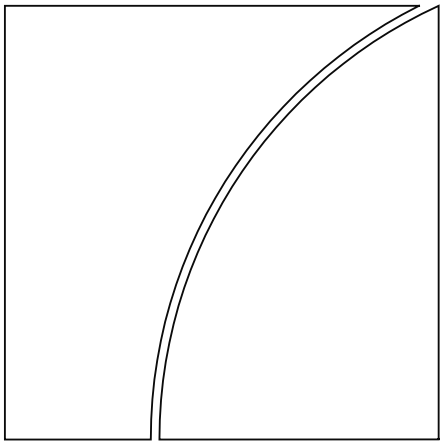

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Sovereign risk: a world without risk-free assets?

Proceedings of a seminar on sovereign risk including contributions by central bank governors and other policy-makers, market practitioners and academics Basel, 8–9 January 2013

Monetary and Economic Department

July 2013

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Academic:	**William Perraudin**, Imperial College of London and Risk Control Ltd
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List of participants

BIS Seminar on Sovereign risk, 8–9 January 2013
Chaired by Stephen Cecchetti

Bank of Algeria	Ammar Hiouani, Deputy Governor
Central Bank of Argentina	Sebastian Soler, Advisor to the Governor
Reserve Bank of Australia	Bob W Rankin, Chief Representative in Europe, London
Central Bank of the Republic of Austria	Ernest Gnan, Counsel to the Board, Head Economic Analysis Division
National Bank of Belgium	Thierry Timmermans, Assistant Director
Central Bank of Brazil	Carlos Hamilton Vasconcelos Araújo, Deputy Governor, Economic Policy - Dipec
Bulgarian National Bank	Kalin Hristov, Deputy Governor
Bank of Canada	Philippe Muller, Assistant Director
Danmarks Nationalbank	Per Callesen, Governor, Member of the Board of Governors
Bank of Estonia	Ardo Hansson, Governor
European Central Bank	Antonio Sáinz de Vicuña, Director General
Bank of France	Anne Le Lorier, First Deputy Governor
	Denis Beau, Director General
Deutsche Bundesbank	Karlheinz Bischofberger, Head
Bank of Greece	Efthymios Gatzonas, Director
Hong Kong Monetary Authority	Peter S T Pang, Deputy Chief Executive
Central Bank of Iceland	Már Guðmundsson, Governor
Reserve Bank of India	Rama Gandhi, Executive Director
The Central Bank of Ireland	Patrick Honohan, Governor
Bank of Israel	Karnit Flug, Deputy Governor
Bank of Italy	Salvatore Rossi, Deputy Director General, Member of the Governing Board
Bank of Japan	Hiroshi Nakaso, Assistant Governor
Bank of Lithuania	Darius Petrauskas, Deputy Chairman of the Board
Central Bank of Luxembourg	Paul Mercier, Advisor to the Executive Board
Bank of Mexico	Pascual O'Dogherty, General Director
Netherlands Bank	Marc Hendrik Pröpper, Head of Risk Management
Central Bank of Norway	Oystein Olsen, Governor

Central Reserve Bank of Peru	Julio Velarde, Governor
Bank of Portugal	Carlos da Silva Costa, Governor
Central Bank of the Russian Federation	Alexey V Ulyukaev, First Deputy Chairman
Saudi Arabian Monetary Agency	Fahad Almubarak, Governor
	Hussain Abusaaq, Economist
Monetary Authority of Singapore	Larry Keh, Deputy Director
National Bank of Slovakia	František Szulényi, Director General
Bank of Slovenia	Marko Kranjec, Governor
South African Reserve Bank	Johan van den Heever, Deputy Chief Economist
Bank of Spain	Jesús Saurina, Director
Sveriges Riksbank	Kerstin af Jochnick, First Deputy Governor
Swiss National Bank	Jean-Pierre Danthine, Vice-Chairman of the Governing Board
Bank of Thailand	Supatpong Navaratana, Division Head
Central Bank of the Republic of Turkey	Tugrul Gürgür, Executive Director
Central Bank of the United Arab Emirates	Sultan Bin Nasser Al-Suwaidi, Governor
Bank of England	Robert Jenkins, External Member of Financial Policy Committee / Adjunct Professor, Finance at London Business School
Federal Reserve Bank of New York	William C Dudley, President, Member of the Board of the BIS
Inter-American Development Bank (IADB)	Andrew Powell, Principal Advisor
International Monetary Fund (IMF)	John Kiff, Senior Financial Sector Expert
The Institute of International Finance	Hung Q Tran, First Deputy Managing Director
Allianz AG	Thomas C Wilson, Chief Risk Officer
Unifortune Asset Management SGR Spa	Alberto Giovannini, CEO, Unifortune and Chairman, Market Treasury Securities
Risk Control Limited	William Perraudin, Adjunct Professor of Imperial College London and Director, Risk Control Ltd
Blackrock	Peter Fisher, Senior Managing Director and Head of Fixed Income Portfolio Management
Cleary Gottlieb Steen & Hamilton LLP	Lee C Buchheit, Partner / Visiting Professor
Moody's Corporation	Richard Cantor, Chief Risk Officer and Chief Credit Officer

Ministry of Finance of the Russian Federation	Sergey A Storchak, Deputy Minister of Finance
Università Commerciale Luigi Bocconi	Donato Masciandaro, Professor
Graduate Institute of International and Development Studies	Marc Flandreau, Professor of International History and Politics, University of Geneva
Queen Mary School of Law	Rodrigo Olivares-Caminal, Reader in Banking and Finance
Princeton University	Harold James, Professor of History and International Affairs
Bank for International Settlements	Jaime Caruana
	Hervé Hannoun
	Peter Dittus
	Stephen Cecchetti
	Günter Pleines
	Diego Devos
	Josef Tosovsky
	Claudio Borio
	Philip Turner
	Stefan Avdjiev
	Jacob Bjorheim
	Benjamin Cohen
	Udaibir Das
	Dietrich Domanski
	Ingo Fender
	Liam Flynn
	Corrinne Ho
	Robert McCauley
	Louis de Montpellier
	Pierre-François Panchaud
	Srichander Ramaswamy
	Jean-François Rigaudy
	Nikola Tarashev
	Jens Ulrich
	Christian Upper
Financial Stability Board	Svein Andresen
BIS Representative Office for Asia and the Pacific	Eli Remolona
BIS Representative Office for the Americas	José Luis Escriva

Speakers' biographies

Buchheit, Lee

Partner, Cleary Gottlieb Steen & Hamilton LLP

Lee Buchheit is a senior partner in the Sovereign Practice Group at Cleary Gottlieb Steen & Hamilton LLP, based in New York. He regularly advises sovereign borrowers on their debt management. Mr Buchheit has worked on the debt restructurings of more than 20 countries including, most recently, Greece. Mr Buchheit served in 2010 as the chief negotiator for the Government of Iceland in its dispute with the United Kingdom and the Netherlands over the Icesave issue.

Cantor, Richard

Chief Risk Officer and Chief Credit Officer, Moody's

Richard Cantor serves as Chief Credit Officer for Moody's Investors Service and Chief Risk Officer for Moody's Corporation. As the Chief Credit Officer, Mr Cantor heads the Credit Policy Group and chairs the Credit Policy Committee, which are responsible for the review and approval of rating methodologies. The Credit Policy Group also works with the rating groups to promote consistent rating practices and to improve rating quality. It conducts default research, verifies and validates rating models, develops market-implied ratings, and publishes rating performance reports. Prior to joining Moody's in 1997, Mr Cantor worked at the Federal Reserve Bank of New York, where he held a variety of positions in the research group and was staff director at the discount window. Prior to joining the Fed, he taught economics at the UCLA and Ohio State University. Mr Cantor also taught, on an adjunct basis, at the business schools of NYU and Columbia University. Mr Cantor received a BA from Tufts University and a PhD in economics from The Johns Hopkins University.

Caruana, Jaime

General Manager, Bank for International Settlements

Jaime Caruana became General Manager of the BIS in April 2009. As the Bank's chief executive officer, he carries out the policy of the Board of Directors and is responsible to it for the Bank's management. Previously, Mr Caruana was Financial Counsellor to the IMF's Managing Director and headed the IMF's Monetary and Capital Markets Department. From 2000 to 2006, Mr Caruana was Governor of the Bank of Spain, and served on the ECB's Governing Council. He chaired the Basel Committee on Banking Supervision from 2003 to 2006 and has been a member of the Financial Stability Forum/Board since 2003. Prior to joining the Bank of Spain, Mr Caruana served as Director General of the Spanish Treasury and worked in the private sector.

Danthine, Jean-Pierre

Vice-Chairman of the Governing Board, Swiss National Bank

Since April 2012, Jean-Pierre Danthine has been Vice-Chairman of the Swiss National Bank, with responsibility for financial stability, cash, finance and risk. Previously he was a Governing Board member (appointed in 2010), with responsibility for financial markets, banking operations and information technology. From 1980 to 2009, he was Professor of Macroeconomics and Finance at the University of Lausanne, Switzerland. He taught at Columbia University, and was visiting professor at the Graduate Center of the City University of New York, UCLA, Université Laval, Québec, as well as at the universities of Aix-Marseille, Toulon and Dijon. From 2006, the year of its foundation, until 2009, Jean-Pierre Danthine was Managing Director of the Swiss Finance Institute. He earned a Master's Degree in Economics at the Université catholique de Louvain, Belgium and a PhD in Economics at the Carnegie Mellon University in Pittsburgh, Pennsylvania. He holds dual Belgian/Swiss citizenship.

Devos, Diego

Legal Counsel, Bank for International Settlements

Diego Devos has been General Counsel of the BIS since October 2009. As Head of the Legal Service, Mr Devos serves as a member of the Bank's Executive Committee. Before joining the BIS in 2006, Mr Devos was Deputy General Counsel of Euroclear Bank in Brussels. Previously, he was Legal Advisor in the legal department of the National Bank of Belgium and a barrister at the Brussels bar. He has been a part-time lecturer at the University of Brussels and has published various articles and reports on contract law, banking and financial law.

Dudley, William C

President, Federal Reserve Bank of New York

William C Dudley became the 10th President and Chief Executive Officer of the Federal Reserve Bank of New York in January 2009. He serves as the Vice Chairman of the Federal Open Market Committee. Previously, Mr Dudley managed the Federal Reserve System Open Market Account as Executive Vice President of the New York Fed's Markets Group. After chairing the Basel-based Committee on Payment and Settlement Systems from 2009, Mr Dudley became chairman of the Committee on the Global Financial System in 2012. Before 2007, Mr Dudley was a partner at Goldman Sachs, serving as its chief US economist for a decade. Before that, he was a vice president at Morgan Guaranty and an economist at the Federal Reserve Board from 1981 to 1983. Mr Dudley received his doctorate in economics from the UC Berkeley in 1982 and a bachelor's degree from New College of Florida in 1974.

Fisher, Peter R

Senior Managing Director and Head of Fixed Income, BlackRock, Inc

Mr Fisher heads BlackRock's Fixed Income Portfolio Management Group. From 2005 to 2007 he served as Chairman of BlackRock Asia responsible for the firm's businesses in East Asia. Mr Fisher served as Under Secretary of the US Treasury for Domestic Finance from 2001 to 2003. Previously, Mr Fisher spent 15 years at the Federal Reserve Bank of New York, concluding his service there as Executive Vice President and Manager of the System Open Market Account for the Federal Open Market Committee. Mr Fisher also serves as non-executive director of the UK's Financial Services Authority, and as a member of the Strategic Advisory Committee at Agence France Trésor, the FDIC's Advisory Committee on Systemic Resolution, the IMF's Financial Institutions Consultative Group and the Google Investment Advisory Committee. Mr Fisher earned a BA degree in history from Harvard College in 1980 and a JD degree from Harvard Law School in 1985.

Flandreau, Marc

Professor of International History and Politics, University of Geneva

Professor of History at the Graduate Institute of International and Development Studies, University of Geneva since 2008, Marc Flandreau is an expert in the history of the international monetary and financial system. He previously held teaching and research positions at Sciences Po (Paris) and the National Centre for Scientific Research (CNRS, France), of which he is an award winner. He has also been a visiting professor at Stanford University and UC Berkeley. He is currently a research fellow at the Centre for Economic Policy Research in London. He is co-author of "To err is human: rating agencies and the interwar foreign government debt crisis", *BIS Working Papers*, no 335, and a 2004 OECD monograph, *The making of global finance, 1880–1913,* both on sovereign risk analysis. He is currently preparing a book on the long-run evolution of the international financial architecture.

Giovannini, Alberto

Chief Executive Officer, Unifortune SGR and Chairman, Market Treasury Securities

Alberto Giovannini is a partner of Unifortune SGR, an asset management company based in Milan, Italy, and the chairman of MTS, the market for government bonds. He has also been chairman of the EU Commission's advisory group on financial markets, the Giovannini Group. Mr Giovannini started his professional career as an academic. He was the Jerome A Chazen Professor of International Business at Columbia University, where he taught and conducted research from 1983 to 1995. He has held a number of positions in the public and private sector, including Co-Chairman of the Council of Experts at the Ministry of the Treasury in Rome (in charge of the Republic of Italy's international debt programme), Senior Strategist at Long-Term Capital Management and Deputy General Manager of Banca di Roma. Mr Giovannini graduated from the University of Bologna, and holds a PhD in Economics from the Massachusetts Institute of Technology.

Guðmundsson, Már

Governor, Central Bank of Iceland

Már Guðmundsson was appointed to his current position as Governor of the Central Bank of Iceland in August 2009 for a term of five years. He received a BA in economics from the University of Essex and studied economics and mathematics at the University of Gothenburg. He has an MPhil degree in economics from Cambridge University. From 2004 until his appointment as Governor, he served as Deputy Head of the Monetary and Economic Department of the Bank for International Settlements. Prior to that, Governor Guðmundsson was employed by the Central Bank of Iceland for some two decades, including more than 10 years as Chief Economist. He has written extensively on monetary and exchange rate affairs.

Hamilton Araújo, Carlos

Deputy Governor, Central Bank of Brazil

Carlos Hamilton Vasconcelos Araújo has served as Deputy Governor for Economic Policy at the Central Bank of Brazil since 2010. Previously, he was Deputy Governor for International Affairs, and has held various positions at the Central Bank of Brazil including Head of the Research Department and Chief of the Open Market Trade Desk. He was also a lecturer in macroeconomics at the Getulio Vargas Foundation Graduate School of Economics and at the Brazilian Institute of Capital Markets. He holds a PhD in Economics and an MsC in Economics from the Getulio Vargas Foundation Graduate School of Economics and an undergraduate degree in engineering.

Honohan, Patrick

Governor, Central Bank of Ireland

Patrick Honohan was appointed in September 2009 as the 10th Governor of the Central Bank of Ireland. Previously, he was Professor of International Financial Economics and Development at Trinity College Dublin from 2007. Prior to this, he spent almost a decade at the World Bank, where he was Senior Advisor on financial sector policy. He was Research Professor with the Economic and Social Research Institute, Dublin (1990–98), Economic Advisor to Taoiseach Garret Fitzgerald (1981–82 and 1984–86) and he spent several years as an economist at the Central Bank of Ireland (1976–81 and 1984–86), and at the International Monetary Fund (1971–73). A graduate of University College Dublin, he received his PhD in Economics from the London School of Economics in 1978. He has taught economics at the LSE and at the University of California-San Diego, the Australian National University and University College Dublin, as well as at Trinity College.

James, Harold

Professor of History and International Affairs, Princeton University

Harold James is the Claude and Lore Kelly Professor in European Studies and Professor of History and International Affairs at the Woodrow Wilson School, Princeton University, where he has taught since 1986. His publications include: *The Reichsbank and public finance in Germany 1924–1933* (1985); *Deutsche Bank 1870–1995* (1995); *International monetary cooperation since Bretton Woods* (1996); *The end of globalization: Lessons from the Great Depression* (2001); *Europe reborn: A history 1914–2000* (2003); *The Roman predicament: How the rules of international order create the politics of empire* (2006); *The creation and destruction of value: the globalization cycle* (2009); *Making the European Monetary Union: The role of the Committee of Central Bank Governors and the origins of the European Central Bank* (2012). He was educated at Cambridge University, where he obtained his PhD in Economic History in 1982.

Jenkins, Robert

External Member of the Financial Policy Committee, Bank of England and Adjunct Professor, Finance at London Business School

Robert Jenkins teaches investment management at London Business School, and is a member of the Bank of England's Financial Policy Committee. He spent 16 years running Citibank trading rooms followed by 18 years running asset management organisations. On the buy side, he served as CIO and Head of the Asset Management business at Credit Suisse in Japan and later as COO for Credit Suisse Asset Management in the UK and Central Europe. From 1997 to 2009, Mr Jenkins served as Chief Executive and then as Chairman at F&C Asset Management. From 2009 until 2011, he was CEO of Combinatorics Capital, a global macro fund. Mr Jenkins chaired the UK Investment Management Association, was a member of the Takeover Panel and co-chaired, with the Chancellor, a group on the future of the UK asset management industry. He holds a master's degree from the Johns Hopkins School of Advanced International Studies.

Kiff, John

Senior Financial Sector Expert, International Monetary Fund

Since 2005, John Kiff has been a Senior Financial Sector Expert at the International Monetary Fund (IMF). Prior to that, Mr Kiff worked at the Bank of Canada for 25 years, where he spent most of his time managing the funding and investment of the government's foreign exchange reserves. At the IMF, he is part of the team that produces the semiannual *Global Financial Stability Report* (GFSR). In that regard, he led the team that produced the chapter on sovereign credit ratings in the October 2010 edition, and co-wrote two working papers on the topic. In addition, he has been working on policy issues raised by OTC derivatives and securitisation re-regulation, and longevity risk transfer markets.

