaw-jaw is always better than to war-war*”.

Jacques de LAROSIÈRE*Advisor**BNP Paribas*

I will focus on three questions:

- 1| Historically, what conditions have true international monetary systems (IMS) required to function?
- 2| In our current world of inward-looking Nation States, can such conditions be achieved?
- 3| If not, what adjustments can be made?

1 | What were the key components of the gold standard and the Bretton Woods dollar exchange standard?

The gold standard provided stability to the foreign exchange system in the second half of the 19th century and up to the start of World War I in 1914. It played an important role in economic growth. It was based on three principles:

- countries adhered to the gold standard on a voluntary basis. But large countries –whose economic power was relatively balanced– wanted their national currencies to be de facto convertible: this was a key element in their commercial and financial influence;
- the system was self-disciplinary: protracted balance of payment deficits resulted in gold outflows and triggered corrective economic policies;
- no adjustments were possible to this system; currencies were either pegged to gold or they were not. In the latter case, they could neither be a store of value, nor a widely-accepted payment instrument.

The system was far from perfect. Indeed, it depended, for the provision of global liquidity, on gold production. And, above all, it was asymmetric (surplus countries could accumulate gold without sanctions, whereas deficit countries had to make adjustments).

This system, which spanned the “first wave of globalisation”, collapsed at the onset of World War I. Efforts to reinstitute it in the 1920s and 1930s proved futile: mercantilist nationalism and competitive devaluations prevailed.

With Bretton Woods, an indirect gold standard was implemented: the currencies of all countries were pegged to US dollar and the latter could be converted to gold by the United States at a fixed rate.

This system survived while the United States remained a balanced, non-inflationary economic power. But, in the 1960s with the advent of the Vietnam War, the country's financial imbalances created a major dollar confidence crisis.

Fears of gold losses caused President Nixon to sever the dollar's gold link in August 1971.

A world of “floating currencies” –or more or less pegged to the dollar– has prevailed since then.

This modus operandi is not a “system”:

- no common rules have been put in place to reduce or eliminate deficits;
- all countries can let their currencies float or can peg them to another currency.

The result of this is volatility, exchange rate misalignments, uncompetitive conditions, etc.

2 | In today's world, how can we achieve the conditions that allow an IMS to function?

By “today's world” I mean:

- no return to the gold standard, which for many does not appear to be merit-worthy enough to be used as a basis for an agreement;

- a world in which capital movements have grown massively and in which the depth and liquidity of markets are vital to the success of the key currencies;
- a world made up of States wishing to preserve their national interests (or what they believe to be their interests) without accepting external constraints.

For a true IMS to function in such a world, the third component must change.

The word “system” implies that there is at least a minimum acknowledgement of “external forces”. The juxtaposition of national positions cannot create a system.

Member States must therefore consent to coordinate their economic and financial policies in order to achieve a better internal equilibrium, under the surveillance of an international institution endowed with real powers and sanctions.

In my opinion, this would not be unattainable if the countries could be convinced that adopting such discipline was in their own interest. Indeed, in a globalised and interconnected financial world, it is relatively easy to understand that exchange rate volatility and current account imbalances are in no one’s interest.

If such a stance were to prevail, the excellent proposals made in the Palais-Royal Initiative would be applicable. That is to say:

- from the outset, a number of “alarm signals” would be agreed upon (prolonged current account imbalances, excessive accumulation of reserves, etc.);
- the indicators would trigger an operational mechanism of corrective measures to be applied in an intelligent manner in accordance with the proportionality principle;
- if countries do not act on the recommendations arising from this process, sanctions would be applied.

In this respect, I continue to believe that an international treaty (a sort of World Finance Organisation –WFO such as that put forward by the World Trade Organisation –WTO) would be the way to ensure the smooth functioning of the system.

3 | In the absence of such an agreement, certain adjustments will have to be made to the current “non-system”

A number of avenues are worth exploring, and may prove more or less apposite.

- One possibility would consist of enhanced financial facilities. The IMF's resources could be further enhanced. They have already been considerably boosted and made more flexible under the aegis of the G20. The idea would be to enable the IMF –by allowing it to tap the markets– to extend, in the event of a crisis, to countries experiencing a liquidity dry-up (and not solvency problems relating to shortcomings in economic policy) automatic and unlimited credit lines until market conditions returned to normal. The IMF would thus become the lender of last resort that is missing today. It is indeed more judicious to set up a mechanism of this nature with the IMF at the helm than to let liquidity be managed within the bilateral relations of the different central banks.

However, such proposals clearly do not replace the creation of a true IMS. They tackle financing problems and do not address adjustment issues.

- A second possibility would be the extension of the role of Special Drawing Rights –SDRs. I’m not sure that this basket of currencies is a real answer to the problems posed by the existence of a dominant reserve currency, i.e. the dollar. In my opinion, we should avoid using SDRs as a collective guarantee for countries accumulating excessive reserves. Moreover, the potential of SDRs appears limited.
- A last possibility would be to create a “basket of reserve currencies”. The concept –although it would not imply any constraints or fluctuation limits for the currencies in the basket– is very likely to prove unrealistic. If, however, currencies were linked with pre-set fluctuation margins, the mechanism, in order to function, would require a very close central coordination of economic policies as advocated above in point II.

If such a mindset does not prevail, there is a risk that only limited adjustments will be made, reflecting the current system’s shortcomings, rather than a real sea change.