Masciandaro, Donato

Full Professor of Economics, Bocconi University

Donato Masciandaro is Full Professor of Economics (Chair in Economics of Financial Regulation) at Bocconi University, Milan, and Director of the Paolo Baffi Centre on Central Banking and Financial Regulation. He has been Dean of the same university's Department of Economics, as well as visiting scholar at the London School of Economics, the International Monetary Fund, the Bank of Spain and the Netherlands Bank, and adviser to the United Nations, the Inter-American Development Bank, and the World Bank. He is a member of the Management Board and Honorary Treasurer of SUERF. He is Associated Editor of the *Journal of Financial Stability*.

His work has covered three main topics: central banking; financial regulation and supervision; and illegal financial markets. He is the author of "What if credit rating agencies were downgraded? Ratings, sovereign debt and financial market volatility", published as a Paolo Baffi Centre research paper. He has been a scientific consultant of the Republic of Italy General Attorney (Trani) on credit rating agencies.

Nakaso, Hiroshi

Assistant Governor, Bank of Japan

Mr Nakaso has served as Executive Director at the Bank of Japan since 2008. During his 34-year career there he has worked as Director-General of the Financial Markets Department and Associate Director in the International Department. For seven years in the 1990s, he was assigned to what is now the Financial and Payment System Office, where he dealt with Japan's financial crisis. From 1990 to 1993, he represented the Bank of Japan on a sub-group of the Basel Committee on Banking Supervision and also what is now the Committee on the Global Financial System. Earlier assignments include the Policy Planning Department and the London Representative Office. In 2000–01, while visiting the BIS, he wrote a classic BIS Paper on *The financial crisis in Japan during the 1990s*. Since June 2006, he has served as Chairman of the Basel-based Markets Committee. He graduated from the University of Tokyo.

Olivares-Caminal, Rodrigo

Reader in Banking and Finance, University of London

Dr Rodrigo Olivares-Caminal is a Reader in Banking and Finance at the Centre for Commercial Law Studies at Queen Mary, University of London. Before that, he was a Senior Lecturer in Financial Law and the Academic Director at the Centre for Financial and Management Studies, University of London and the School of Law, University of Warwick. He taught in undergraduate and postgraduate courses in various law and business schools in the United Kingdom, Spain, Greece and Argentina. He has acted as a sovereign debt expert for the United Nations Conference on Trade and Development and as a consultant to multilateral institutions in Washington and Europe, central banks and ministries of finance. He specialises in international finance and insolvency law. He is the author or editor of seven books and has published widely.

Olsen, Øystein

Governor, Central Bank of Norway

Øystein Olsen has served as Governor of the Central Bank of Norway since 2011. From 2005 to 2010 he was Director General of Statistics Norway. Between 1999 and 2005 he was Director General, Economic Policy Department at the Norwegian Ministry of Finance after having served as the same department's Deputy Director General in 1994–95. He spent 18 years in Research Department at Statistics Norway, heading it in 1996–99. He spent 1990–91 at the ECON Centre for Economic Analysis and 1985–86 at the Lawrence Berkeley Laboratory at the University of California, Berkeley. He holds a postgraduate degree in economics from the University of Oslo.

Perraudin, William

Adjunct Professor of Imperial College London and Director, Risk Control Ltd

William Perraudin is Adjunct Professor of Finance at Imperial College London and a director of Risk Control Ltd. In his research, he specialises in the fields of risk and pricing of debt instruments. As an expert in the field of risk as applied to financial regulation, Perraudin has been a special advisor to the Bank of England. He headed the finance groups in Imperial College Business School and at Birkbeck College, University of London, and taught at Cambridge University. He has acted as associate editor for *Quantitative Finance*, the *Journal of Banking and Finance* and the *Journal of Credit Risk*. Professor Perraudin holds a master's degree in applied mathematics and a PhD in economics, both from Harvard University.

Powell, Andrew

Principal Advisor, Inter-American Development Bank

Andrew Powell has been the Principal Advisor in the Research Department of the Inter-American Development Bank (IDB) since November 2010. He holds a BA, MPhil and DPhil from Oxford. He was Prize Research Fellow at Nuffield College, Oxford and Associate Professor at the universities of London and Warwick. He was Chief Economist of the Central Bank of Argentina from June 1996 to April 2001 and subsequently a professor at the Universidad Torcuato Di Tella, Buenos Aires until 2005 when he joined the IDB. He has published numerous academic papers in leading economic journals on commodity markets, risk management, the role of multilaterals, regulation, banking and international finance. He coordinated the Latin American and Caribbean Macroeconomic Report published by the IDB in March 2012. Current areas of interest include reforms, capital flows, ratings, financial innovation, monetary and prudential policies and debt restructuring.

Sainz de Vicuña, Antonio

Director General, Legal Services, European Central Bank

Antonio Sáinz de Vicuña has been General Counsel of the ECB since 1998. He chairs the Legal Committee of the Eurosystem. He is a graduate in law and in economic sciences of the Universidad Complutense de Madrid, and has a Master's in International Law from Cambridge University. He entered the government legal service in 1974, and subsequently served as legal counsel in the ministries of finance, economy and foreign affairs, where he became Chief Legal Adviser in 1985. After five years in commercial banking, in 1994 he joined the European Monetary Institute as General Counsel. He has published widely on community, international and banking law.

Storchak, Sergey

Deputy Minister of Finance of the Russian Federation, Ministry of Finance

Sergey Storchak has served as a Deputy Finance Minister of the Russian Federation since 2005. Before that he was Director of Foreign Finance Relations at the Ministry of Finance's State Debt and State Financial Assets Department. From 1998 until 2004 he served as Deputy Chairman of the USSR's Bank for Foreign Economic Affairs. Between 1994 and 1998 he was Deputy Director of the Foreign Credit and External Debt Department of the Finance Ministry. In 1988–94, he was attached to the USSR's and then the Russian Federation's Mission at the United Nations. Between 1981 and 1988, he did research at the Institute of World Economy and Foreign Affairs of the Academy of Sciences of the USSR. Mr Storchak graduated from the Moscow State Institute of International Relations of the Ministry for Foreign Affairs of the USSR, specialising in international economic relations, after serving as a transport worker and in the Soviet Army.

Tran, Hung Q

First Deputy Managing Director, Institute of International Finance

Hung Q Tran has assisted the Managing Director in managing the IIF since December 2009. Before that, he was Counsellor and Senior Director, Capital Markets and Emerging Markets Policy, responsible for the IIF's emerging market policy work and global capital market analysis. Before that, Mr Tran served for six years at the IMF as Deputy Director, Monetary and Capital Markets Department, where his responsibilities included the overall management of the *Global Financial Stability Report*. He also served from 1998 to 2001 as the Managing Director, Chief Economist/Global Head of Research for Rabobank International. He had spent the prior 12 years with Deutsche Bank including serving as Co-Managing Director of Deutsche Bank Research from 1991–95. Earlier in his career he worked in international fixed income research for Merrill Lynch and Salomon Brothers.

Wilson, Thomas C

Chief Risk Officer, Allianz SE

Mr Wilson is responsible for global risk control and risk management policies at Europe's largest insurer. Prior to joining Allianz in 2008, he was the Chief Risk Officer for ING's global insurance operations. Prior to joining ING in 2005, Mr Wilson was the Global Head, Finance and Risk Practice at Oliver Wyman & Company. Before that, he was the Chief Financial Officer and Chief Risk Officer for Swiss Re New Markets, the alternative risk transfer and capital markets activities of Swiss Re. Prior to joining Swiss Re in 1998, Mr Wilson was the Global Head, Risk Management Practice, at McKinsey & Company. He earned his BSc in Business Administration with honours from UC Berkeley and his PhD in Economics from Stanford University. Mr Wilson is a dual American-Swiss citizen.

Foreword

Jaime Caruana[1]

This volume presents and summarises the proceedings of a one-and-a-half day seminar on sovereign risk hosted by the BIS in January 2013. The event brought together senior central bankers, sovereign ratings analysts, fund managers, sovereign legal specialists and risk managers at financial institutions.

I personally came away with an even stronger impression of the potentially dire implications for financial markets if sovereign borrowers cannot put their finances back on a stable medium-term footing. The macroeconomic arguments for fiscal consolidation are compelling: with populations growing older and the challenge of making good on open-ended promises of health and pension support, this is no time to be running up debts to risky levels.

Ominous too are the financial stability implications of sovereigns losing their all but risk-free status. As they do so, foreign investors unload their sovereign bond holdings onto domestic investors. The resulting rise in funding costs for the sovereign means increased borrowing costs for banks, which pass these on to corporate and household borrowers. In the bond market, investors make even multinational firms headquartered in the country pay up. Meanwhile, the sovereign's backing for the banking system loses its credibility in the marketplace, so that the banks' sovereign debt holdings become a source of weakness instead of strength.

Strictly speaking, sovereign bonds never were entirely risk-free in the sense of posing no credit risk. And this is to say nothing of the duration and inflation risks that were always present in sovereign paper, as well as the currency exposure for foreign investors. But market participants used to be willing to regard the credit risk element as if it were negligible. Yet it takes only a slight uptick in default probabilities for the market dynamics to change radically, as outlined above.

That said, the discussions at the BIS seminar suggested that financial markets and investors are still only at the early stages of adapting to higher perceived sovereign risk. It is too early to say exactly where these adaptations will take us but, on present trends, the destination will be unattractive. Hence, the success or otherwise of sovereigns' efforts to earn back their practically risk-free status is as much a financial stability issue as a macroeconomic one.

If sovereigns fail to restore their credit standing, what then? Some of the responses could even be benign. For instance, some fixed income investors are re-weighting sovereigns by GDP rather than by debt market capitalisation. Or they are adding emerging market sovereign bonds to their core holdings. Such moves would make sense even in the absence of higher overall sovereign risks.

Unfortunately, most of the reaction to increased sovereign risk will lead us in less benign directions. Oddly enough, even the best-rated sovereigns could suffer. As the supply of undoubted sovereign debt shrinks, these issuers will be able to raise long-term funds at negative real yields. This will be a boon to interest-sensitive

[1] General Manager, Bank for International Settlements

sectors such as real estate. But, for countries with their own currencies, the combination of cheap money and strong exchange rates could pose the dual threat of rapid private credit growth, along with attendant risk of financial instability, and hollowing out of their manufacturing sectors – a form of Triple-A Dutch disease, indeed.

Another outcome is that risk managers at banks and insurance companies are starting to attach non-zero probabilities of default to even the most creditworthy of sovereigns. Contrary to much commentary, Basel II's internal ratings approach never assigned a zero weighting to prime or home sovereigns. Now risk managers are allocating credit risk charges to an ever-wider range of sovereign exposures.

It remains to be seen how higher perceived risk in sovereign exposures will affect risk-taking elsewhere in the portfolio. In the stock market, investors are already penalising banks and other financial firms that are highly exposed to sovereigns – and this includes firms with long investment horizons matched to their long-duration liabilities.

Nor will risk managers and investors stop there. Experienced risk professionals are well aware of the limitations of their risk models. Sooner or later, they will decide that their firm must be able to survive a surprise default by any sovereign, regardless of its rating.

This is where things could get complicated. Instead of just adjusting their portfolios in line with changing risk-return profiles, financial firms could become increasingly reluctant to use sovereign debt to achieve the duration and liquidity they need. And, if good substitutes for sovereign paper are lacking, it is far from clear how the financial system will continue to function smoothly.

- Insurers, for example, customarily rely on government bonds for the long-duration assets that match their long-term liabilities. From a credit point of view, it would be possible to diversify into corporate bonds, but corporate bond markets would need to develop in an unprecedented manner to provide the very long-dated paper required.
- Similarly, banks look to government paper for their secondary liquidity reserves and to post as collateral. Again, corporate paper will have to become much more liquid before it can provide a useful substitute for government debt in bank liquidity management.

In summary, when one considers:

- how demand for an ever-shrinking pool of top-quality sovereign debt could make trouble even for its issuers;
- the technical challenges involved in estimating reliable default probabilities for sovereigns, as well as the unpredictable nature of related portfolio responses; and
- the hurdles facing insurers and banks as they seek the duration and liquidity they need while keeping their sovereign exposure in check,

then it is very hard to avoid the conclusion that few questions of the moment are as important as whether – or not – sovereign debtors can retain or regain their risk-free status.

Welcoming remarks

Jaime Caruana[1]

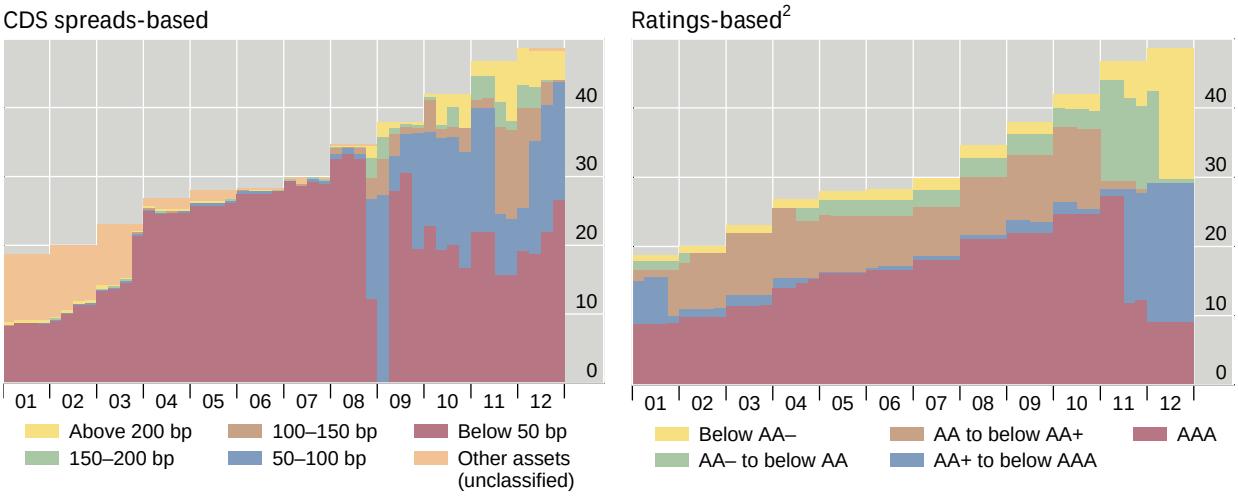
Let me extend a warm welcome to all the participants in this BIS seminar on sovereign risk. In these brief introductory remarks, I would like to provide you with an outline of the seminar and to pose some questions for the next day and a half. At the same time, I cannot resist an aside on the origins of credit risk.

The Latin root of credit is *credere*, the infinitive form of *credo*. John Maynard Keynes described credit in 1943 as the "miracle . . . of turning a stone into bread". And credit can indeed do great things, whether extended to sovereigns or to the private sector.

Recently, however, there has been too much of a good thing, contributing to a signal increase in systemic risk. As noted by the *BIS Annual Report* last June, the pool of top-rated sovereign debt within the OECD has diminished considerably over the past few years and it has also become more concentrated by issuer (see burgundy-coloured area in Graph 1, right-hand panel below).

Credit risk profile of the pool of general government debt[1]

In trillions of US dollars — Graph 1



[1] Total outstanding for OECD countries. The debt levels used are year-end observations. End-quarter observations are used for the CDS spreads and ratings. [2] The ratings used are simple averages of the foreign currency long-term sovereign ratings from Fitch, Moody's and Standard & Poor's.

Sources: Bloomberg; Markit; national data; BIS calculations.

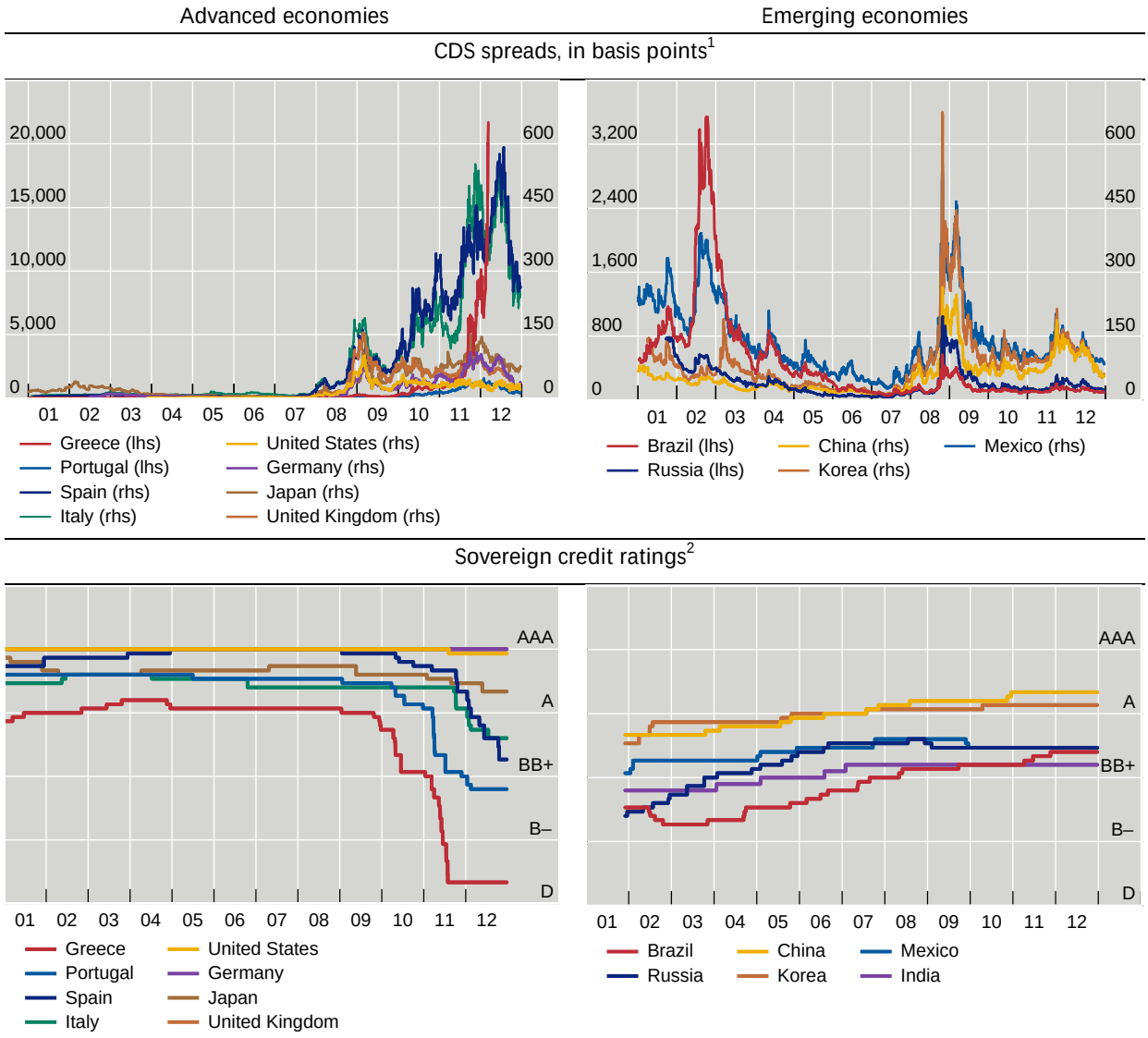
The sovereign credit quality of advanced economies has deteriorated rapidly over the past few years. And it will be difficult to improve that trajectory any time soon, given the modest outlook for growth, lingering fragilities in the financial system and still high levels of private indebtedness. Over the past five years, public debt in the advanced economies has jumped from about 75% of GDP to 110%, with

[1] General Manager, Bank for International Settlements.

a further increase foreseen before it stabilises in 2014. And this is the optimistic rather than the pessimistic scenario.

Fortunately, the sagging ratings of OECD sovereigns (Graph 2, lower left-hand panel) have not been mirrored by developments outside the OECD. In fact, the underlying fundamentals as well as the ratings of emerging sovereigns are generally strengthening (Graph 2, lower right-hand panel).

Sovereign CDS spreads and credit ratings — Graph 2



[1] Five-year on-the-run. [2] Daily averages of long-term foreign currency credit ratings from Fitch, Moody's and Standard & Poor's.

Sources: Bloomberg; Markit; BIS calculations.

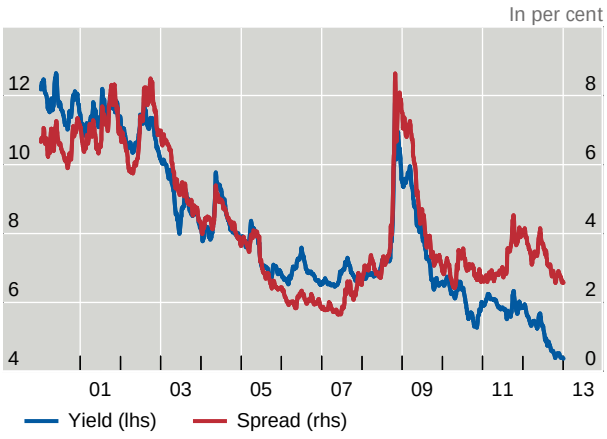
Graph 3, left-hand panel, shows how emerging market international bonds have dramatically narrowed their spreads over US Treasury yields (shown in red with the scale on the right-hand side), falling almost to their pre-crisis lows. At the same time, owing to rock-bottom base rates, their absolute yields (shown in blue with the scale on the left-hand side) are plumbing all-time lows.

The right-hand panel of Graph 3 plots ratings at the turn of the century on the horizontal axis against the ratings as at 3 January 2013 on the vertical axis. On this

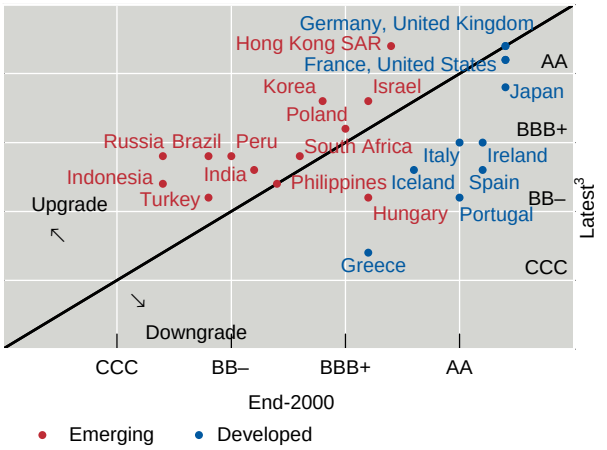
graph, countries above the 45-degree line have enjoyed upgrades while those below the line have been downgraded. This graph shows that the emerging markets, shown in red, have enjoyed upgrades (with some exceptions in central and eastern Europe) while the advanced markets, shown in blue, have at best retained their ratings and in most cases have suffered downgrades.

Performance of sovereign credits — Graph 3

Emerging markets international bond yields and spreads[1]



Developed and emerging sovereign credit ratings[2]



[1] Five-day moving averages. [2] Long-term foreign currency debt. [3] 3 January 2013.

Sources: JPMorgan Chase; Standard & Poor's.

If this deterioration in sovereign credit quality is not stopped and reversed, the financial and economic stability implications will be far-reaching. They will raise significant policy challenges, including the threat of fiscal dominance, additional obstacles for monetary policy exit strategies to overcome, diminished scope for backstopping the financial system or running countercyclical policies, and the potential for heightened and damaging feedback between sovereign and financial system risks. These challenges require analysis from different perspectives and their magnitude will depend on many elements, not only on the amount of debt and deficits, but also on the distribution of holders, a country's external position, and many other factors.

In this seminar, different perspectives will be represented in different panels. In the first panel, three central bank governors will discuss some of these risks and challenges, drawing on their own varied experiences.

The sovereign rating business

In the second panel, we will consider the sovereign rating business. This is not the first time that the BIS has hosted a discussion of ratings by governors. These discussions have been uniformly vigorous. It is easy to see why central bankers readily engage on this issue. For instance, in managing reserves, there is a question how much central banks can or should rely on ratings to allocate their funds. And so on.

Panel 2 will engage with certain fundamental questions that have arisen about the sovereign rating business.

- As Governor Honohan will argue in Panel 1, market participants can go from paying little attention to sovereign credit risk or even ratings to paying a lot of attention to them, perhaps too much. How should one interpret the rapid downgradings of sovereigns that was a feature of the Asian financial crisis and the more recent sovereign strains in Europe?
- What do sovereign ratings mean? How should we think about sovereign ratings with so little recent history behind them? In particular, does a given sovereign rating mean the same as an identical rating as applied to a firm? Do rapid sovereign downgrades reflect the real changes in risk or identified uncertainties ("known unknowns") or do they capture the sudden recognition of new but previously underappreciated risks ("unknown unknowns").
- How should central bankers regard the widespread view that the sovereign debt of countries in a monetary union is more risky – other things being equal – than that of other countries?
- What is the relationship between sovereign risk and high levels of private debt?
- How to avoid cliff effects?

Financial markets without a risk-free sovereign

Panel 3 will discuss financial markets without a risk-free rate, an extreme scenario. Let me be clear that a world of financial markets without something approximating a risk-free sovereign strikes me as a world that would be very complex, and one that we would not want to live in. The reasons for this view are set out in last June's *BIS Annual Report*, specifically in its commentary on the Committee on the Global Financial System's Panetta Report that highlights concerns about financial instability, the effectiveness of monetary and fiscal policy, and spillovers to the private sector.

To be sure, risk-free must be understood as a behavioural concept. As Governor Gudmundsson will argue, there is no such thing as a risk-free asset, strictly speaking. However, we used to live in a world where sovereign risk was so low that investors could behave as if that debt was risk-free. The situation was a bit like air travel: we all know that the risks are not zero when we get on a plane but they are low enough for most of us behave as if they were truly minimal.

The plight of countries that lose their risk-free status underlines the importance of retaining or regaining some kind of risk-free asset. But what would the world look like if sovereigns were unable to win back their all-but-risk-free status? The consequences could be far-reaching. Let me make two points. First, even when there is only a slim chance of default, financial markets can work very differently when sovereign risk comes into play. The policy implications and challenges will be significant.

Second, we are forced to rethink the role of public securities as the risk-free asset in providing pricing benchmarks. The lack of a risk-free rate can lead to distortions and misalignments in asset prices.

- Quite a few questions confront Panel 3 under this heading. In a world without risk-free assets, where do private market participants go when they seek a flight

to quality? Would funds flow suddenly and disruptively through foreign exchange markets in search of a handful of remaining safe havens?

- Can banks safeguard their liquidity if government debt becomes just another risky asset?
- How will financial markets respond to any shortage of collateral?

Legal perspectives

Let us move on to legal perspectives. Global financial stability is best served when sovereign bond contracts offer appropriate solutions to any problems that sovereigns may experience in servicing their debt on the original terms. Recent events have put the spotlight on the *pari passu* clause, a boilerplate phrase about which we shall hear more tomorrow.

But the more pertinent question is whether sovereign bond contracts contain collective action clauses, which allow a majority or qualified majority of creditors to force a debt restructuring on minority holders. Such clauses are now more often appearing in New York sovereign dollar issues. This is good news, especially if one shares the concern that international bond investors are providing credit on too easy terms, especially to new sovereign borrowers.[2]

Since no general legal insolvency framework applies to the default of a sovereign, tomorrow's legal panel will also shed light on the following questions:

- When is there a sovereign default? A general suspension of payments obviously qualifies, but what about the non-payment of only a part of the sovereign debt?
- What is a selective default – has a default already occurred when a CDS is triggered?
- How should different creditors of the sovereign be treated? And what exactly does *pari passu* mean?
- Since a sovereign issuer generally proposes a debt restructuring to its creditors with a view to maintaining its market access, how could an orderly process be organised – as proposed by the IMF and others – to prevent hold-out creditors from disrupting external debt restructurings?[3]

Panel 4 tomorrow morning will try to answer these complex legal questions in the light of recent financial and judicial developments.

The dinner talk tonight will meanwhile ask whether the infrastructure for sovereign debt difficulties is robust.

- Is the market well prepared for the contingency that is built into the spreads?
- What could be done to improve matters?

[2] K Saigal, "Mongolia issue sets off EM bond bubble concerns", *Euromoney*, 10 December 2012.

[3] See the Joint Committee on Strengthening the Framework for Sovereign Debt Crisis Prevention and Resolution, *Report* dated October 2012 to the Group of Trustees chaired by Governors Carstens, Noyer and Zhou and former Governor Fukui.

Sovereign risk management in financial institutions

Panel 5 will look at sovereign risk management in financial institutions. It is a myth, repeated in today's *Wall Street Journal,* that the Basel rules have weighted sovereign risk, or at least some sovereigns' risk, as officially zero.[4] This is one of those "facts" that is proven, almost, by the sheer force of repetition. To be sure, Basel I drew a crude distinction between OECD and non-OECD sovereigns. But Basel II called on banks to make a granular and defensible assessment of each exposure. Basel II requires capital allocations to be sensitive to default risks even when these are small and difficult to assess. It is also true that supervisors of a given country or region could authorise exceptions, which may have departed from these norms of risk-sensitivity and granularity, especially if sovereign debt was funded in the same currency. But the framework of Basel II requires that the capital held should be proportional to risk.

That said, it is no easy matter to fold sovereign risk into a bank's or an insurance company's credit risk management. As sovereign defaults remain thankfully rare, a sovereign's default probability has a large element of uncertainty built in; it is not straightforward to estimate like, say, the risk of mortality. For instance, there have been no cases of an investment grade sovereign entering default in the past year. This is clearly unlike the case of investment grade companies, which default many times more frequently.

But just because there is no consensus, just because the problem is difficult, just because any approach is unsatisfactory, risk managers cannot indefinitely hide behind the practice of zero weighting. Stress tests may have a role to play here.

In this panel, we will hear how financial institutions are tackling or could tackle these intractable problems. The questions will include:

- How should sovereign risk be integrated into financial institutions' risk management?
- Do multinational financial firms with strong subsidiary structures in different countries experience tensions between the central, home-country perspective and several host-country subsidiary perspectives?
- How should a financial institution assess default probabilities, especially those of highly rated sovereigns? How do they in practice?
- What special aspects of this problem, if any, are relevant to central banks?

Again, this is but a summary of a very full agenda for us. Let me thank you for your active participation. I am sure that you will come up with better questions than I have. As we may have to live with higher credit risk in the sovereign world for some time, I earnestly hope that we can reduce that risk, but a lot of work remains to be done if we are to succeed.

[4] H Hannoun, "Sovereign risk in bank regulation and supervision: Where do we stand?", speech at the Financial Stability Institute High-Level Meeting, Abu Dhabi, United Arab Emirates, 26 October 2011.

Introduction of the policy panel

Jaime Caruana[1]

Today we are privileged to have with us three Governors who have all had distinguished careers as economists. Indeed, all three had stints as young economists at their respective central banks, before eventually becoming governors. All three can be counted on to provide us with fresh insights into sovereign risk.

These similarities granted, we shall benefit from very different perspectives. William Dudley, President of the Federal Reserve Bank of New York, will talk about sovereign risk from the standpoint of the largest financial markets in the world and the safe haven for global investors in recent years. With some of the lowest bond yields in its history, the United States faces challenges in consolidating its fiscal accounts to sustain the singular role of US government debt in the international financial markets. We will be very interested in Bill's view from New York.

Then we shall hear from Governors representing economies that differ in several ways besides their size. In both Iceland and Ireland, before the current Governors' terms, banking and finance had grown to a size where they were totally out of proportion to the underlying economy. At the crucial moment, politicians acting amid the fog of crisis had to make fateful decisions. Both economies are now on the road back to economic growth and access to international investors. We are privileged to hear the reflections of Már Guðmundsson, Governor of the Central Bank of Iceland, and of Patrick Honohan, Governor of the Central Bank of Ireland.

[1] General Manager, Bank for International Settlements

Panel remarks

William C Dudley[1]

The deterioration in the fiscal position of many developed countries and the questions it raises about fiscal sustainability and sovereign credit risk is a noteworthy development that deserves close scrutiny and attention. However, it has not had significant direct implications for U.S. monetary policy or the Fed's central bank operations to date.[2] Nor have questions about long-term fiscal sustainability for the U.S. had significant implications for the cost of U.S. borrowing or perceptions of U.S. sovereign creditworthiness. Thus, so far the United States has been relatively insulated from such pressures.

That said, I do recognize that this is a major global issue and one we should not ignore in the United States. This is an issue that is more difficult to solve given the aging of the developed world populations. I would also note that these fiscal problems are particularly problematic and difficult to solve when fiscal solvency concerns become interlinked with worries about banking system soundness.

For the U.S., while we face very real long-term fiscal challenges, these are quite capable of resolution. As we saw in the drama surrounding the fiscal cliff talks in Washington, the challenge lies in reaching bipartisan political agreement on tough tax and spending choices. So far, that is proving very difficult.

From the narrow perspective of the Federal Reserve's balance sheet, the issue of sovereign creditworthiness of foreign debt obligations falls mainly into two major buckets – the risks associated with investments of the Fed's foreign exchange reserve portfolio on its own behalf and on behalf of the U.S. Treasury and the risks associated with the Fed's foreign exchange swap facilities with other central banks. On both scores, I would judge the risks to be extremely low.

Starting first with the Fed's foreign currency portfolio investments, the Fed's holdings represent a very small share of its balance sheet. For example, at the end of September 2012, such holdings totaled $25.8 billion, less than 1% of the Fed's total balance sheet, and consisted exclusively of euro- and yen-denominated holdings. Also, the credit quality of such holdings is very high. A significant portion is invested on an outright basis in German, French, and Japanese securities, with much of the remainder invested in euro-denominated repurchase agreements backed by the sovereign debt of Belgium, France, Germany, Italy, the Netherlands and Spain. Also, some funds are invested at the BIS and at other official institutions or held as cash (given the extraordinarily low level of short-term rates).

The Federal Reserve also has exposures via the foreign exchange swap agreements executed with the Bank of Canada, the Bank of England, the ECB, and the Swiss National Bank. As of early December, total outstandings were $12.4 billion, almost exclusively with the ECB. The Federal Reserve judges the risk on these swaps to be extraordinarily low as the dollars swapped are not only secured

[1] President, Federal Reserve Bank of New York and Member of the Board of the BIS.

[2] As always, my comments reflect my own views and not necessarily those of the FOMC or the Federal Reserve System.

by the foreign exchange that has been exchanged against the dollars, but also backed by the foreign central banks as counterparties.

With respect to the United States, sovereign risk is an issue that has been very much in the news amid fiscal negotiations in Washington. But there are few signs in market prices that the turbulence surrounding the fiscal cliff has undermined investor perceptions of the creditworthiness of the U.S. in a significant way. Long-term U.S. Treasury yields are extraordinarily low. Moreover, this judgment is reinforced by comparing sovereign debt spreads between the U.S. and other countries such as Canada where the fiscal position looks better and the politics are less difficult. Despite a fiscal agreement that does little to put the U.S. on a long-term sustainable fiscal path, sovereign debt spreads are little changed.

Long experience tells us not to rely on bond markets to give advance warning of sovereign stress, so I don't think we should wait for market pressure to put our fiscal house in order. Waiting will just make the necessary adjustments larger and more difficult. Nonetheless, I think there are several reasons why market concern about U.S. sovereign creditworthiness remains relatively low, despite a rising U.S. federal debt-to-GDP ratio and the very modest progress that has been made in putting the U.S. on a sustainable fiscal path.

First, the U.S. economic outlook – ex the noise surrounding the fiscal cliff – is improving. Thus, the growth prospects for the U.S. look relatively good compared to Europe and Japan over the next couple of years. Positives worth mentioning include:

1. The deleveraging of the household sector is well-advanced. For example, debt service as a share of income has declined back to levels last seen in the early 1990s.