Kiyohiko G. NISHIMURA*Deputy Governor**Bank of Japan*

Since time is short, I will focus on two issues. One is the over-arching issue of how to understand the role and limitations of the *current* international monetary system (IMS). The other is the challenges for central bankers in fulfilling our responsibilities within the current IMS, which is not likely to go away even in the *future* IMS.

I | The role and limitations of the current IMS

First, the current IMS. The central issue confronting the current IMS is how to introduce symmetrical adjustment between external surplus and deficit countries.

The current IMS does not have a built-in mechanism that automatically fosters a balanced adjustment process, especially between reserve currency countries and others. The United States, as the main reserve currency country, has little incentive to reduce its current account deficit, especially because there is a strong inertia to continue its use once a currency is established as the main reserve currency. Surplus emerging economies are expanding their foreign currency reserve holdings, both from a precautionary motivation and from the perspective of maintaining their export competitiveness. To the extent domestic price developments are manageable, there are few constraints to this strategy. Thus, it goes on and imbalances are accumulated. Past attempts to reduce imbalances have been conducted mostly on a bilateral basis, and have, in some cases, turned into quite contentious discussions and negotiations.

Another nagging issue regarding the current IMS is the nature and magnitude of the adjustment that would be required among surplus and deficit countries. It is not necessarily straightforward to distinguish between short-term cyclical investment-savings balance and its longer-term trends, which are strongly influenced by the stage of economic development and demographics. For example, in the 1980s there was substantial pressure on Japan to reduce its trade and current account surplus. However, such

pressure could easily turn into misdirected attempts. In the Japanese case, using macroeconomic policies, especially accommodative fiscal and monetary policy, failed to achieve its intended goal but rather contributed to foster an environment where it became more difficult for authorities to act promptly when there were signs that the economy was overheating. We all know where this ended up.

That is why the G20 mutual assessment process (MAP) on one hand, which aims to bring about strong, sustainable and balanced growth and reduce persistent large imbalances, and the G20 discussions on the IMS on the other hand, such as dealing with global capital flows and global liquidity, are tightly interlinked. Combined, they are expected to work to enhance the long-term stability of the global economy and financial system. What is important here is that the MAP will likely be, at least in its initial phase, a process through which countries better understand each others' policies and the implications of their domestic policies on other countries. This will become the basis for enduring constructive dialogue aimed at reaching an optimal combination of economic policies across multiple countries.

The reform of the IMS will also be a long-term project. A caveat here in this global debate is that there will not be any single model or concept applicable to all countries and situations. A thorough analysis, taking into consideration each country's unique situation, both cyclical and structural aspects, will be required.

In this heterogeneous world, it is of utmost importance to identify the nature and magnitude of imbalances that metamorphose themselves in many ways. However, even the IMF with its immense amount of expertise and resources has struggled to identify unsustainable imbalances over the years. In 1989, in the Article IV discussion for Japan, IMF staff noted that inflation in Japan was not "a matter of concern" and therefore "no compelling reason" could be found to tighten monetary policy. In the 2007 Article IV Staff Report for Ireland, it explained that "economic performance remains impressive" and that "banks have large exposures to the property market, but stress tests suggest that cushions are

adequate to cover a range of shocks". The IMF Staff Report for the United States in 2007 also presented "a soft landing" as the most likely scenario. It also noted that "financial innovation and stability have underpinned US economic success". The limitations of IMF surveillance in the run-up to the current global crisis are detailed in the recently published Independent Evaluation Office's report.¹

I am not trying to single out the IMF for criticism. Nobody, perhaps except for Bill White in this room, was completely successful in recognising beforehand the emergence of bubbles and the huge negative impact after its collapse. I simply wanted to highlight that, when a single approach toward assessing an issue dominates the intellectual climate, it can cloud our judgment in finding emerging risks, which could be seen when approached from a different angle.

2 | The challenges for central bankers in the current and future IMS

Let me move on to the challenges for central bankers in the current IMS, which is not likely to go away even in the future IMS. I would like to raise four aspects.

First, the implementation of macroprudential policy. The recent global financial crisis has brought to the forefront the importance of macroprudential policy. However, we have not been able to nail down its definition nor come up with a comprehensive toolkit. It may take some time before we can make it truly operational. But, we do need to recognise the fact that it took a couple of decades before the importance of price stability was fully appreciated for macroeconomic stability and became embedded in central banks' monetary policy framework worldwide.

Second, dealing with tail risks. Taking preemptive action to avoid the emergence of bubbles which can seriously harm the economy means implementing measures to prevent the build-up of tail risks or

occurrence of low-frequency, high-severity events. The independence and the need for a clear mandate are often emphasised as an important basis for a macroprudential authority. However, I believe that is not enough. A fundamental change is called for in the way economic policy is perceived. A collective understanding within society is necessary that it would be acceptable and appropriate for the macroprudential authority to take away the punch bowl when conditions still seem to be benign. This requires a sea change from the current policy paradigm, where measures are typically introduced *after* specific negative shocks occur.

Third, the cross-border spillover effects of policy actions. Due to continuing globalisation and financial innovation, the interlinkages continue to strengthen among economies and financial markets. In this environment, regardless of whether it is monetary policy or macroprudential policy, policymakers will have to inevitably be cognisant of the cross-border implications of their policy actions. It also needs to be recognised that there will be feedback effects from overseas economies and markets which will influence domestic economic and financial conditions. Forums such as the BIS have played critical roles in enhancing central bank communication and cooperation over the years. Their importance will increase further in such an environment.