2. The housing sector is recovering. Both measures of activity and prices are improving. This is important not only because the housing sector has been a drag on economic activity in recent years, but also because the decline in housing prices has cut household wealth and impaired households' access to credit. The rise in home prices suggests that these negative impulses are now moving in the opposite direction.

3. The banking system has increased the quantity and quality of its capital and has bolstered its liquidity buffers. Thus, banks are in a position to increase their lending. As a result, credit availability is slowly improving.

4. U.S. corporate profit margins are unusually high and corporations are awash in cash. This means that U.S. corporations have the capacity to increase investment spending significantly.

5. Innovations in oil and natural gas extraction technology have created a significant competitive edge for the U.S. internationally in terms of energy prices. The U.S. dependence on foreign energy sources has fallen significantly and low natural gas prices will undoubtedly spur significant expansion of activities such as petrochemical production in the U.S. where the U.S. now will be the low cost producer.

Also, longer term, the challenge of the U.S. fiscal outlook seems more manageable – putting politics aside – compared to most other industrialized countries. In particular, I would note that the demographic trends in the U.S. are considerably more favorable compared to Europe and Japan. Also, the U.S. has considerable scope for modifying its immigration policies in a way that improves its growth potential and its demographic trajectory and eases the fiscal burden. I would

also point out that the U.S. has significant fiscal capacity. In aggregate, U.S. government spending in 2011 was 38.9% of GDP. This compares to 52.8% of GDP for France, 43.7% of GDP for Germany, and 47.3% for the U.K.

Even the trajectory of healthcare spending that is the greatest source of long-term budget pressure in the U.S. seems manageable. While it is true that on current trends, the Congressional Budget Office projects that federal Medicare and Medicaid spending will climb to 9.6% of GDP in 2037 from 5.4% in 2012, there is plenty of scope for the U.S. to better control aggregate healthcare spending. Currently, the United States spends about 18% of GDP on healthcare, compared to a range of 10–12% for most other developed countries. This suggests that the problem is not a paucity of resources, but instead lack of discipline on how those resources are spent.

There is a significant literature in the U.S. that shows that the healthcare dollars could be better spent. For example, big differences in spending regionally across the country on certain types of healthcare services do not result in meaningfully different healthcare outcomes. At the same time, there is no agreement on what type of reforms should be enacted to "bend the cost curve" in healthcare. Thus, this is an issue that is likely to be resolved very slowly over many years.

To sum up, the U.S. fiscal problems are actually quite manageable from an economic perspective. The problem is whether the politics will allow them to be managed in a timely way. Longer term, I believe that the political obstacles will be surmounted.

Finally, some brief comments on sovereign risk. Sovereign risk comes in many shapes and sizes – there is the risk of loss of principal from outright default and from debt restructuring. There is a risk of the breakup of currency union and redenomination risk. There is the risk that currency devaluation could make it difficult for a country to service its foreign denominated debt. Finally, there is the risk of loss from unanticipated, higher inflation. For the U.S., which supplies the world's reserve currency, the only one of these risks that seems particularly relevant is the risk of higher unanticipated inflation.

Let me focus on this risk. First, the Federal Reserve is committed to a 2% inflation objective, which we judge as consistent with our price stability mandate. In other words, we have the will to keep inflation in check. Also, we have the means. The FOMC has the tools to keep inflation in check despite an enlarged balance sheet. The ability to pay interest on excess reserves means that the FOMC can manage the credit creation process so as to be consistent with its goal of price stability. I believe that inflation will run close to our long-term objective over the coming years.

Second, I and other Federal Reserve officials have been very clear that the Fed is not purchasing Treasury securities in order to reduce the Federal government's net interest expense and to hold down the budget deficit. Our policy actions are designed to make financial conditions more accommodative, thereby stimulating a stronger economic recovery. Now it is true that our actions have temporarily held down the Treasury's net debt service costs. But this is a side effect of our policies, not the goal of the policies. And, when the current set of policies is no longer appropriate in order to achieve our dual mandate objectives, these policies will end. When this occurs, the Treasury's debt service costs are likely to increase significantly through two channels:

1. The amount of funds that the Federal Reserve remits to the U.S. Treasury each year is likely to fall back to more normal levels.

2. As interest rates normalize, the costs of servicing the U.S. government debt will increase over time.[3]

The Fed's actions are providing a short-term fiscal benefit, but this is not a benefit that will be sustained over time. The Fed's actions will be driven by our dual mandate objectives, not the fiscal situation of the United States government. I believe it is important that this point be underscored in our discussions with Congress and the Administration, so there is no expectation that central bank balance sheet policy will provide any long-term relief from the tough choices needed to put our nation's finances on a stable footing.

Thank you for your kind attention.

[3] I discussed this issue in more detail last year. See "Remarks at Panel Discussion at 2012 U.S. Monetary Policy Forum", New York City, http://www.newyorkfed.org/newsevents/speeches/2012/dud120224.html.

Panel remarks

Már Guðmundsson[1]

I would like to cover three issues in my remarks. First, I will reflect a bit on the title of the seminar and some of the more specific questions directed at this panel. Second, I will discuss the nexus between sovereign risk and banking fragility, using Iceland as a case study – after all, the Icelandic experience is probably the reason that I am taking part in this interesting seminar in the first place. Third, and again with reference to the Icelandic case, I will reflect on the connection between sovereign ratings of advanced countries and actual sovereign defaults.

The title of this seminar is *Sovereign risk: a world without risk-free assets?* As has been repeatedly pointed out, there is, strictly speaking, no such thing. The default probabilities of even the strongest sovereigns are not zero, and they increase as the horizon gets longer. Furthermore, the real income stream of nominal government bonds is uncertain. The same applies to the FX income stream facing foreign investors, and then there are risks such as the possible introduction of capital controls, which will not count as defaults as long as debt is serviced on time in the domestic currency of the sovereign without discrimination between domestic and foreign investors.

Although it is important to bear all this in mind, it is nothing new. Furthermore, it does not constitute a major problem for the functioning of capital markets as long as the default probabilities of sovereigns seen to be providing so-called risk-free assets are perceived to be so low at the relevant maturities that they can largely be ignored. The question we are faced with is whether this is still the case and what the future will bring in this regard, given that both the market and the rating agencies perceive an increase in sovereign risk. The jury is still out, but my current prediction is that, in the foreseeable future, the supply of risk-free assets according to this definition will be very significantly greater than zero.

Advanced countries with grade-A ratings are and will be issuing a lot of debt in the near term, and the high price that the best-perceived sovereign debt is carrying is a reflection of strong demand rather than weak supply. In spite of everything we have gone through, there has been no sovereign default of any advanced country apart from Greece since the interwar period. Yes, many of these countries have been downgraded lately, but what that means in terms of actual default probabilities is not clear to me at this point, although it might be somewhat clearer after the next session. The fact of the matter is that advanced countries have both considerable means and strong incentives to avoid default. Even Iceland was able to avoid a default after the collapse of 90% of its financial sector and its deepest recession since the interwar period. So, for the post-war period, Walter Wriston has been largely right so far, in saying that "countries don't go bust" – as far as advanced countries are concerned – although he was wrong as regards all countries. And what holds for advanced countries in this respect does so increasingly for the more important and advanced EMEs.

[1] Governor, Central Bank of Iceland.

I am not denying that sovereign risk has increased, more broadly speaking. Higher deficits and debt levels and weaker growth prospects bear witness to this. But the degree to which this translates into higher default probabilities in the narrow sense is not clear. My prediction is that default probabilities will remain low for most advanced countries.

What, then, about the reaction of rating agencies and markets? Here again, we have the question of what rating agencies are actually trying to measure. I have long experience of dealing with them in my current and past jobs, and I have the sense that they are measuring something more than default probabilities. Partly, therefore, a downgrade by one or two notches within an investment-grade category could be consistent with my view. Then, on top of that, there is a significant amount of evidence to suggest that ratings do not see through the cycle. So the rating agencies and the markets are probably overestimating sovereign risk at the current juncture, in the same way that they underestimated it prior to the crisis. There is one important proviso to this statement, however: the negative feedback loop between sovereign risk and bank fragility, which in historical terms has been particularly severe in the recent period. Thus, for some countries, the markets might be factoring in further socialisation of private sector losses. Therefore, in addition to medium-term fiscal consolidation, a weakening of the nexus between sovereign risk and banking fragility is key. And that is where Iceland comes in.

The collapse of Iceland's three cross-border banks in early October 2008 was the most noticeable event in the unfolding of the financial crisis that hit the country that year. The combined balance sheets of these banks was 10 times Iceland's GDP, and their combined bankruptcy, measured in terms of balance sheets, ranks second in size in the international history of corporate failures, only after Lehman Brothers. And this happened in a country that ranks among the smallest in the world. We are still dealing with the complications that this entails, as can be seen in our overblown and unbalanced IIP and the controls on capital outflows.

Before the collapse, the banking system had expanded very rapidly, growing in just five years from a combined balance sheet of less than 2 times GDP (at the end of 2003) to almost 10 times GDP (in mid-2008). Most of this expansion was cross-border, and a significant part of it was really "off-border", having very little to do with Iceland, as both financing and investment took place abroad.

In the panic that gripped global financial markets after the collapse of Lehman Brothers, these banks were faced with a wholesale run on their foreign currency liabilities and were therefore heading towards a default on those liabilities in the absence of LOLR assistance in foreign currency. However, given the size of the balance sheets, it was impossible for the Icelandic authorities to provide such assistance on their own, and it could have been catastrophic for the credit of the sovereign if they had made a full-scale attempt to do so.

The Icelandic authorities' actions were based on the assumption that the banks were solvent, which in turn was based on published financial accounts and the analysis of the supervisor. On that premise, the authorities tried to build defences against potential foreign currency liquidity problems at the banks by negotiating swap lines and tapping foreign capital markets, in both cases with limited success. Now, however, we know that there were hidden vulnerabilities in the banks' capital positions.

There was also a failed attempt to nationalise one of the banks in late September 2008. It was indeed fortunate that it did fail, as nationalising the bank

would have turned a bank foreign currency refining problem into a sovereign problem, with the serious risk that the sovereign might have defaulted on such foreign currency payments.

In this light, and given the lack of international cooperation, the Icelandic authorities were forced to consider radical solutions. Although they were not necessarily articulated fully at the time, these solutions entailed several goals: preserving a functioning domestic payment system, ring-fencing the sovereign in the case of bank failures, limiting the socialisation of private sector losses, and creating the conditions for rebuilding a domestic banking system.

In essence, the adopted solution saved the domestic operations of the banking system by splitting up the banks and allowing the international part to go into a resolution process. Furthermore, in order to stop an incipient run on domestic deposits, all deposits in Iceland were declared safe and all deposits in Icelandic-headquartered banks were given priority over other unsecured claims. As a result of these measures, the domestic payment system functioned more or less seamlessly throughout, and common citizens had continuous access to their deposits.

There are still a number of misconceptions about this process in international discussions. There have been claims that Iceland allowed its banking system to collapse, with what now seem reasonable results, and that others should consider doing the same. The fact is that Iceland kept the domestic part of its banking system running throughout; otherwise, the consequences would have been dire. Some have claimed that the banks were nationalised. They were not. The old banks are private companies. They are in winding-up proceedings governed by law; they are not under the control of the Government. The Government has a majority stake in only one of the new banks. Others have claimed that Iceland defaulted and got away with it. The opposite is true. The credit of the sovereign was preserved, and all debt obligations have been paid on time. Moreover, the investment-grade credit ratings from Moody's and S&P were preserved throughout the crisis. This is why the sovereign has been able to tap international capital markets twice so far since the crisis struck.

So the bottom line is that a sovereign default was avoided in spite of an almost unprecedented financial collapse and the worst economic recession since the interwar years. A key to that result was the ring-fencing of the sovereign from the collapse of the private banks. All debt service payments on sovereign debt, in both domestic and foreign currencies, have been made in full and on time. But the avoidance of default during a crisis does not come without the willingness to use the means available to avoid that outcome, even in very adverse situations, and the ability to endure the temporary hardship that comes with it. In addition, Iceland – like Ireland, probably – was helped by a relatively good fiscal position prior to the crisis. The fiscal consolidation that began in 2010 and has already resulted in a significant primary surplus was subsequently an important factor in restoring external confidence, which fell to what, in retrospect, seems an unjustifiably low level. In Iceland's case, the overall effort was made easier by the outside assistance of the IMF, the Nordic countries, and Poland. The same consideration applies to the hardest-hit EU countries and should be kept in mind when assessing their probability of default.

Finally, let me say a few words about credit ratings and market perceptions in the Icelandic saga, which broadly conforms to more general patterns. Both the sovereign and the private Icelandic banks were assigned triple-A ratings by Moody's for a period prior to the crisis (the sovereign from October 2002 to May 2008 and

Kaupthing Bank from February 2007 to April 2007). In the case of the banks, the stated argument was that the Government would stand behind them in times of difficulty. We now know that this was nonsense, given the size of the banks and the scale of their international activities. In the case of the sovereign, this rating was not so bad after all!

The bank ratings then started to fall in early 2008 and then plunged to sub-investment grade after the banks had collapsed. The sovereign rating, however, although it fell over the course of 2008, never fell to sub-investment grade with Moody's and S&P, and it only fell below investment grade with Fitch Ratings after the president sent the so-called Icesave deal to a referendum in January 2010. It is now back to investment grade with all three agencies.

It is interesting to see how both ratings and market perceptions evolved around two key dates in September/October 2008, when decisions were taken that could drastically affect sovereign risk. The first date was 29 September, when an announcement was made of the Government's intention to take a 75% ownership stake in one of the three cross-border banks, an action that should increase sovereign risk. The other date was 6 October, when Parliament passed the so-called Emergency Act, which severed the nexus between the sovereign and the private banks and drastically reduced objective sovereign risk. Both the rating agencies and the market got the sign of the first event right: S&P downgraded the sovereign by one notch and Glitnir by one notch the day after; Fitch downgraded them the next day by two and three notches, respectively; and Iceland's sovereign CDS spread shot up to almost 600 in the first two days after the announcement, from just over 300 in the days prior. But both the rating agencies and markets got the sign of the second event completely wrong, with further downgrades and the CDS peaking at 1473 on 10 October. It took them a while to correct this, and the CDS was down to around 180 by the end of 2012. To be sure, there were other things going on at the time, but still!

Let me conclude by saying that the Icelandic case seems to support the conclusion that it is premature to state that we are in or heading towards a world without risk-free assets in the narrow sense. It will take policy mistakes of gigantic proportions in several parts of the world to get there. But the risk is not and never has been zero.

Panel remarks

Patrick Honohan[1]

What's new about sovereign risk since the crisis began? Conceptually, not so much, I would suggest – and nothing that cannot be fully explained within standard models of finance. But in practice, and in particular in the euro area, two linked elements that were always potentially present or implicit have leapt into prominence in a way and to an extent that were not foreseen. The first is that markets have begun to price default risk in a sovereign's home currency; the second is the contamination of the functioning and economic effectiveness of banks by the weak credit rating of their sovereigns (as well as vice versa).

I have to admit to the possibility that my remarks may be subject to some professional deformation here, in that my perspective on these matters is likely coloured by my preoccupation with the situation in Ireland. Ireland has certainly displayed these two elements in a dramatic way, but they are evidently present in half a dozen other euro area countries also and to an extent which has had implications for the functioning of the Eurosystem as a whole, and therefore on the global financial system.

Let me take these two points in turn. First the pricing-in of sovereign default risk in "home currency".

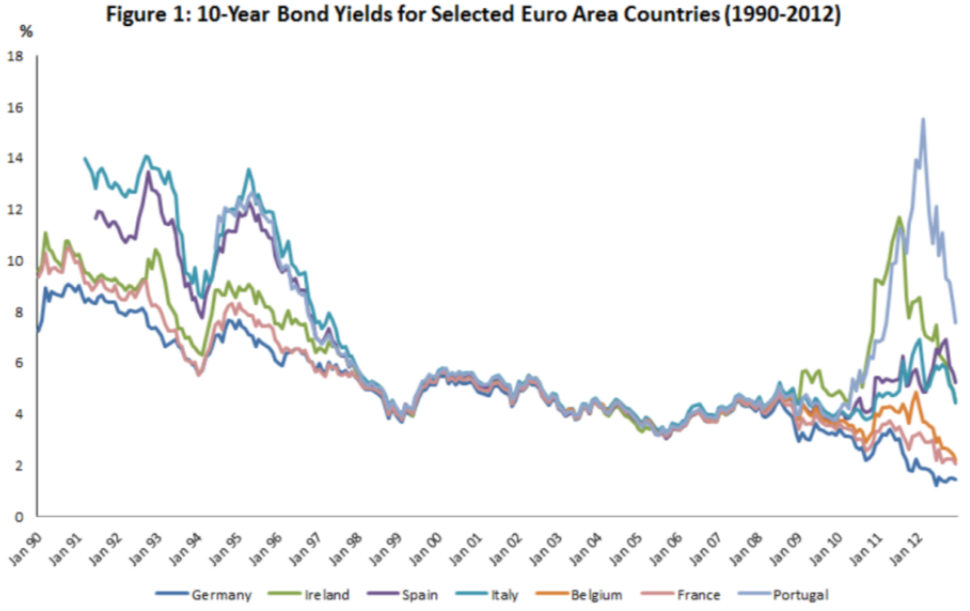
Why did the default premium suddenly emerge?

Evidently, even though everyone understood the rules, no such pricing-in occurred for the Eurosystem's first decade (Figure 1). Risk appetite was high for much of that period, but the market's perception of sovereign risk must also have remained low. (Perhaps, despite Treaty prohibitions, market participants assumed that any sovereign that got into trouble would be bailed out). Indeed, sovereign spreads in the euro area were almost totally insensitive to credit ratings before the crisis (Figure 2).

One often-heard interpretation of what happened during that decade is that the complacent market environment led to a relaxation of the budget constraint on euro area sovereigns and induced them to borrow recklessly. Actually this story doesn't fit the facts very well. After all, although sovereign debt ratios in most of the Eurosystem did not fall as much as they could and should have in the good years, at least they did *not* increase dramatically before the crisis (Figure 4). (Private debt ratios, and in particular the size of the bank and near-bank systems did increase, but that is a somewhat different story, to which I will turn shortly).

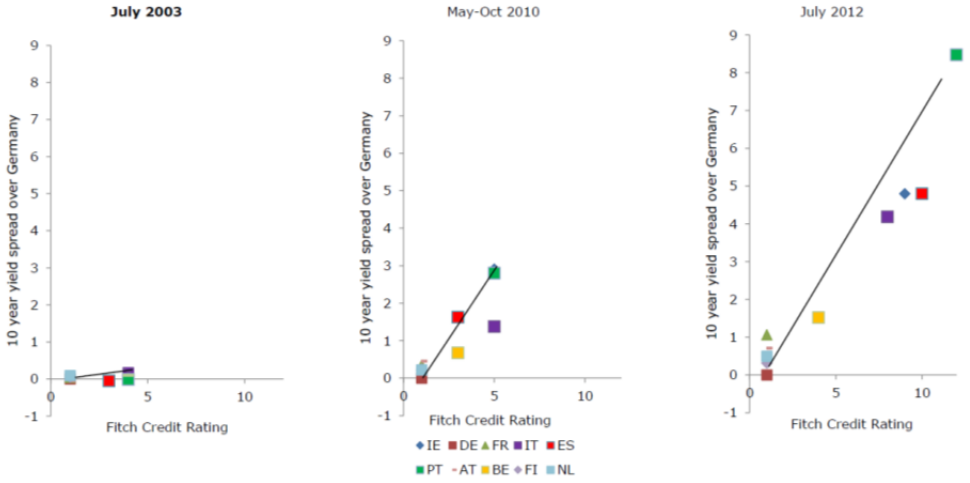
[1] Governor, Central Bank of Ireland.

Figure 1: 10-Year Bond Yields for Selected Euro Area Countries (1990-2012)



Source: Thomson Reuters Datastream (monthly data)

Figure 2: Euro area credit ratings vs. yield spreads



Fitch credit rating: 1 = AAA, 10 = BBB

Source: Fitch and DataStream

It's possible alternatively that there was a multiple equilibrium here, with the "good" or low interest equilibrium (with a self-fulfilling degree of confidence in the creditworthiness of all the sovereigns) being selected by the market at the start of the euro, and events during the financial crisis – not least those associated with Greece – having tripped the system into the "bad" or high-interest equilibrium with default risk premia moving a number of sovereigns into a more challenging debt sustainability position.

Most likely, what we have seen is a combination of factors: (i) a sharp reduction in risk appetite resulting in even little-changed debt ratios, as in Italy, looking more challenging and in need of a risk premium; and in addition (for most countries) (ii) a

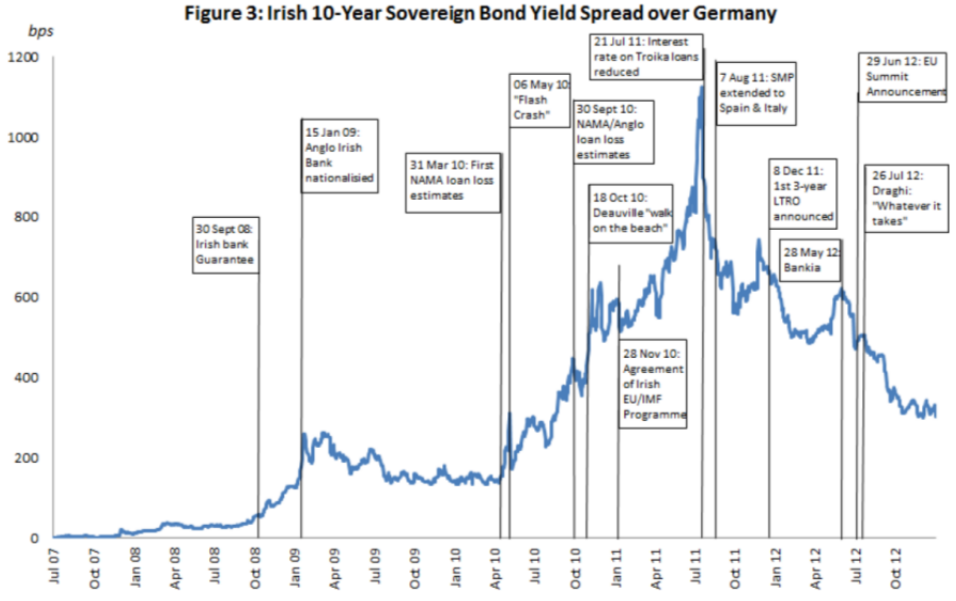
sharp increase in debt ratios as governments reacted to the crisis (including, but not at all confined to, the socialisation in most countries of some private banking losses through their assumption by governments) (Figure 4 again). The increased sensitivity of sovereign spreads to ratings, and the increased range of ratings themselves – both illustrated in Figure 2 – suggest that both factors are at work.

(As spreads widened in stressed countries, their fluctuations – which would not concern hold-to-maturity investors – added a risk factor for others and probably ratcheted up the average level of the spreads.)

In the specific case of Ireland, the depth of the recession and the remarkably high elasticity of tax revenues and the government deficit to the downturn, combined with the unfortunate decision to lock in a very comprehensive bank guarantee before the potential scale of the banking losses could at all be appreciated. All this meant that Ireland's actual and prospective general government debt made a shocking turnaround from about 25% of GDP in 2007 to 117% just five years later.

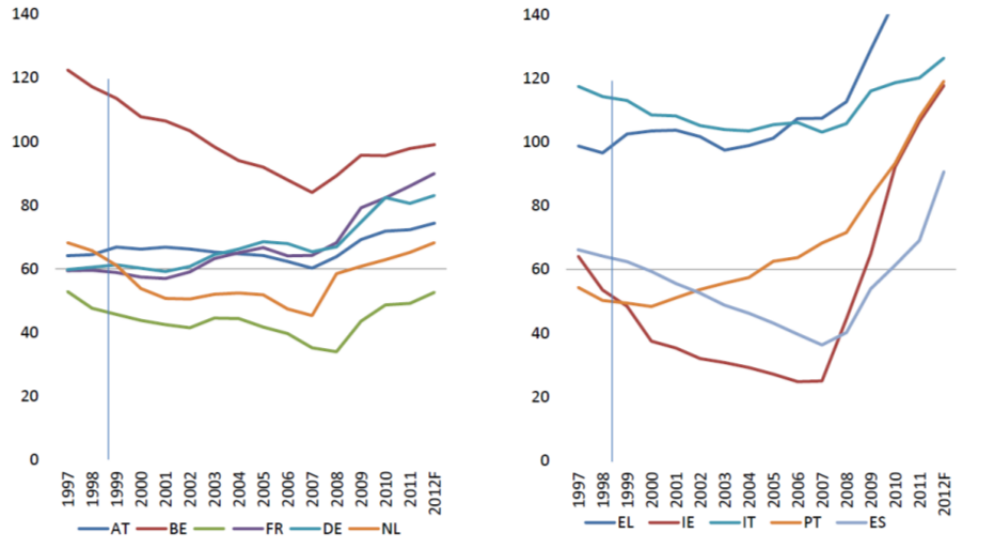
Historians will debate the exact triggers for the market's loss of confidence in the Irish sovereign. Even as late as April 2010, after the first sampling indicated the scale of the banking losses, sovereign spreads were little more than 1%. By November of that year (just a few weeks after the Deauville statement which persuaded the markets that private sector holders of euro sovereign debt would not be immune from loss-sharing) large banking outflows and spreads exceeding 5% made recourse to official assistance inevitable. (Figure 3 shows the plot with some relevant news stories flagged). Perhaps the most significant take-away from the sequence of spikes and troughs is the fact that some of them clearly relate to news that is country-specific, some of them to euro area general news. The same is doubtless true for all of the stressed sovereigns.

Figure 3: Irish 10-Year Sovereign Bond Yield Spread over Germany



Source: Thomson Reuters Datastream

Figure 4: Euro Area Countries: General Government Debt % GDP



Source: IMF WEO Database

Default risk vs devaluation risk vs redenomination risk

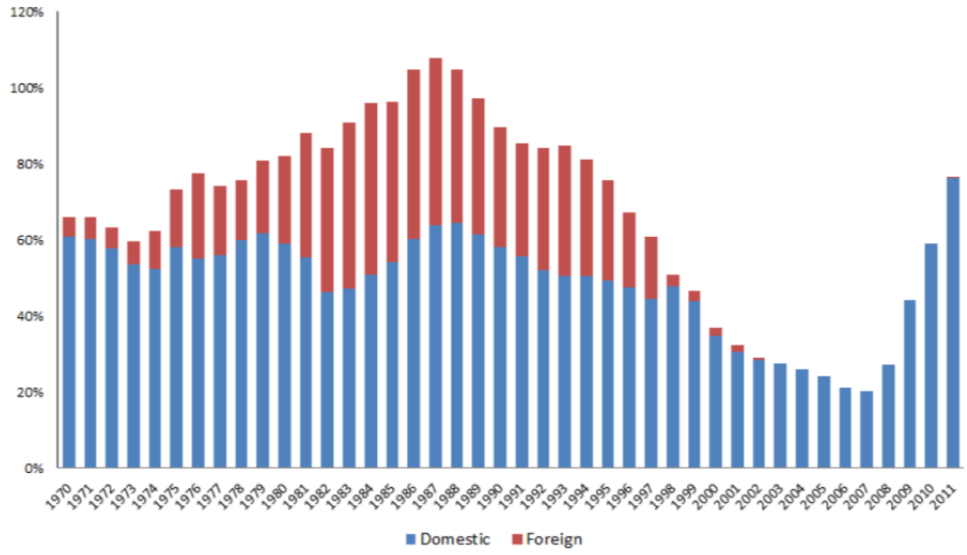
It's worth pausing to recall that raw sovereign spreads such as we are seeing today in the euro area are not remotely unprecedented in pre-euro history. On the contrary, they were the norm as is illustrated by Figure 1. The difference is that these spreads reflected a combination of default risk and currency risk. During the last fiscal crisis of the 1980s, Irish sovereign spreads also ballooned out. But that was for local currency-denominated debt. Eurobond borrowing by the Irish government remained at fairly tight spreads despite the high overall debt ratio (higher than today), and the fact that almost half of the national debt was denominated in foreign currency. The high spreads reflected devaluation expectations and currency risk generally. And there were devaluations, although less than was baked into the spreads – by between 250 and 300 basis points on average during the last 10 years of that ill-fated regime, the narrow-band EMS.

It is not that default and devaluation are close substitutes; not at all, and for several reasons. For one thing, default has potential reputational consequences for the issuer that are qualitatively different to those of devaluation. In addition, devaluation affects not only the international value of the government's debt promises, but also that of all other contracts denominated in local currency. As a result, depending on the speed of price-resetting (pass-through) it can affect competitiveness throughout the economy. These differences have not been sufficiently emphasised, I feel, in recent discussion.

As an example, I could mention the Irish devaluation of August 1986. The main goal of this important action was restoration of wage competitiveness, not a lowering of the real value of the local currency-denominated debt. (Indeed, I recall that some domestic policymakers were confused on this point and thought that the debt burden would actually increase as a result of translation effect on the foreign currency debt!)

Such currency risk can be so extreme as to make it impossible for the sovereign to issue any sizeable amount of local currency-denominated debt to international lenders. In the literature, such countries – all in the developing world (and not including Ireland, see Figure 5) – were said to have incurred "original sin". Happily, the number of countries incurring "original sin" has been diminishing in recent years. Instead, we have to acknowledge the emergence in market pricing of a new phenomenon, "redenomination risk".

Figure 5: National Debt of Ireland (% GDP)



How can we recognise redenomination risk? This is not straightforward, not least because the term could refer to a number of different scenarios. One suggested way of approaching the question is to use econometric estimates of the cross-sectional determinants of sovereign spreads for foreign currency-denominated borrowing to predict current spreads in stressed euro area countries: a positive residual might suggest a redenomination risk premium. Comparisons of current spreads of euro area sovereigns in euro and in foreign currency-denominated borrowings provide for an alternative approach. My own favourite approach is to look at the co-movement in the time series of euro area country spreads. Some of this co-movement can be attributed to fluctuations in market risk-appetite; the remainder could be interpreted as a system-wide redenomination premium.[2] This brief summary already suggests the complexity and ambiguity of some of the concepts involved and their measurement.

Evidently, redenomination risk, as imagined by market commentators, combines default and currency risk in a novel way not contemplated by the treaty that established the euro area. The ECB has made clear its determination to do what is necessary to preserve the euro and remove unfounded euro break-up premia in sovereign yields. The ECB's Outright Monetary Transactions (OMT), designed as a

[2] Panel regressions can, in principle, isolate co-movement from idiosyncratic, and general risk appetite (for example, proxied by spreads on non-euro risky bonds) from the redenomination premium.

backstop to inhibit negative self-fulfilling market dynamics, provide the necessary tools to deliver on that commitment. The programme does not go overboard in the direction of removing the incentive for governments to manage their finances in such a way as to recover and retain the confidence of the market, but it will ensure that disciplined governments will not have to pay spreads that could only reflect market concerns about a system break-up. As announced, the ECB will only buy bonds at the shorter end of the maturity spectrum, but the OMT can be expected to have an influence transmitted by market forces throughout the yield curve, and indeed spreads have tightened right across all maturities since the OMT was announced.

Still, it is not to be expected that the OMT will by itself restore the tight uniformity of spreads that prevailed for the first decade of the euro. Forcing such a tight uniformity would not be generally considered safe absent more reliable alternative mechanisms for ensuring disciplined fiscal policy in the countries concerned. More likely would be a potentially extended period of sovereign spreads that, albeit narrower than at their worst, remain material.

Sovereign spreads and the banks

That being so, we need to ask what are the consequences of these spreads for the rest of the economy, and in particular for the operation of the banking system. Regardless of the condition of bank balance sheets and profit and loss accounts, experience shows how hard it is for banks in a jurisdiction where the sovereign is under stress to access the money markets on the finest terms. In essence, the market fears that a stressed sovereign could *in extremis* reach for the banks as a source of last-resort financing – if necessary using national legislation to do so. From such a perspective, providers of funds to banks will tend to price in the possibility that, at the margin, they could end up as indirect providers of funds to a stressed sovereign. There are many examples in history of this happening, and the consequences for bank funding costs have often been severe.[3]

In other words, while we have all become sensitised to the pressure that socialised banking losses can place on the sovereign, markets are also acutely aware of the potential for damaging links in the other direction. Either way, there are consequences for the funding costs of both the sovereign and the banks.

Given the scale of banking in the euro area, even a relatively small difference in funding costs can be consequential. Once again, the Irish situation dramatises what can happen when the two-way feedback loop between banks and the sovereign causes a loss of access to risk-free rates. As is well known, the Irish banks have suffered severe loan losses in the aftermath of the bursting of the property price and construction bubble which they had so enthusiastically financed. Very sizeable capital injections (about 50% of GNP from the Irish government alone – a sum that proved too great to be financed without the protection of an IMF programme) have

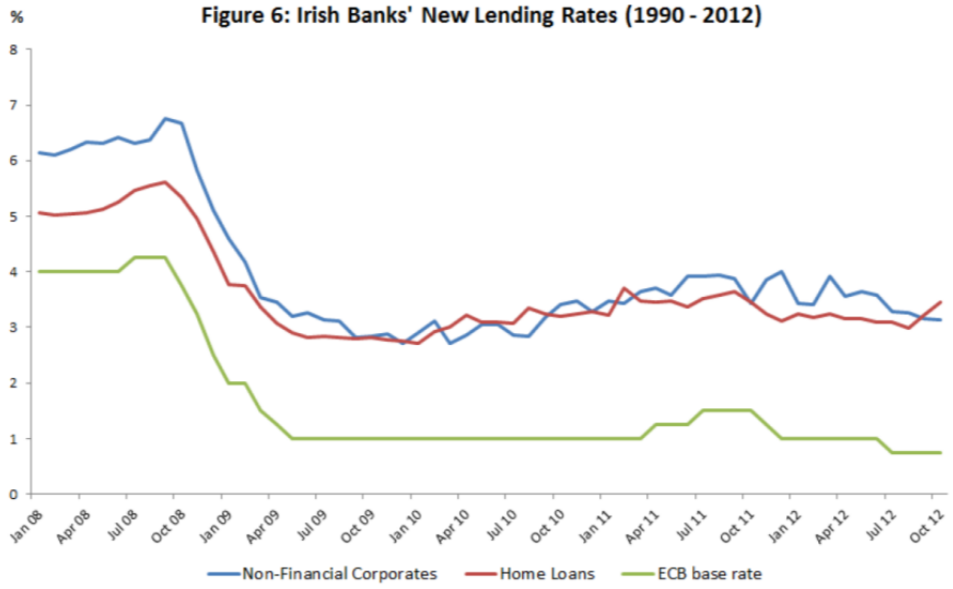
[3] On the other hand, a government will be loath to default on its debt if sizeable amounts of defaulted debt are held by the local banks. Testament to this is the track record of Lebanon, whose banks have tended to lend – I believe – a higher percentage of GDP to the government than in the case of any other country.

ensured that the Irish banks once again more than satisfy regulatory requirements, but their future profitability is constrained by the emergence and likely persistence of the sovereign spreads, and the knock-on effect of the spreads on the banks' funding costs.

Euro area risk-free rates are not now the most relevant indicator of the marginal cost of funds to the Irish banking sector. It is, of course, true that the Irish banks (like those in other stressed countries) have been drawing heavily on ECB refinancing facilities during the crisis, especially following the huge outflow of funds that occurred in early 2009 and again in the last few months of 2010. This access to refinancing has been vital to the continuing operation of the banking system, and it has come at the policy rate.