Fourth, though I will not go into details here, issues must not be forgotten as well such as strengthening the plumbing of the financial system through, for example, further improvements in foreign exchange settlement, and enhancing the framework for resolving cross-border failures of financial institutions.

Already forty years ago, Sir John R. Hicks predicted that in a globalised financial market "a national central bank will no longer be a true central bank", but will become "single banks in a world-wide system". Whether we like it or not, this is clearly the direction we are heading.

1 Independent Evaluation Office of the International Monetary Fund. The IEO released a report titled the "IMF performance in the run-up to the financial and economic crises: IMF surveillance in 2004-2007" in January 2011.

Janet YELLEN*Vice Chair of the Board of Governors**Federal Reserve System*

Nearly four decades have elapsed since the demise of Bretton Woods, and during that time, the international monetary and financial system has undergone a significant transformation. The changes that have occurred reflect deliberate policy choices by the official sector as well as the organic interactions of investors, institutions, and advancing technologies. Judging by the standards of global economic growth, stable prices, and financial stability, the international monetary and financial system, in its current incarnation, has a decidedly mixed record. Wrenching crises and economic distress, notably including the difficult experience of the past several years, have punctuated periods of solid growth, low inflation, and financial stability. Thus, the subject of today's discussion is vitally important, and I am pleased to contribute my thoughts on steps we can take to improve our international economic order.¹

In evaluating our policy priorities, I find it helpful to distinguish between the international *monetary* system and the international *financial* system.² The international monetary system is the set of rules, conventions, and institutions associated with monetary policy, official capital flows, and exchange rates. It also includes mechanisms to provide official sector support to countries facing funding pressures. The international financial system is much broader, encompassing both private and official participants in global financial markets. I consider this distinction important in thinking about how to reduce the incidence and severity of future crises while preserving a prosperous global economy.

In the case of the recent global financial crisis and recession, I would apportion responsibility to inadequacies in both the monetary and financial systems. With respect to the international monetary system, the basic story is now quite familiar: strong capital outflows from countries with chronic current account surpluses –in part reflecting heavily managed

exchange rates, reserve accumulation, and other shortcomings in the operation of the international monetary system– put downward pressure on real interest rates, in turn boosting asset prices (particularly for housing) and enhancing the availability of credit. These developments contributed significantly to the buildup of financial imbalances, but they were not, on their own, sufficient to have engendered the massive financial crisis we experienced.

Had the additional domestic credit associated with these capital inflows been used effectively, the imbalances need not have led to financial ruin. In the United States and other countries with current account deficits, however, borrowing too often supported excessive spending on housing and consumption, rather than financing productive investment. Most important, declines in underwriting standards, breakdowns in lending oversight by investors and rating agencies, increased use of opaque financial products, and more-general inadequacies in risk management by private financial institutions helped foster a dangerous and unsustainable credit boom. With the financial system evolving rapidly, supervisors and regulators, both in the United States and in many other countries, failed to recognise and address the mounting vulnerabilities. In short, these failures rooted in the financial system interacted with weaknesses in the global monetary system to create stresses and instabilities that eventually triggered –and amplified– the recent financial crisis and subsequent recession.

Other economic crises can similarly be traced to the interaction of weaknesses in the global monetary and financial systems. For example, the Asian financial crisis of the late 1990s was rooted in failures to prudently allocate capital to productive investments –failures of financial intermediation. But these problems were made worse by characteristics of the international monetary system, as heavily managed exchange rates encouraged excessive foreign

¹ These remarks solely reflect my own views and not necessarily those of any other member of the Federal Open Market Committee. I appreciate the assistance of Trevor Reeve of the Board's staff in the preparation of these remarks.

² For a further discussion of this distinction, see Edwin M. Truman (2010), "The International Monetary System and Global Imbalances" (Washington: Peterson Institute for International Economics, January), www.iie.com/publications/papers/truman0110.pdf.

currency borrowing. The collapse of the Thai baht in mid-1997, which marked the beginning of the crisis, resulted in substantial balance sheet losses –particularly for that country's banks– and triggered a widespread reappraisal of risk in the entire region. As investors lost confidence, capital fled these economies, precipitating a severe downturn. As in the recent experience of the United States, better management of domestic financial systems in the emerging Asian economies would have greatly limited, if not prevented, the financial vulnerabilities that ultimately resulted in the crisis, but policies regarding exchange rate regimes and capital flows were also an important part of the story.

The conclusion I draw from these and other financial crises is that we must strengthen both the financial system and the monetary system to create a more stable and less crisis-prone global economy. Improving the international financial system requires better management of national financial sectors and also enhanced international cooperation and coordination, because in a globalised economy with strong, complex, cross-border linkages, even domestic financial stresses can have serious international repercussions.

Countries need to work together to ensure that weaknesses in the global financial system are recognised and addressed. I am encouraged by the progress we have made in strengthening the banking sector through the capital and liquidity requirements of Basel III. We have also made important strides in improving international cooperation and coordination in the supervision of systemically important financial institutions, whose operations and exposures span numerous jurisdictions. That said, we need to continue working toward viable resolution mechanisms for these institutions. Further work is also needed to improve our macroprudential approach to managing vulnerabilities. And we must collaborate to ensure that risky activities do not migrate to the shadows of the financial system in an attempt to circumvent regulatory authorities.

We must also strengthen the international monetary system. We need a system characterised by more open capital accounts, flexible exchange rates, and independent monetary policies. Open capital accounts, supported by appropriate financial supervision and regulation, channel savings to

their most productive uses, thereby enhancing welfare. Exchange rate flexibility improves domestic macroeconomic management, allowing countries to pursue independent monetary policies tailored to their individual needs, and limits unwelcome spillovers to other economies. Such a system can also flexibly adapt to changing economic and financial realities as countries develop, technology progresses, and shocks buffet the global economy.

Our current international monetary system does not yet fulfill these objectives. We now have a hybrid arrangement in which some economies have flexible exchange rates, maintain open capital accounts, and pursue independent monetary policy –a sensible reconciliation of the so-called impossible trinity. But other countries heavily manage their exchange rates, with varying mixes of capital mobility and monetary policy independence.

Inflexible exchange rates in these countries have tended to inhibit adjustment of unsustainable global imbalances in trade and capital flows. Indeed, as I noted, such imbalances appear to have fostered the buildup of vulnerabilities in the run-up to the recent financial crisis. Countries with current account surpluses and restricted capital flows have been able to resist currency appreciation for prolonged periods, even when justified by underlying fundamentals. In principle, adjustment of imbalances could occur if countries permitting relatively limited movements in nominal exchange rates allow their national price levels to adjust over time. But sterilisation operations and other policy tools can, and often have, restrained such adjustment. Meanwhile, countries with current account deficits should take steps to increase national saving, including by putting in place credible plans to reduce their fiscal deficits in the longer run.

The international monetary system, in effect, still suffers from the same asymmetry that bedeviled the Bretton Woods system –namely, a marked differential in the pressures facing surplus and deficit countries to permit automatic adjustments or to undertake policy to reduce persistent global imbalances. Surplus countries can resist adjustment by restricting capital flows and exchange rate movements, but deficit countries are forced to adjust when they run out of international reserves or lose access to external borrowing. This asymmetry has served to inhibit the global rebalancing process, and it could threaten the ongoing recovery: if deficit countries curtail spending

without offsetting spending increases in the surplus countries, aggregate demand would decline, with adverse consequences for the global economy.

Thus, in my view, we need to continue working toward an international monetary system characterised by more-flexible exchange rates, open capital accounts, and independent monetary policies that will facilitate the adjustment of global imbalances. But we must recognise that countries face diverse challenges in such a transition. For countries with undervalued currencies, the adoption of more-flexible exchange rates requires an internal shift in resources across sectors – a transition that takes time. As noted earlier, the recent crisis has also uncovered numerous flaws in the functioning of regulation of our financial system, and these, too, will take time to correct.

Finally, although I have not addressed this concern in my remarks today, the expansion of public-sector deficits and debts in many countries poses very serious medium to long-run risks for both the international monetary and financial systems that will need to be addressed.

Against the background of these longer-term issues, we must also support countries' efforts to address their more immediate challenges. Some advanced economies struggle with weak demand, high unemployment, and disinflation. Many emerging market economies face increasing inflationary pressures and capital inflows amid strong growth. In light of these differing challenges, a cooperative spirit among policymakers is essential to ensure prosperity of the global economy.

CONCLUDING REMARKS

William R. WHITE

Chairman

Economic and Development Review Committee, OECD

I want to thank the Governor of the Bank of France for the invitation to make the concluding remarks at this prestigious conference. I consider it an honor. A number of years ago my BIS colleague, Andrew Crockett, was said to have given a brilliant summing up at a conference at the Bank of Japan. When I asked him how he did it, he joked in replying that “it was easier when you told people what they should have said, rather than what they did actually say”. Today I will do mostly the latter, but I will not be able to resist doing some of the former as well. This is not to say that I think I fully understand what has precipitated the current crisis and where it might be leading us.¹ Rather the words of Keynes, written in 1931, seem to me to be still relevant today.² “We are in a colossal muddle. We have blundered in the operation of a delicate machine, the workings of which we do not understand.” At the least, this conference provides us with the opportunity to rethink some of the things that we used to believe we understood.

My comments today will be linear, in the sense that I will summarise the discussion of the topics in the successive sessions. In contrast, many participants made comments that were actually more relevant to other sessions than their own. This is not a criticism. This attests to the fact that, in the real world, virtually all variables are endogenous. The complexity of the economy, viewed as a system of highly interdependent real and financial variables, also helps explain the current limitations of our understanding.³

Session I: what imbalances after the crisis?

I interpret this question as asking: what is the problem? Logically, an answer to this question must be provided before we move on to suggestions for policy solutions. The question clearly assumes that

“imbalances” of some kind are the essence of the problem, which is in fact a huge analytical leap. Today Lorenzo Bini Smaghi, Kiyohiko G. Nishimura and Kenneth Rogoff have reminded us that the macromodels commonly in use at universities, central banks, and international financial institutions, in fact, contain no imbalances of any significant importance. The question which motivates this session implicitly says those models must change, and change fundamentally.

Accepting that imbalances are an issue, should we worry only about external imbalances (global trade imbalances) or are domestic imbalances also a source of concern. In their comments today, Olivier Blanchard, Jacob A. Frenkel, Nouriel Roubini and Axel Weber all supported the view that external imbalances have their roots in domestic imbalances. Moreover, Pierre-Olivier Gourinchas and Olivier Blanchard also noted that, to the degree external imbalances were a separate issue, the problem had as much to do with disruptive capital flows (leading to gross international exposures) as with trade imbalances (leading to net international exposures). In sum, there are many strands to the problem of imbalances.