(Let me mention as an aside a curious feature of the current monetary policy environment in the euro area. The two key ECB rates – the main refinancing operations rate and the deposit rate – are 75 basis points and zero, respectively. Access to both the refinancing and deposit facilities are both close to all-time highs. But in practice, the bulk of the refinancing is going to banks in the stressed countries, while the bulk of the deposits are placed by banks in non-stressed countries. To the extent that the stressed countries have tended to have weaker economic performance during the crisis, this pattern might be considered paradoxical. But it is of course a reflection and a semi-automatic consequence of the fragmentation which has developed in the euro area. To be sure, the ECB policy rate is clearly below the marginal cost of funds in the stressed countries.)

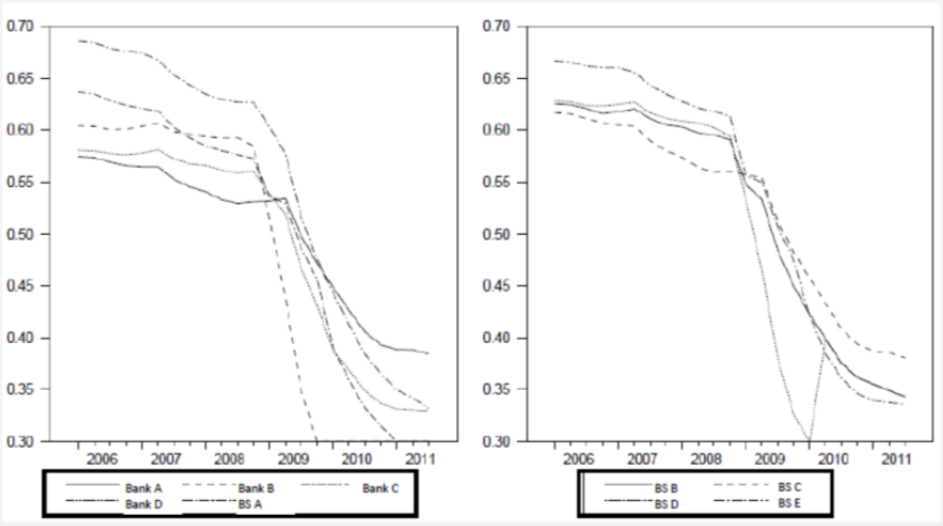
But access to ECB funds at the policy rate is limited by the availability of eligible collateral and the haircuts that are applied to such collateral (despite the relaxation of eligibility criteria). About 20% of the total financing of the three going-concern Irish-controlled banks comes from this source at present (16% of the balance sheet total). Competition for deposits therefore remains strong and rates high.



It's not just that higher bank funding costs will now be passed on to new borrowers, adding headwinds to the economic recovery, although that is certainly a factor. Indeed, the lower policy interest rates set by the ECB since the crisis began

have only been partly transmitted to borrowers in Ireland and in the other stressed euro area countries (Figure 6). (As is seen by the results of a recursive regression exercise, the pass-through from policy rate to Irish residential mortgage SVR rates has halved since the start of the crisis: see Figure 7.) Some of this can be rationalised as reflecting a higher credit risk-premium being charged by the banks, but some is also due to the higher marginal cost of funds.

Figure 7: Elasticity of Irish Variable Rate Mortgages to 3-Month EURIBOR (Recursive Estimates)

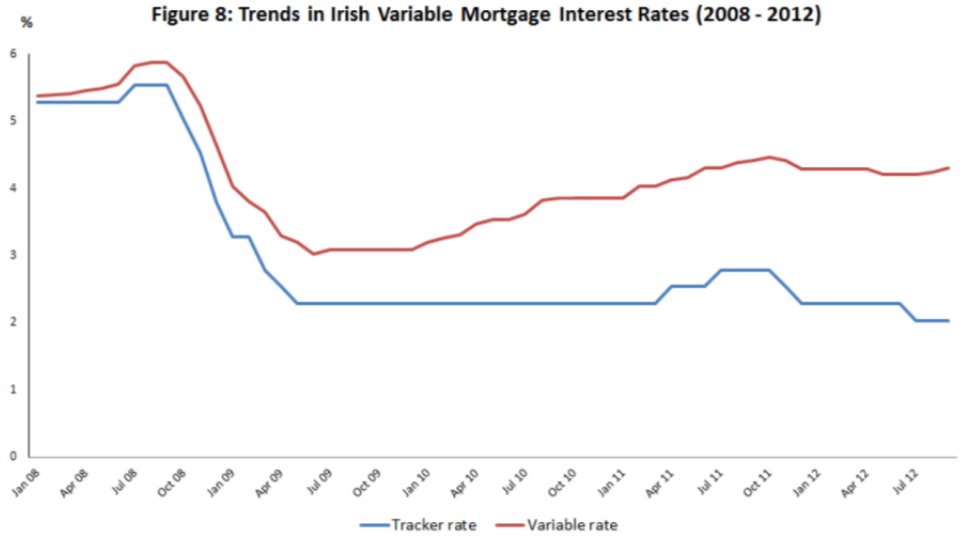


Source: Central Bank of Ireland Technical Paper (Goggin et al., 2012)

Worse still for the health of the banks, and their ability to contribute to the economic recovery, is the fact that they are still coping with the consequences of their marginal cost of funds having delinked so sizeably from the ECB policy rate.

These consequences arise because of the long-term mortgage contracts the banks made when they assumed that their marginal cost of funds would always remain close to the (risk-free) policy rate. Suffice it to say that a large block of residential mortgages was granted at interest rates that track the ECB policy rate plus a very low spread. These tracker mortgages, many of which have an average remaining maturity of 15–20 years or more, yield less than the marginal cost of funds (Figure 8 which is drawn on the assumption, not strictly valid, that the average spread of the trackers over policy rate was unchanged over time). In effect, by assuming that their cost of funds would not deviate much from the ECB policy rate, the banks exposed themselves to a very large "basis risk". In principle, they could escape this trap if there were a willing purchaser (public or private) with access to funding at a cost that is not contaminated by the sovereign stress. Until such a purchaser comes forward, the banks will have to continue to fund this portfolio at a loss, even on performing mortgages, whose effects will spill over onto their customers and their owners (not least the state).

Figure 8: Trends in Irish Variable Mortgage Interest Rates (2008 - 2012)



Source: Central Bank of Ireland

Conclusion

Irish sovereign spreads may no longer be bloated by redenomination risk, but at 300 basis points at the long end, they do seem to reflect a credit risk premium that is poor reward, so far, for what has been a sizeable fiscal adjustment effort.

Reflecting on where we have got to, it seems that there are distinct parallels with the fiscal crisis of the EMS period. As I mentioned, spreads (then reflecting devaluation risk) exceeded what would have been needed ex post to compensate for actual exchange rate movements by almost the same amount (250–300 basis points). Those spreads were then transmitted to the banking system too.

The Irish financial situation is relatively extreme, and as such illustrates clearly some of the key problems that have been faced also in other stressed parts of the euro area.

While it has delivered a much lower inflation rate, the euro is no longer insulating financial markets from the impact of excessive debt in member countries. The early insulation of the monetary transmission mechanism from fiscal problems of participating countries has worn through. The pernicious feedback loop from banks to sovereign and from sovereign to banks that re-emerged in the crisis remains strong and damaging.

Getting back to the "good" equilibrium will require a healing process that alleviates the market's fear of default. This will inevitably be a protracted process needing not only firm adherence to consistently disciplined policies but also the creation of institutions that can prevent future crises, or at least cope with them better if they cannot be avoided.

Do good sovereigns default? Lessons of history

Marc Flandreau[1]

Thank you Stephen, for the invitation. It is a great pleasure to be here, and since I am competing against all these nice desserts, I'm going to try and treat you, hopefully, with some sweets of mine. Let me begin with the straight question, which is: do good sovereigns default? and give you the straight answer, so that the suspense doesn't choke you, and it is: yes. Now the point is, what is the light that history is shining on that question? The political value of history can be difficult to recognize, as the following little anecdote, which I am going to tell you as a caveat on what you can do or can't do with history, reveals.

About 15 years ago, before there was something called the euro, there was a special issue of the journal Economic Policy, which you probably all know, in which I made a contribution on lessons from history. I thought that one thing that could be interesting to look at – since as you will remember, we had all these discussions of market discipline versus statutory rules, such as the stability pact – was the actual historical record of a system of fixed exchange rates, when there was no stability pact, and only market discipline. I thus set out to gather data for the late 19th century, focusing on European countries (this is the very data that Reinhart and Rogoff have used more recently in their acclaimed book), and I explored a number of features of debts and government borrowing rates, and one thing that was flying in the face was that during booms, discrimination by the market was not strong enough: basically the risk premia were there but really tiny and too discreet to encourage countries to make efforts. And when there was a bust, suddenly the markets were becoming really sensitive and were discriminating violently – but it was too late. And so that was the point I was making, and I was therefore concluding that you may not want to rely too much on the market and the market mechanism as a way of monitoring fiscal positions in the eurozone, because if you did that you might run into trouble. At that time, however, I did run into trouble, because the editors and the referees, who included the late Rudi Dornbusch, complained that part of my results were driven by but four countries, viz.: Greece, Portugal, Spain, Italy. Who cares about Greece, Portugal, Spain and Italy, I was asked? How could one draw meaningful inferences from these admittedly isolated cases? As you can see, the art of drawing historical inferences is a difficult one.

Seen historically, the question whether good sovereigns default is an intriguing one indeed, because if you go sufficiently far back in time – I have in mind here the late Middle Ages, the Renaissance and the early modern period – you generally come across sovereigns who face very high interest rates, and going by this yardstick it is very difficult to find a "good sovereign". In fact, back in those years the sovereign was the dangerous guy to lend to, and the safe loans were the loans to private corporations, private companies, merchants, cities possibly, and that was the norm, back then, a norm everybody knew about and understood.

Then came a number of changes that occurred gradually over time and which economic historians call better institutions: a broadening of the tax base,

[1] Professor of International History and Politics, University of Geneva.

improvement in fiscal governance, efforts to match new expenditures with new appropriations etc. Thus started a kind of revolution (a financial revolution) which was begun in Genoa and Italian cities and spread from there to Holland and eventually Great Britain and the rest of Europe in the 18th and 19th centuries, when gradually – at least in a number of countries, because you still need Greece for the fun and the excitement – the sovereign became the safest person or safest institution to which you would be lending.

Yet as this occurred the determination of what is a good sovereign remained a difficult problem. In fact, recasting the question a little bit, I am tempted to argue that the really important question isn't so much whether good sovereigns default, but who said they were good in the first place? That is the key question. Some examples will help and since I'm French, I can't resist talking about Russian bonds, a story which you probably all have in mind, and I hear that in your laughter. The way we have been used to telling that story is that there were political reasons why French leaders wanted to trust Russian loans, and as a result there were these large, misled investments by the French people, and it all ended very badly after 1917.

But actually when you look at the record more carefully, it's even more exciting, because the way that Russia was constructed as a safe risk in the late 19th century was way more "scientific" and less political than you would think. In particular there was the work of one French leading bank – Crédit Lyonnais, the largest continental bank by assets or capital. Crédit Lyonnais, a universal bank, had this amazing research department and they had developed a whole technology for rating countries. They didn't give A's or B's but marks, like 1, 2, 3, and Russia came up with their computation in the top group. And the reason it came in the top group was because in terms of the sustainability indices which the dedicated economists at Lyonnais computed, Russia was doing very well.

And it was doing very well because Russian loans had been exclusively, exclusively – unlike the historical British debt, which was a military debt – issued for industrial purposes: railways, mines, infrastructures. And these debts were, as result "re-productive" (as people called them): they yielded a revenue that accrued to the government-proprietor. Russian railways did not only feature on the liability side: they were on the asset side too. And in the 1890s the Russian economy was expanding and using its infrastructures for that, and revenues were expanding when the cost of servicing the bonded debt was fixed, so you were looking at a situation where eventually the net public debt ratio of Russia would be zero. At the end of the day, Russia was somewhere between the US and Japan in the grading system of Crédit Lyonnais. This was, by any measure, a good sovereign.

Then comes 1904–1906, a war with Japan, and suddenly Russia learns that its fleet has been destroyed by this little country over there in the Pacific. Political trouble ensues, and these gentlemen who call themselves "Bolsheviks" (unlike the nihilists, nobody had heard of them before), they go out on the Prospekt Nevsky in St Petersburg, and they say, "These debts are odious debts. When we take power, we won't pay them". There goes the good sovereign.

All of a sudden people were looking at a very different story. One minute ago, you were considering a reliable sovereign, by any measure, not a serial defaulter, for Russia had not defaulted in the past, a sovereign with a very sound debt by any of the popular economic computations of the time, but there is political change and suddenly you have to re-think the whole thing.

What is quite interesting and suggestive is that this was when the collusion between the French financial system and French politicians took place and you can see why. On the one hand, French politicians wanted to consolidate their alliance with Russia. On the other hand, the banks that had sold the bonds of the formerly good sovereign were really worried. This was when propaganda was begun, with people being told that Russia was very safe, that there was a little problem with the Bolsheviks, but, you know, that would be okay, the situation could be handled, and in the end things would be sorted out.

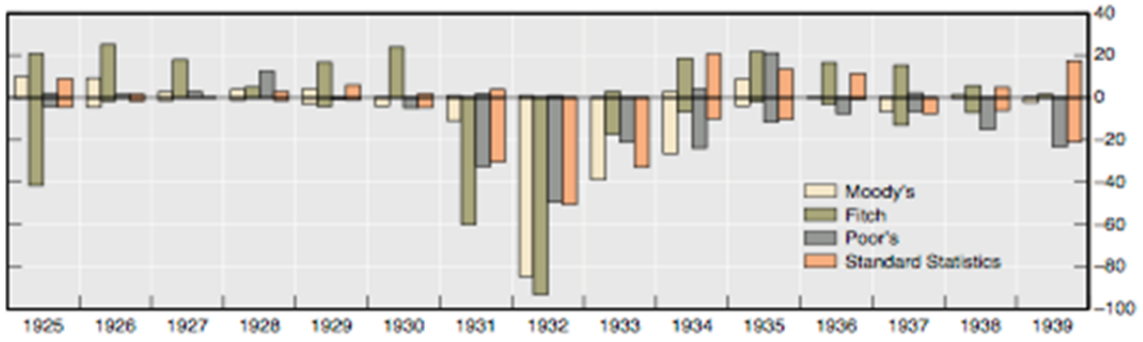
Embarrassingly, such instances are far from unique. Another interesting case, which is useful to combine with the previous one, is what happened in the interwar period, with the foreign debt crisis, when, after 1931, lots of countries in the world started defaulting. Just like was the case for Russia in my previous example, most of the defaults were occurring in the investment grade category, if you use the grades provided by US rating agencies, which had started rating foreign debt after 1918. Most of the defaults taking place at that stage in 1931 were taking place for securities in the four top notches which conventionally define investment as opposed to speculation. Thus these defaulters were really the good borrowers, if you will. Consider Fitch for instance. In 1931 16% of what they have identified as investment grade is experiencing default, against (curiously!) 0% of the speculative grade. Moody's were doing not much better, with 16% of investment grade defaulting, but at least they did not get the ranking totally wrong, since 17% of the speculative grade securities were going bust, and if you look at interest rates and the yield at which these countries had been borrowing before, they seem to suggest that the market was fine with a lot of those borrowers, and considered them as very safe entities.

An interesting difference is between the reaction of credit agencies and Crédit Lyonnais. In the middle of the Russian confidence crisis, Crédit Lyonnais told investors, "Oh, Russia is really safe. What we told you was correct". And they kept lending to Russia, and things were sorted out for a while at least. On the eve of WWI the Russian economy was booming again and it took the First World War and a few other things occurring a number of years later for default to eventually come. But in the case of the interwar crisis, rating agencies just ran away. When trouble started, they began downgrading massively. In the case of Moody's, for instance, in one week, after the sterling crisis in September 1931, 80% of the sovereigns it rated were being downgraded. When you look at the profile of sovereign upgrades and downgrades by Moody's, you have a line that is very similar to what we have seen in the most recent crisis. Suddenly, beliefs are updated and it often means massive downgrades. It's not who you are, it's who makes your reputation.

I think that one important factor explaining the difference is that in one case one is dealing with a financial institution, which had its reputation at stake somehow, but more fundamentally, which had the means of acting on the market. In other words, because Crédit Lyonnais was able to lend to Russia, it was fabricating its credit in not exactly the same way as a rating agency is. At the same time they were telling customers "Don't panic, Russia is fine", the bankers were trying to do something about it. But in the case of the rating panic of 1931, what could a rating agency do except cover its back and run with the herd? The massive downgrades by Moody's and others in the autumn of 1931 were essentially telling people: "We can't do anything about the stampede, so let us just give you the temperature. People are panicking, and we register that". This is what they said because they could not act on the situation. And this illustrates what I mean when I say that the question is not who are the good borrowers, but who says so?

Upgrades and downgrades as fraction of outstanding ratings[1]

In per cent



Positive bars indicate upgrades, negative indicate downgrades.

Source: Authors' computations.

Note: an upgrade (resp. downgrade) measures any upward (resp. downward) revision occurring between previous year's manual and current year's manual. Publications dates are: January (Moody's), March: Poor's; August (Fitch) and December (Standard Statistics).

Source: Flandreau et al (2010).

Now let me elaborate a little bit on this. I think one illuminating episode where you can see these mechanics at work is during the controversies that took place in Britain during the French wars and that are known through the works of Ricardo and Thornton. During those years, Britain is adding on to its debt, and the debt-to-GDP ratio of Britain is something like 250%. So this is obviously very big, the country is probably the mostly heavily indebted in the world during those years, and yet a number of people are thinking that this is comparatively a safer type of debt, because unlike what is happening on the Continent, where armies are roaming and governments defaulting, at least in Britain the political system is supposed to hold, and people are dumping continental securities, such as Dutch securities, and going to British securities as a safe haven.