Turning to the nature of these domestic imbalances, Jacob A. Frenkel and others noted a wide variety of them. Financial imbalances would include overvalued assets and overleveraged financial institutions. Real imbalances would include abnormally low household saving rates in many countries, and an abnormally high fixed investment rate in China. These in turn would lead to imbalances in the structure of production; that is, industries (like construction in many countries) that would have grown too large relative to underlying demand.

The general impression created throughout the day, supported by a growing academic literature, is that these imbalances have their roots in excessive credit creation, ultimately made possible by a fiat

¹ On this see White (2010b).

² Keynes (J. M.) (1931).

³ Buchanan (2002) provides some very useful insights into the properties which seem to characterise all complex systems. First, the frequency of costly systemic crises varies inversely with (the power of) the costs of the crisis. Second, the inherent importance of the triggering event bears no relationship to the magnitude of the resulting crisis. Third, prediction of the timing of crises is impossible.

monetary system. On the one hand, we have growing support for these propositions from economic history.⁴ There is a rapidly expanding literature on previous economic crises of significant magnitude. On the other hand, we can also have recourse to the history of economic thought.⁵ It is the case that many pre-War business cycle theorists suggested that credit driven forces were ultimately responsible for major economic disturbances.

How do these imbalances create problems? Jacob A. Frenkel put it most succinctly; “they threaten sustainable growth”. Essentially, the credit driven boom turns to bust, with the latter generally being more severe if the financial system itself has been weakened in the process.⁶ Further, there is growing evidence that the level of potential output might also be significantly affected by such crises.⁷ Finally, it is worth noting that the high cost of crises arises from the interactions of real and financial imbalances in both the boom and bust phases. In this current crisis, the tensions first emerged on the financial side and then spread to the real side. Historically, however, the opposite pattern of contagion has been seen equally frequently.⁸ This has a profound implication; namely, that financial stability is important, but is not a sufficient condition to ensure against very bad macroeconomic outcomes.⁹

The final question raised in this session had to do with the current status of the problems posed by imbalances. A few participants seemed relatively optimistic that imbalances were no longer a threat, and that the global growth we are now seeing is sustainable. Others, including Jacob A. Frenkel and Nouriel Roubini, were much more skeptical. Both effectively stated that all of the imbalances observed in 2007, when the crisis began, are still in evidence today. Indeed, there were suggestions that policy reactions to the crisis might well have worsened the underlying problems we still have to face. Nouriel Roubini described Keynesian policies to strengthen demand as being akin to “kicking the can down the road one more time”. It was also noted that our traditional arsenal of macroeconomics weapons

has been largely depleted. Real interest rates are at zero or even negative; central bank balance sheets have expanded enormously; and the sovereign debts of many countries are now so large as to preclude any further stimulus, even if the economy should turn down again.

Session 2: the challenge of surveillance and coordination

This session was directed to the issue of crisis prevention. How can we prevent what we are currently experiencing from happening again? In principle, this is a very different topic from managing a crisis with a view to an effective exit. In practice, however, as Jacob A. Frenkel and Nouriel Roubini both implied, there is a significant link in that some policies designed to moderate a current crisis will raise the expected loss of future crises. For example, encouraging the accumulation of more debt in a downturn (whether private or public) raises both the probability of a future crisis and the costs of a future crisis should it occur.

Much of the session was directed to four sets of problems faced by those charged with crisis prevention. Elsewhere I have called these challenges; the acceptance problem, the identification problem, the will to act problem and the coordination problem. With respect to each, the participants indicated that significant progress had been made but that, nevertheless, much still remained to do.

The *acceptance* problem has to do with the authorities having the right analytical framework. Do they recognise that price stability and financial stability, while desirable, are not sufficient to avert serious macroeconomic problems arising from the evolution of the credit cycle? Put otherwise, is the spectrum of imbalances, used as indicators of prospective problems, wide enough to capture all the emerging dangers. As noted above, some policymakers seem more inclined to accept these propositions about imbalances than do others.

4 See Reinhart and Kenneth Rogoff (2009); also Schularick and Taylor (2009) and the World Economic Outlook (2009).

5 For an overview of this literature, see Laidler (1999), Von Mises and Hayek (the “Austrians”) played a prominent role in such thinking as did Robbins and Dennis Robertson in the United Kingdom.

6 See Reinhart and Reinhart (2010) and the comments by White (2010c).

7 Cerra and Saxena (2008).

8 Reinhart and Kenneth Rogoff (2009) contend that around half of the severe downturns they document began on the real side of the economy. This includes the Great Depression in the United States, which began in 1929 and was then seriously aggravated by the banking sector collapse in 1931.

9 In effect, neither price stability nor financial stability is sufficient to ensure the avoidance of bad macroeconomic outcomes. On the former, see White (2006).

By way of example, consider three of the world's most important central banks.¹⁰ The Federal Reserve conducts monetary policy almost solely on the basis of one pillar; the capacity gap. In this framework, imbalances play no role. In contrast, the Bank of Japan has two “perspectives”. They look, not only at the capacity gap, but also at all the credit driven forces responsible for their last crisis. Finally, the European Central Bank seems to me to sit uneasily between the other two. Their second “pillar” appears to have been evolving, from a monetary indicator of future inflation, into becoming a credit indicator of future imbalances. Where this process of evolution now stands, however, I am not quite sure.

The *identification* problem has to do with the need to establish (to a degree of certainty sufficient to justify a policy response) whether problems are in fact building up. In this regard, a number of commentators indicated that significant progress has been made. Charles Goodhart noted, concerning aspects of Basel III, that they constituted a material advance on Basel II. Olli Rehn gave a frank account of how and why the European official community had failed to see the crisis coming. Importantly, he also laid out clearly how they intended to learn from these experiences in order to improve their surveillance capacities. Finally, by way of progress, I would note that there is a promising and growing body of research into indicators of future economic and financial crises.¹¹

Yet significant problems remain. Lorenzo Bini Smaghi reflected on the fact that stress tests of financial institutions, and also estimates of the fiscal soundness of governments, can both be very misleading. During the boom, such indicators look highly satisfactory but the bust changes perceptions drastically. Think of banks and governments in both Spain and Ireland, pre and post-crisis. Choongsoo Kim also spoke of other problems making it difficult to identify impending problems in the financial sector. Among these he referred to complexity, opacity, constant innovation and the tendency of lenders to hide problems through making new loans to “evergreen” old ones.

Choongsoo Kim also made specific references to the difficulties inherent in identifying systemic vulnerabilities. These arise from interdependencies and shared shocks, both of which are hard to monitor and evaluate.¹² Against this background, it is perhaps not surprising that the measures proposed to deal with systemic risk under Basel III are seriously incomplete to date. Indeed, they look very much like simple “add ons” to what are essentially traditional microeconomic measures.¹³

The *will to act* problem has to do with forbearance, even after potentially dangerous problems have been identified. Indeed Charles Goodhart was so convinced of its importance that he contended that the countercyclical capital requirements associated with Basel III were useless; they would never be triggered by the domestic authorities. Why might the official sector forbear? One domestic reason mentioned by Charles Goodhart is that a tightening of policy during the boom, when many people are profiting greatly, will be hugely unpopular. There are also international reasons for forbearance. Tightening regulation in country A will immediately be attacked as giving an advantage to country B. As for tightening monetary policy, Jose de Gregorio noted that this would raise the real exchange rate and lower competitiveness. At the least, this would be inconvenient for many. Others suggested (discussed further below) that such tightening might in fact be ineffective if it attracted large enough capital inflows from abroad.

Faced with all of these incentives to forbear, Charles Goodhart concluded that macroprudential regulation should be guided by rules as much as by discretion.¹⁴ He also suggested that regulators in the future be required to justify publicly any decision *not* to follow rules agreed beforehand.¹⁵

Finally, effective surveillance faces the *coordination* problem. I will cover the domestic aspects of this in the next section. Here, I will focus only on comments made concerning international coordination. Many participants noted how much progress had been made to date. In his introductory comments, Governor

¹⁰ For a fuller consideration, see White (2010a).

¹¹ See Borio and Dhremann (2009) and Barrell et al. (2010).

¹² Choongsoo Kim made the broader point that economic interdependencies and shocks can also have social and political origins and vice-versa. Consider the effects on oil prices of recent political events in the Middle East and North Africa, and the fact that these events were in part triggered by rising food prices, themselves a product of rising demand. In short, the endogeneities extend well beyond the economic sphere.

¹³ On this see Hellwig (2010).

¹⁴ This is consistent with Brunnermeier et al. (2009).

¹⁵ Suggestions of this sort can also be found in various Annual Reports of the BIS.

Christian Noyer provided an excellent overview of this. As well, Mario Draghi emphasised the important contributions made by the Financial Stability Board (FSB), and Choongsoo Kim underlined the significant achievements of the G20 process. Closely related, Choongsoo Kim also noted how internationally coordinated interest rate cuts and currency swaps had helped limit the damage at the height of the crisis itself.

Nevertheless, many participants stressed how much was left to be done. Mario Draghi laid out the work program which the FSB intended to undertake. Rather more fundamentally, Olivier Blanchard and Martin Wolf pointed out how the lack of a shared analytical model (what is the problem?) could get in the way of coordinated solutions. Mario Draghi, Jacques de Larosière and Choongsoo Kim all noted the unwillingness of countries to forego sovereign objectives in the absence of a clear and present crisis. Finally Franklin Allen stressed the unwillingness of the advanced countries to restructure the International Financial Architecture to reflect adequately the increased economic power of newly emerging market economies. This impeded international cooperation because many emerging countries do not trust institutions, like the International Monetary Fund (IMF), which they felt to be directed by others.

Session 3: the role of central banks and lessons learned from the crisis

Deciding what central banks should do to help prevent crises depends on what one believes is the underlying problem to be confronted. To use a distinction made by Janet Yellen,¹⁶ is it a problem with “monetary” roots or with “financial” roots or both? Put another way, are crises likely to be endemic in the monetary system we have, or are they primarily due to a failure of regulation? If the former, the problem is a macroeconomic one touching both the financial system and the real economy. Evidently, to the extent this is true, central banks will have a more fundamental role to play.