But the war continues and Britain keeps borrowing, and it needs a mechanism to address that. The mechanism is the Bank of England. What the Bank of England is doing is providing the British Government with a put, a put option that if the market is not mopping up new issues, then the Bank of England is going to take them up. Ricardo, as you may remember, was very upset with this, perhaps because that was shocking his theories and perhaps because he was shorting the British debt and did not like the Bank of England put. This is the context in which Ricardo produced this story that the bailout of the British Government by the Bank of England was a very bad thing, especially because in return for the help the Bank of England was receiving privileges. The arrangement as it was taking place was one where on the one hand the government was benefitting from the put, but on the other hand the Bank of England was benefitting too. For instance, it was not bound to convert its notes into gold, and as a result, this gave the Bank of England more room for printing money, buying more British debt etc. Of course, to keep everybody happy, the Bank of England was also generously extending credit to support the economy, and calling this the "real bill doctrine" (according to which no good bill goes undiscounted). The yield on British government bonds was going down, the dividend of the Bank of England was going up and the result looked like a "win-win" game.

This was bound to start a controversy that would only be gradually resolved (it is disputable that it is resolved as of the day of this writing!). One thing that soon came to be understood however was that for this arrangement to work, one needed to make sure that some institutional fixes be considered: for instance, the Bank of England could not be playing this game forever, because there must be a stage where the central bank put would conflict with the mandate of monetary stability – a stage where some unpleasant arithmetic would set in and the next minute one would be looking at a hyperinflation. And indeed several countries on the Continent did experience hyperinflation in the subsequent years as a result of not cutting a proper deal between the central bank and the government. In other words, who is telling you what is a good sovereign, in this case, is the central bank. But the important element is not the central bank as such, or the central bank's put. Rather it is the nexus of contracts that make the pledge of the central bank credible and successful – or not.

This focus on the central bank as a producer of safe assets can be elaborated upon. Someone mentioned this morning that there is a demand for safe assets. How this demand is met is obviously an important issue. Britain and its Empire are interesting to look at from this vantage point. If you remember what Bagehot argued in Lombard Street, when he discusses how, during a crisis, the Bank should lend on the good collateral, he emphasized two types of such collateral: first, the Consols (British Government debt) and, he adds, the securities of the "strange Empire of India". And one reason he writes about the securities of the strange Empire of India is that, as you might remember, a few years before he wrote, in 1857 in India, there was an uprising called the Sepoy Mutiny which led British authorities to intervene directly in India, whose management was taken over from the East India Company. One wouldn't think of India as the most obvious example of the good sovereign: not really a sovereign and probably not so good.

But a mix of institutional factors made the securities of the strange Empire of India legitimate instruments for LLR operations. The British State was providing a backing and thus fabricated safe securities. I suggest that in effect, a process developed in the later part of the 19th century, where on the one hand there was a demand for safe securities, and on the other hand, the expansion of the British Empire and the expansion of borrowing by British colonies was meeting that demand by supplying, by fabricating, if you will (structuring would be the technical word) safe sovereign securities that could be used as collateral.

Now of course this arrangement ran into all kinds of difficulties, including problems of illiquidity. For instance, as it was, in the early 1890s, there was an Australian crisis originating in Australia's banking system, and Australian banks dumped their government securities as an attempt to shore up their liquidity, in turn causing doubts about colonial bonds. Some money funds operating on the colonial market went bust, even though they were holding in their portfolios these safe securities. This brought again the Bank of England into the middle of the field and the Bank of England handled the matter by helping with the liquidation or funding of the collapsing investment trusts. This is how the Bank of England became an imperial institution, by providing back stop facilities and deeming "safe and sound and good government" colonial governments to which it was now tied. Of course, it could only do that if it had a number of institutions to handle the resulting moral hazard problem. To make a long story short, the arrangements depended on the political status of the colony and gave the Bank of England authority in terms of supervising, managing, and influencing local financial policies.

Again, as we can see, the critical point appears to be the institutions set up to handle potential problems, and these institutions are really part of the question of distinguishing between what is a good sovereign and what is not. Of course when you start thinking along those lines the way you design new innovative, effective institutions is going to be very delicate, and the politics of it are going to be very difficult – the Ricardo controversy over the role of the Bank of England is a good illustration.

So let me give you one example that I think captures a lot of the underlying tension. During the 1890s, following this Australian crisis, there was a growing concern among colonial leaders that they were sound, but that their securities were not liquid so that as a result, they could run into a number of troubles. They wanted some security from the British authorities – essentially a mechanism that would foster the liquidity of their bonds. The scheme that was invented by the Colonial Secretary Chamberlain was the so-called "colonial bond". Essentially the colonial bond was an anticipation of the euro bond. The idea was that you would have the Colonial Office going on the market and issuing bonds to fund a pool, and then single colonies would be able to draw from that pool. Instead of having an Australian and a New Zealand and a Canadian debt, you would have a colonial debt: de facto federalization of colonial debts. And Chamberlain was very excited about this scheme, and he pushed it in various places, and obviously a number of colonies were very excited too, so they pushed it as well.

Now of course you can readily feel where this story is heading. The Colonial Secretary – Chamberlain – met his nemesis the British Exchequer. The Exchequer, if you want to stick with the metaphor of the euro bond, was playing the role of the German Government. And the Exchequer was saying "Nay!". First, because it feared that if the colonial bond was really successful and became really liquid and all, it might drive out Consols as an instrument of choice, and this the Exchequer could not let be. Another risk was colonial moral hazard if suddenly the colonial bonds were "too" liquid and all. And thus the status quo prevailed and colonial bonds never came into being. The solution had the advantage of keeping with the previous policy of producing safe assets that could be used as collateral, but on the other hand, making sure that those safe assets wouldn't be so liquid that those issuing those assets would escape Treasury control, so that the tail would eventually wag the dog.

It is time for a conclusion. One is that you can see why historians can't believe that good sovereigns never default. There is no such thing as a perfectly safe sovereign. Nothing is perfectly safe and sound, trouble comes, and opportunity knocks. If that were all, however, history would be a dismal science. But there is more: we perceive in the historical process of financial evolution conspicuous efforts, not at spotting eternally safe assets, but rather at producing such assets. In fact, one thing I take from my story is that the whole development of modern capitalist institutions can be seen as a succession of attempts at addressing the problem of the production of safe assets. As I mentioned, the development of the central bank, the fact that the central bank is providing a "put", or the political arrangements between an imperial country and its colonies can be seen as being as many aspects of the attempted production of safe(r?) securities.

This narrative puts the political process and political or institutional incentives at the centre of the stage. One feature that emerges clearly from the French, US and British examples is the role of financial power. In the case of the US rating agencies in the interwar period we have seen the effects of lacking a real power to act. The

implication of this is that politics should not be seen as an exogenous problem to the financial system – something that should be circumnavigated, circumscribed, circumvented. Because the Bank of England, unlike a rating agency, when trouble was coming knew it could rely on the strength of the British State, it was better equipped to deal with liquidity problems in Indian or Australian bonds. Mandates were given and made contractual. Expectations were formed on those mandates. It is inconceivable that faced with a problem, British authorities would have said: "I cannot do anything about that. I'm just giving you an opinion". An opinion that is not backed by some kind of power has little value. And a power that is not rooted in some form of responsibility is of little use. If we proceed that way, the really important question to focus on is the institutional transformations that will be up to the challenges that the current crisis has revealed.

Thank you very much.

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Rating agencies and sovereign risk: Moderator's introduction

Carlos Hamilton Araújo[1]

Good afternoon everybody. Let me start by thanking the organisers, thanking the BIS for inviting me to be here. For me it's a pleasure to attend this event and learn; for me it's an opportunity to learn a lot on so many interesting issues.

Broadly speaking and according to the literature on the subject, sovereign risk, or, as many prefer to call it, political risk, is expropriation by a sovereign state. The most common method of expropriation is inflation. Perhaps less common is pure repudiation. I guess that in the late 1970s and early 1980s, when academics like Jonathan Eaton and Mark Gersovitz extensively wrote about sovereign risk, they essentially had in mind examples of expropriation coming from emerging economies. It's possible that these authors were surprised by the developments observed in mature economies over the last five years or so. Anyway, today I think everybody or almost everybody is aware that political risk is all over the place, no matter the stage of the economy in terms of development.

In this, let me say, new world, rating agencies have put major AAA-rated sovereigns on notice that they need to bring their finances onto a more sustainable path to retain those ratings. Downgrades of the United States and of France have followed.

In this panel, we may get answers to or insights into several interesting questions. For example, do sovereign ratings, like corporate ratings, have a stable relationship to probability of default? Do or should the ratings of the US, UK and Japanese sovereigns benefit from their having their own central banks? What do the rapid downgrades of Korea in 1997 and, more recently, of Greece, Ireland and Portugal, imply about sovereign ratings transitions? How does a sovereign downgrade affect economy-wide borrowing costs?

To answer these four questions and to provide us with many other insights, we have on this panel four specialists. We have Richard Cantor from Moody's, as well as John Kiff from the International Monetary Fund, Andrew Powell from the Inter-American Development Bank, and Donato Masciandaro from Bocconi University.

So without delay, I ask Richard from Moody's to stand.

[1] Deputy Governor for Economic Policy, Central Bank of Brazil.

Ratings and regulation

Richard Cantor[1]

Thank you, Steve, Bob and the other BIS organisers for giving me an opportunity to share some thoughts about sovereign credit ratings, and about the interplay of regulation and the credit ratings industry more broadly.

For a long time now, I have been observing the credit rating industry and contemplating its regulation and role in the financial markets. In 1994, while at the Federal Reserve Bank of New York, Frank Packer and I wrote an article identifying what we perceived to be a structural problem in the industry and a way to fix it.[2] At about the same time, Moody's was independently communicating similar views on the same topic.[3] As there was a coincidence of views, it was perhaps unsurprising that I ended up joining Moody's in 1997.

The adverse consequences of regulatory reliance on ratings

Our main concern was a disturbing trend towards the increasing use of ratings in regulation and we put forward the obvious recommendation that the trend be reversed. The growing use of ratings in regulation had given rise to three potentially adverse industry dynamics: (i) the substitution of regulatory demand for investor-driven demand for ratings, (ii) the growing perception that ratings were something more than an opinion as a result of their official recognition by regulators, and (iii) a vicious circle of intrusive regulation to induce ratings and rating agencies to behave in line with regulatory needs, potentially changing the nature of ratings. My discussion today will focus on the interaction of these dynamics, the observation that they remain in play today, and an exhortation to regulators that they should rapidly seek to address the root cause, the continued mechanical use of ratings in regulation in various jurisdictions.

First, the use of ratings in regulation has the potential to disturb the industry's competitive dynamics by introducing a dimension to the demand for ratings that is independent of rating quality. Debt issuers historically sought ratings from credit rating agencies because such opinions were the most respected by investors. Although there have never been more than three or four major rating agencies at a time since 1920, a large number of additional rating providers have always been active at the competitive fringe of the market, standing ready to supplant the larger

[1] Chief Credit Officer, Moody's Investors Service.

[2] R Cantor and F Packer, "The credit rating industry", *Federal Reserve Bank of New York Quarterly Review*, vol 19, no 2, 1994.

[3] Moody's has been a vocal opponent of the use of ratings in regulation since at least the mid-1990s. For an example of a statement of Moody's views, see Moody's letter to the SEC in response to its "Concept release on rating agencies and the use of credit ratings under the Federal Securities Laws", 28 July 2003.

incumbents if the smaller players could convince investors that they produced higher-quality ratings.[4]

The integrity of these competitive dynamics, however, was threatened by the growing use and importance of ratings in regulation. First, as Frank Packer and I – and Moody's – warned, the use of ratings in regulation introduces a source of issuer (and investor) demand for ratings that is independent of ratings quality; there is a risk that the demand for ratings quality is supplanted by a demand for products that are rated sufficiently high to meet a regulatory threshold.

Second, with official recognition of rating agencies and their ratings, there is a legitimate concern that investors may become less diligent in their own underwriting of individual credit risks and in their own evaluation of the reliability of ratings from different credit rating agencies. Interestingly, to date, little evidence has been put forward in support of this hypothesis. In fact, a broad survey taken shortly before the onset of the financial crisis reveals that very few asset managers and pension fund managers in either the United States or Europe have cited the use of ratings in regulation as a primary reason for the use of ratings in their bond portfolio investment guidelines.[5] Moreover, it is my understanding that virtually every large asset manager in the world has its own extensive credit department and assigns its own internal ratings to its large credit exposures. Nevertheless, it is clear that regulatory reliance on ratings increases the perception that some investors may use ratings to the exclusion of their own credit analysis.

Third, the regulatory use of ratings creates an adverse industry dynamic in which the ratings industry becomes increasingly regulated, threatening the independence of rating agency opinions, discouraging investors from undertaking their own credit assessments, and reducing investors' independent assessments of rating agency quality. Why? If some ratings are going to be officially recognised by regulators, there must be an objective standard by which regulators can determine whether a rating agency's ratings and processes can be acceptable for regulatory purposes. However, the establishment of such standards raises a number of problems. Objective criteria against which to judge the quality of ratings are widely recognised as being difficult, perhaps even impossible, to establish.[6] Instead of basing official recognition on a comparison of ratings performance, regulators inevitably have relied heavily on regulation of the ratings process, and by doing so,

[4] While the dominant business model with the industry is one in which the issuer pays for the ratings, issuers have historically been only interested in ratings that were valued by investors; issuers had good reason to eschew ratings from agencies with reputations for inflated ratings. The importance of reputation for ratings demand and the contestability of the market have been demonstrated repeatedly. In mid-1980s, the predecessor of today's Fitch Ratings essentially went out of business due to a loss in issuer demand for its ratings as a result of investors' perceptions that those ratings were inflated. Today's Fitch is a completely different company, which set out in the late 1980s to convince investors that it produces high-quality research and ratings, and thereby to generate issuer demand for its ratings. Moreover, in the mid-1990s, Fitch was able to acquire Duff & Phelps, another rating agency where demand for ratings was waning due to concerns about its ratings quality.

[5] See, R Cantor, O Ap Gwilym and S Thomas, "The use of credit ratings in investment management in the U.S. and Europe", *Journal of Fixed Income*, 2007, pp 13–26.

[6] The only reliable test of rating quality is to compare long track records of different rating agencies involving very large data sets of ratings on common issues and issuers, observed at the same points in time. Ratings assigned to different issuers, in different industries, and in different regions cannot be directly compared because credit shocks occur frequently across industries, regions and time and tend to dominate performance measures.

they have run the risk of intruding on the formation, communication and timing of the ratings opinion itself.

Worryingly, there would also seem to be a tendency on the part of regulators to also seek to substitute their own credit views for those of the rating agencies. That is to say, requirements have been imposed by regulators that rating methodologies include certain inputs. As a result, regulators are replacing an industry dynamic in which investors select among rating agencies based on their perception of the relative quality of their ratings with one in which regulators treat rating agencies as equivalent as long as they follow a particular set of processes that may have little relation to ratings quality. Rating agencies risk substantial sanctions if they err in following these processes, irrespective of their ratings performance.

Such an environment discourages attempts by rating agencies to improve their analytical approach or to compete on ratings quality, because as long as they follow the set procedures their ratings will be used for regulatory purposes. More problematic still, the environment could be viewed as penalising independent rating opinions because rating agencies can reasonably expect that their rating processes will draw additional regulatory scrutiny if they issue politically controversial rating opinions.

Progress on reducing regulatory reliance outside the United States has been limited

I have revisited what is likely very familiar ground for this audience because reducing mechanistic regulatory reliance represents a critical step for the credit rating agency industry and for the broader market. And while the Financial Stability Board has strongly made this recommendation, and the United States has done a very good job of removing the use of ratings in regulation fairly widely, it seems as if the Basel Committee lacks a plan to achieve similar results. Moreover, some of the regulatory developments occurring now in Europe might be seen by some as strengthening the role of ratings in regulation over time.

An aside: what is the impact of credit rating changes on CDS spreads?

There's a lot of passion around the topic of sovereign ratings, with good reason. From an academic perspective, however, the interesting questions about sovereign ratings are the narrower, more technical, and less political ones. In terms of power, the IMF and others have noted that sovereign credit ratings have proven roughly as predictive of defaults as have corporate credit ratings. Rating agencies have achieved this accuracy while maintaining sovereign ratings that are generally more stable than corporate ratings – and of course much more stable than credit risk assessments implicit in the market prices of sovereign debt.

There remain some open academic questions about the impact of rating actions on market spreads. Among them, do rating agencies' sovereign rating actions influence credit spreads and, if they do, by how much? Do they increase or

dampen market volatility? The other members of this panel have conducted research on these topics, so I will touch on them only briefly.

If spreads are influenced by sovereign credit ratings but the impact follows from investors' reappraisals of a sovereign's credit risk in the light of the rating agency's rating rationale – ie a commentary shared by the rating agency and the investor – I would imagine that most people would be comfortable with the role that ratings are playing. But to the extent that rating changes impact credit spreads because of investors' mechanistic uses of ratings, then I think we would all agree that we have a potential source of market inefficiency.

Now, where might there be such a mechanistic use of ratings? It is very uncommon among sovereign investors,[7] although there still may be areas where you see such a reliance on ratings on the regulatory side. In general, if you survey investors, you find that institutional investors and large investors do not employ ratings in a highly mechanistic way There may be situations where, if an issuer's rating falls below a certain threshold, an asset manager would be expected to review the credit and possibly ask the end investors whether they want to continue holding the credit or not. But it is very rare to find asset managers who simply must sell a bond when an issuer is downgraded; certainly, this is the case for sovereign bonds.