An important question raised was whether central banks should alter policy rates to “lean against the wind” of credit growth when it was judged to be excessive? Jean-Pierre Landau, Charles Goodhart and Athanasios Orphanides all seemed to answer no. In his presentation, Olivier Jeanne even referred to this conclusion as being “part of the post crisis consensus”. Rather, these participants all seem to give priority to the use of macroprudential instruments in such circumstances.

I have questioned such conclusions elsewhere¹⁷ and would do so again today. The basic argument from theory has been presented just above. The argument from practice is that macroprudential instruments to curb credit excesses, while certainly useful, will eventually prove insufficient if the profit incentive for avoidance is big enough.¹⁸ Probably, use of both monetary and macroprudential instruments will be required in the end. However, in what order and in what relative degree, evidently remain subjects to be debated.

Lorenzo Bini Smaghi and Athanasios Orphanides raised another important issue; how should central banks respond to supply side shocks.¹⁹ This is closely related to the question of whether “price stability is enough” to guide the conduct of central banks. I argued at the last Bank of France seminar²⁰ that the low inflation observed in advanced market economies (AMEs) prior to 2007 was in large part due to strong productivity growth in previously state-managed economies. In effect these developments were acting to produce a “good” deflation rather than an “ugly” one.²¹ Nevertheless, central banks around the world resisted these price trends through unusually easy monetary policies, thus contributing materially to the problem of imbalances which still haunts us. There is an early literature on this which deserves much more attention than it has received.²²

A final issue was the role that should be assigned to central banks in the activation and management of macroprudential instruments. Most commentators

¹⁶ Of course, this distinction has deep roots in the academic literature. See Padoa-Schioppa (2010).

¹⁷ White (2009).

¹⁸ If, in Wicksell's terms, the gap between the natural rate of interest and the financial rate is big enough, then both macroprudential instruments and capital controls will suffer from significant leakages.

¹⁹ The specific shock referred to by Lorenzo Bini Smaghi was a decline in the level of potential in advanced market economies (AMEs), somehow fostered by faster growth in the emerging market economies (EMEs). He then went on to conclude that this could provide a justification for tighter monetary policies in AMEs than otherwise.

²⁰ White (2008).

²¹ See Borio and Filardo (2004).

²² Selgin (1999) surveys this literature. See also Beckworth (2008). Haberler (1986) contends that this was the fundamental insight that allowed Hayek, almost alone, to predict the Great Depression in the United States.

seem to feel central banks should have an important role, though for different reasons. Jean-Pierre Landau noticed that monetary instruments and macroprudential instruments are not independent in that both will affect spending. Thus, some cooperation (or even coordination) in use will be required. Athanasios Orphanides agreed, suggesting that central bankers have more of a macroeconomic orientation than regulators. Moreover, they currently have a significant degree of instrument independence from political influence. This will help in dealing with the “will to act” problem.²³ Olivier Jeanne, however, made a counterargument. He worried that central banks might still be prone to “capture”, not by government, but by the financial sector.

Session 4: towards which international monetary system?

Martin Wolf (the moderator of the session) pointed out that the International Monetary System (IMS) we have is wildly different from the one favored by the consensus after the fall of Bretton Woods. What we were supposed to get was floating exchange rates, domestic monetary policy anchored on some nominal target, and essentially no role for foreign exchange reserves. What we got instead was “fear of floating”, monetary policies seriously circumscribed by international considerations, and an unprecedented accumulation of foreign exchange reserves.

These extraordinary divergences would, in themselves, attest to the importance of the topic of this Session. Moreover, as a complementary justification, there was the recurrent suggestion throughout the day that the external and domestic imbalances referred to above could not have grown so large had the IMS imposed more discipline on both debtors and creditors. Franklin Allen and Pierre-Olivier Gourinchas perhaps put the most emphasis on this international dimension, but Jacob A. Frenkel, Christian Noyer, Axel Weber and Janet Yellen also saw it as an important contributor in the buildup to the crisis.

To be more specific about the process, I would contend that investment was very weak in the AMEs in the two decades preceding the crisis.²⁴ Moreover, even

as aggregate demand weakened, globalisation was leading to an effective increase in global supply. Central banks in the AMEs responded with very easy monetary policies (not least the Federal Reserve). Confronted with upward pressure on their exchange rates, many emerging market economies (EMEs) (not least China) responded with equally easy monetary policies and massive exchange rate intervention. With the reserves subsequently reinvested in AMEs, there was a truly global expansion in credit –with all of the side effects noted about.

As in earlier sessions, the discussion focused less on how to extricate ourselves from current difficulties than on reform of the IMS looking forward.²⁵ In this regard, a number of participants noted two awkward facts that any significant reform would have to take into account.

The first awkward fact, alluded to by both Jacques de Larosière and Lorenzo Bini Smaghi, is that uncovered interest parity (UIP) does not hold except over very long time periods. This has a number of important implications, noted in particular by Jose de Gregorio and Xiaolian Hu. International capital flows cannot be thought of as necessarily welfare enhancing because they can lead to costly booms and busts. Moreover, the severity of such crises is likely to be greatest in EMEs. Further, floating exchange rates in such circumstances are likely to become uncomfortably volatile. Finally, monetary tightening might in some cases be counter-productive if capital inflows lead to an easing of credit conditions. In response to such a market failure, Michel Camdessus, Jose de Gregorio, Xiaolian Hu and Jacob A. Frenkel all asked whether this might provide some justification for the use of capital controls. If so, Michel Camdessus added that we also needed internationally agreed criteria for when capital controls could be applied.

The second awkward fact was referred to by Jacob A. Frenkel, Pierre-Olivier Gourinchas, Olivier Jeanne and Nouriel Roubini; the time for reform might be running out. While the US dollar had retained its safe haven status throughout the crisis, concerns were increasing as to its future status. The United States had uncontained levels of deficits and debt, at all levels of government, and the Federal

²³ Paul Volker has made this point as well. See Volker (2011).

²⁴ For a fuller analysis, see White (2008).

²⁵ France will chair the G20 in 2011 and the French government has indicated it will pursue this theme vigorously.

Reserve was also buying an unprecedented proportion of their sovereign debt. Olivier Jeanne raised the possibility of an emerging “peso” problem and the associated possibility of a sudden, sharp increase in risk premia. He said he knew of no historical example where a central bank had forced its government to default by refusing to buy its bonds.

What positive suggestions for reform could be made? Franklin Allen, who emphasised the role of international factors in the current crisis, suggested a variety of measures to help convince countries that they need not build up high levels of foreign exchange reserves for precautionary reasons. Not least, he supported an international safety net, based on the IMF. Somewhat surprisingly, Choongsoo Kim questioned the approach by noting that many countries had accumulated reserves for competitive rather than for precautionary reasons.

Xiaolian Hu raised the question of the appropriate role to be played by the issuers of the international reserve currency. She felt the United States must be appropriately mindful of the international implications of its domestic policies. If the United States failed to do so, it would be more appropriate to replace the dollar with a new currency (like the special drawing right –SDR) under the governance of an international rather than a domestic body. In response, Martin Wolf, Jacques de Larosière, Kiyohiko G. Nishimura and Janet Yellen all noted that the blame for imbalances did not lie totally with the debtors. Both the Gold Standard and Bretton Woods had failed, in large

part because those amassing reserves had failed to respond appropriately.

Against this background, Minister Christine Lagarde then made a number of practical suggestions as to how the functioning of the IMS might be improved, rather than altered radically. The aim of the G20, under Chairman Sarkozy, should be to “turn a jungle into a park”. While there was no time for any detailed analysis of her proposals, there seemed to be general agreement with the proposition made initially by Martin Wolf in his opening statement. Namely, that the core requirement is to impose some form of international discipline on both the United States as debtor (exempted for now by its reserve currency status) and on China and others (exempted for now by being creditors).

Both Olivier Blanchard and Jacques de Larosière suggested greater efforts to convince creditors that international cooperation was in their own best interests over the longer term. Olivier Blanchard focused on domestic reforms (reducing “distortions”) that would not only ease international tensions but also raise domestic living standards. Jacques de Larosière (and William R. White from the floor) made the traditional and most powerful argument for cooperation; namely, when debtors cannot pay, creditors don't get paid. Jean-Pierre Trichet expressed the view that this logic would eventually prevail. However, others seem skeptical that it would do so in time to prevent a further stage of the crisis from unfolding. In the corridors, fears of protectionism and of a possible dollar crisis seemed equally shared.

While most of the conference had to do with future reforms, there were many passing references to how we might unwind existing imbalances in an orderly way. Most of these suggestions focused on international trade imbalances. The recommendations made were quite traditional; namely, deficit countries must increase saving rates while creditor countries must decrease them. Movements in nominal exchange rates would then also be desirable to provide incentives for appropriate resource reallocations between the tradable and non-tradable sectors. Indeed, giving that many creditor EMEs are already producing at full capacity, lowering their national saving rate without nominal exchange rate appreciation would seem an invitation to increased inflation. A number of commentators also noted the important role that financial reforms could play in supporting global rebalancing.

As already noted in the discussion of Sessions 2 and 3, a number of participants feared another significant downturn going forward. Not only did underlying imbalances remain large, but there were also good reasons to doubt the effectiveness of traditional stimulative macroeconomic policies. This raised the issue of what else might be done to facilitate exit from the crisis? Kenneth Rogoff had broached this issue early in the day by noting that there had been an excessive use of debt instruments in the lead up to the crisis. If many of those who issued debt, had instead issued equities (or some other instrument with a state-contingent payout), then there would have been a more generalised sharing of risks. This would have helped avoid the disruptive effects of bankruptcy, in the face of unbearable debt service commitments, that we now have to deal with.

Kenneth Rogoff's suggestion leads naturally to the next question. Given that there has been an excessive reliance on debt, should it now be made easier to reduce existing debt levels than is currently the case. Jacob A. Frenkel, Olivier Jeanne, Kenneth Rogoff and Nouriel Roubini all felt this issue should now be squarely on the table. Households that cannot pay imply still more banks that cannot pay. And more banks that cannot pay imply still more sovereigns that cannot pay. There seemed general support for the view that we need to find better ways to reduce excessive debt burdens while preserving as much value as possible.

Finally, it was noted that debt service burdens can also be alleviated by a faster rate of economic growth. Over the years, the OECD has suggested a wide variety of structural reforms²⁶ that could make a material contribution to increasing factor inputs and also the rate of growth of total factor productivity. With time, new opportunities for profit provided by such reforms would also lead to higher aggregate demand as both investment and labour incomes rose. Evidently, in the current environment of household and financial sector deleveraging, the benefits of structural reform will emerge only slowly. This should not, however, dissuade governments from taking the beneficial actions required.

²⁶ See in particular the regular publication "Going for growth" OECD (2010).

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