On the regulatory side, however, there remain pockets where sovereign credit ratings are used in a mechanistic way. Managers of central bank reserves, for example, may be uncomfortable making politically awkward independent judgments on sovereign credit quality.

In the exhibit below, I present a summary slide from our latest sovereign rating change event study.[8] Here we indicate what happens on average to CDS spreads when there is a change in a Moody's, S&P, or Fitch sovereign credit rating, outlook, or watch listing. This is a standard event study chart, detailing what happens on average around positive and negative credit events. If you follow the event study literature on corporate credit ratings, you will recognise that the results for sovereign credit ratings are virtually the same as those for corporate credit ratings.

Positive rating actions have no observable contemporaneous effects, that is there is no particular trend in spreads around the time of these rating actions. For negative actions, there is perhaps a small spread change around the date of the rating action, but nothing particularly impressive. There is certainly a trend of spreads rising both before and after the rating action, suggesting the hardly surprising result that negative rating actions are sometimes taken during periods in which the market and rating agencies are learning new adverse credit information about the sovereign.

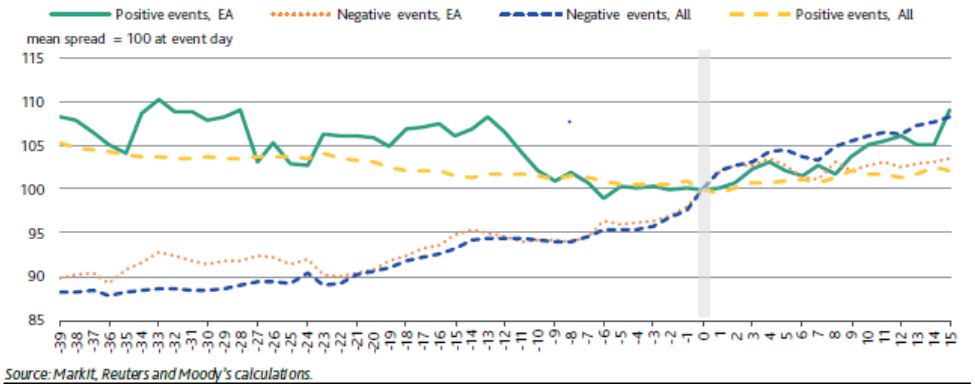
Note that none of these studies control for other credit events that may be affecting the sovereign might on or around the date of the rating action; that is, the data is contaminated from an event study point of view. For example, on the days when Moody's sovereign rating actions were reported by some observers to have

[7] There were reports that some investment guidelines in US bond funds called for investment in US government debt only if it carried both an Aaa rating from Moody's and an AAA rating from S&P. However, upon S&P's downgrade of the US sovereign, fund managers were able to obtain permission to relax these guidelines within 24 hours and there was no forced selling of US debt; in fact, spreads on US debt fell around the time of S&P's downgrade.

[8] "The price impact of sovereign rating announcements", *Moody's Special Comment*, 20 August 2012.

had the biggest impact on the market, there was also rioting on the streets of Athens and statements by various European officials that the EU should not provide financial support to certain European sovereigns. On days like this one, it is very hard to disentangle what causes spreads to move.

Mean spreads by type of rating announcement



Source: Markit, Reuters and Moody's calculations.

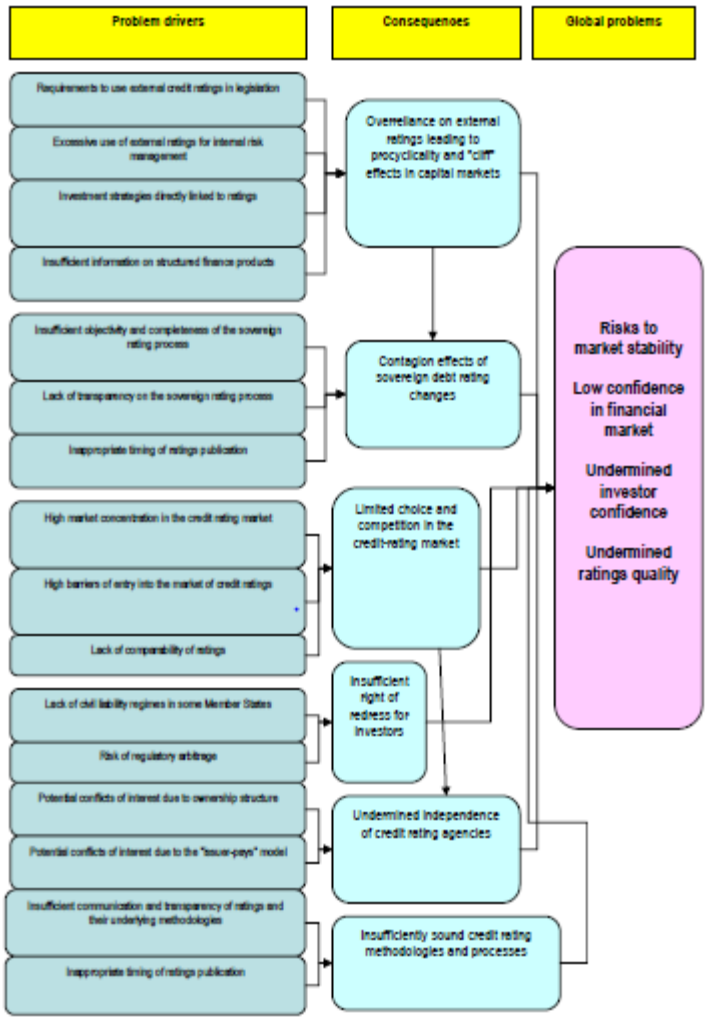
In any event, the spread changes associated with rating actions are clearly very modest. People interpret this data in multiple ways. Some say this data confirms their view that sovereign rating changes are irrelevant, because, in the case of sovereigns, all relevant credit information is public and widely analysed. Moreover, ratings aren't used mechanistically in the sovereign area, so why should there be an effect?

Others interpret this very limited price impact for sovereign rating actions as evidence that rating agencies have been successful in transparently communicating their methodologies, research and, signally, where ratings are heading. In this latter case, it can be argued that, on the day of the rating action, the real news is not the action itself but the other information embedded in the agency's press release, which signals the likelihood of further positive or negative actions thereafter. If you were to ask me what direction I expected sovereign CDS spread to move on the day of a Moody's rating action, I wouldn't be able to tell you until after I had read the press release and reviewed this information.

CRA3 and additional regulation of European sovereign credit ratings

As I mentioned earlier, one round of regulation frequently gives rise to another without a clear end in sight. After two rounds of legislation in the United States, ending in Dodd-Frank, the EU has now completed its third round of regulation within as many years. CRA3 was designed to address the perceived "problem tree" presented below.[9] The interplay between sovereign credit ratings and credit markets therein described probably reflects more the heated emotions around the topic than cold science.

[9] "Executive summary of the impact assessment accompanying the documents, proposal for a regulation amending regulation (EC) no 1060/2009 on credit rating agencies", *European Commission Staff Working Paper*, 15 November 2011.



Among the many new requirements laid out in CRA3 with respect to sovereign credit ratings, rating agencies will have to pre-commit to a schedule of ratings announcements, at most three per year for unsolicited sovereign ratings, so limiting their opportunities to comment. Moreover, sovereign rating actions can only be released after the sovereign has had the information for a full business day. While this added time will give the sovereign more opportunity to prepare its response, it will further compound the difficulties sovereigns have had in the past of keeping that information from leaking. Accompanying each rating action, rating agencies will need to present a detailed report containing many predetermined features.

I note that the report must comment on eight specific factors: "per capita income, GDP growth, inflation, fiscal balance, external balance, external debt, an indicator for economic development, an indicator for default". Frank Packer and I wrote a paper in 1996 that lists these same eight factors in the same precise order, word for word, without a single letter changed.[10] Thus, EU regulation now requires all rating agencies to give explicit public consideration for a backward-looking framework, presented in a 15-year-old research paper by two economists who, at the time, knew virtually nothing about sovereign credit risk.

[10] The factors appear on page 40 in R Cantor and F Packer, "Impact and determinants of sovereign credit ratings", *Federal Reserve Bank of New York Quarterly Review*, October 1996, pp 37–54.

The most positive aspect of CRA3, in my opinion, is a plan to establish at some point in the future a European agency to cover sovereign ratings. Perhaps when that plan is realised, regulators will be more comfortable in eliminating their reliance on private credit ratings and in scaling back some of the less productive industry regulation.

Sovereign credit ratings: help or hindrance?

John Kiff[1]

Credit rating agencies have attracted renewed attention following the sharp downgrades of structured credit products in the wake of the US subprime mortgage crisis and those that recently accompanied the weakening in some sovereign balance sheets. For the most part, this attention reflects the myriad ways in which ratings are hardwired into the financial system, a theme that will be discussed below. Before getting to that, however, it is important to understand what credit ratings are and what they are not.

First, it should be acknowledged that ratings serve useful purposes. They aggregate information about borrowers, thus facilitating access to funding, and adding liquidity to markets that would otherwise be illiquid. For example, ratings were a key driver in the development of structured credit markets. And ratings have proven to be fairly accurate measures of relative corporate and sovereign creditworthiness. For example, all defaults of sovereigns rated by Standard & Poor's since 1975 were rated non-investment grade one year prior to default.[2]

Ratings measure the relative (not absolute) creditworthiness of publicly issued debt obligations

Sovereigns are typically deemed to default when they fail to make timely payment of principal or interest on, or offer distressed exchanges for, their publicly issued debt. Default events do not include failure to repay debt owed to other governments and official creditors (eg the IMF and World Bank). Hence, since 2000 only 10 sovereigns have defaulted according to Standard & Poor's. This compares with 33 sovereigns rated by the credit agency that were in default by a broader definition. This is an important point for potential creditors within the official sector, for whom ratings may not be so relevant.[3]

It is important to emphasise that ratings are not intended to measure absolute creditworthiness, although many implicitly assume they do. For example, Basel II ratings-based standardised risk weights are based on mappings into specific three-year default probabilities (AAA/AA to 0.10%, A to 0.25%, BBB to 1.00% etc).

[1] International Monetary Fund. The views expressed herein are those of the author and should not be attributed to the IMF, its Executive Board, or its management.

[2] The Standard & Poor's and Fitch rating scales start at AAA for the highest-quality credits, with the next highest grade being AA, stepping down to A, BBB, BB, B, CCC, CC and C in increasing probability of default. For the sake of more granularity, in between these grades are notches. For example, the BBB grade is broken down into BBB+, BBB and BBB– in increasing probability of default. Ratings from AAA to BBB– are considered investment grade. The Moody's scale is similar, with its investment grade ratings running from Aaa at the top down to Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa3, and Baa3.

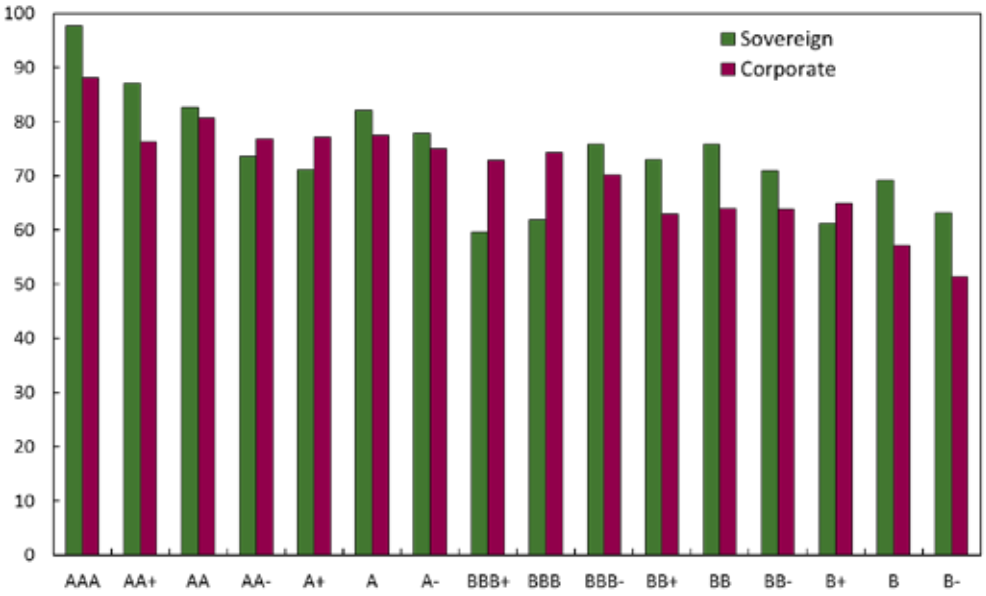
[3] Furthermore, according to Das et al (2012) there have been more than 140 sovereign debt restructurings.

The Eurosystem high "credit threshold" for collateral posted against monetary policy operations is effectively based on a BBB 0.40% one-year default probability. They may be consistent with recent data, but the rating agencies would not stand behind these interpretations.

The pursuit of stable ratings leads to potential downgrade cliff effects

One reason why rating agencies focus on the rank ordering of credit risk is that this avoids a trade-off between accuracy and stability. If agencies were to focus on absolute creditworthiness, ratings would rise and fall through the cycle, whereas their clients have expressed a desire for stability. That desire relates to the aforementioned regulatory rating hardwiring that can result in forced sales on downgrades, especially when the rating falls below investment grade. And sovereign ratings have generally been quite stable over time, especially investment-grade ratings (Figure 1).

Figure 1: Average Proportion of S&P Sovereign Ratings Unchanged Over One Year
(In percent of unchanged ratings)



Source: Standard & Poor's.
Note: Sovereign ratings for 1975-2009 and corporate ratings for 1981-2009.

On the other hand, so-called rating "through the cycle" (as opposed to "point in time" rating) is prone to producing downgrade "cliff" effects. Smoothing rules that rating agencies use to maintain rating stability can "bottle up" potential downgrades so that, when actual downgrades do take place, they are more extreme than "point in time" ratings would be. For example, from the beginning of 2007 through to end-June 2010, six investment-grade sovereigns were downgraded three or more notches over 12-month periods (Table 1).

Table 1: 2007-10 Three+ Notch Sovereign Rating Downgrades

	Fitch			Moody's			S&P		
	Start	End	Notches	Start	End	Notches	Start	End	Notches
Greece	A	BBB-	-4	A1	Ba1	-6	A-	BB+	-4
Iceland[1]	A+	BBB-	-5	Aaa	Baa1	-7	A+	BBB-	-5
Iceland[1]				A1	Baa3	-5			
Ireland	AAA	AA-	-3						
Latvia	BBB+	BB+	-3	A2	Baa3	-4	BBB+	BB	-4
Lithuania	A	BBB	-3						
San Marino	AA	A	-3						

Sources: Fitch; Moody's; and Standard & Poor's.

Note: Table shows successive downgrades or upgrades by three or more notches in aggregate during any rolling 12-month period, excluding downgrades or upgrades into, out of, within, or between the CCC or Caa categories downward; 2007 through June 2010.

[1]The Iceland downgrades by Moody's involve overlapping periods. The first period includes downgrades from May 2008 through end-December 2008, while the second period includes downgrades from December 1 2008 through end-November 2009. That is, both periods include the 3 notch downgrade on December 4, 2008.

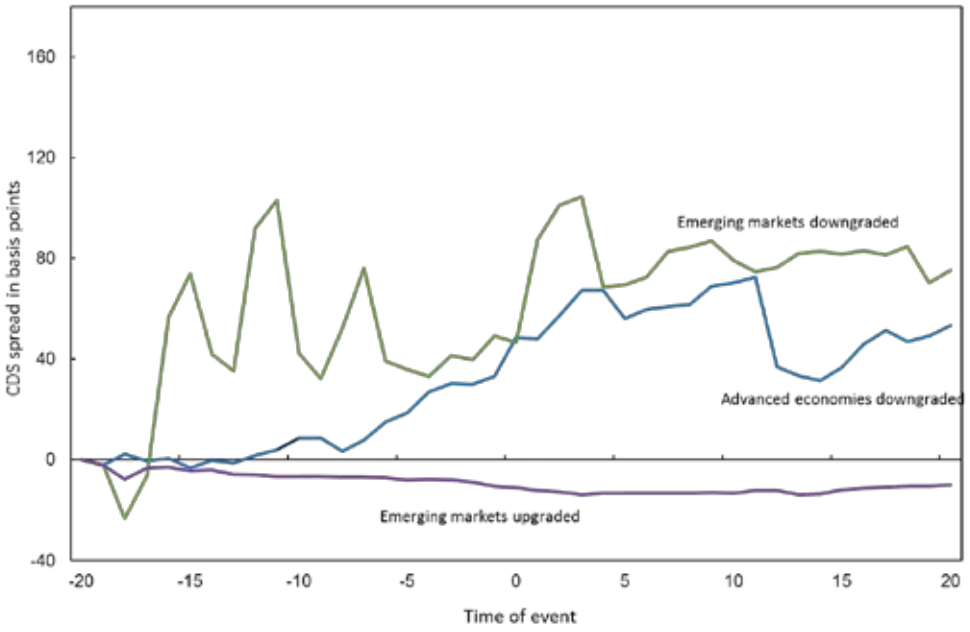
Mechanistic rating reliance can lead to destabilising knock-on effects

These cliff effects can lead to destabilising knock-on and spillover effects due to the hardwiring of credit ratings into rules, regulations and triggers. For example, ratings mechanistically drive investment decisions and collateral eligibility standards, including those of central banks. Also, ratings are embedded in various government rules and regulations. In addition, institutional investors often have rules that trigger forced sales of investments that are downgraded through specified rating thresholds.

Ratings downgrades through the investment-grade threshold are particularly important because they are often triggers for forced sales. Although empirical studies show that rating changes have only a muted impact on credit spreads, downgrades through the threshold do trigger some spread widening (Figure 2). However, rating agency warnings of impending downgrades, in the form of "reviews", "watches" and "outlooks", have more impact (Figure 3).[4]

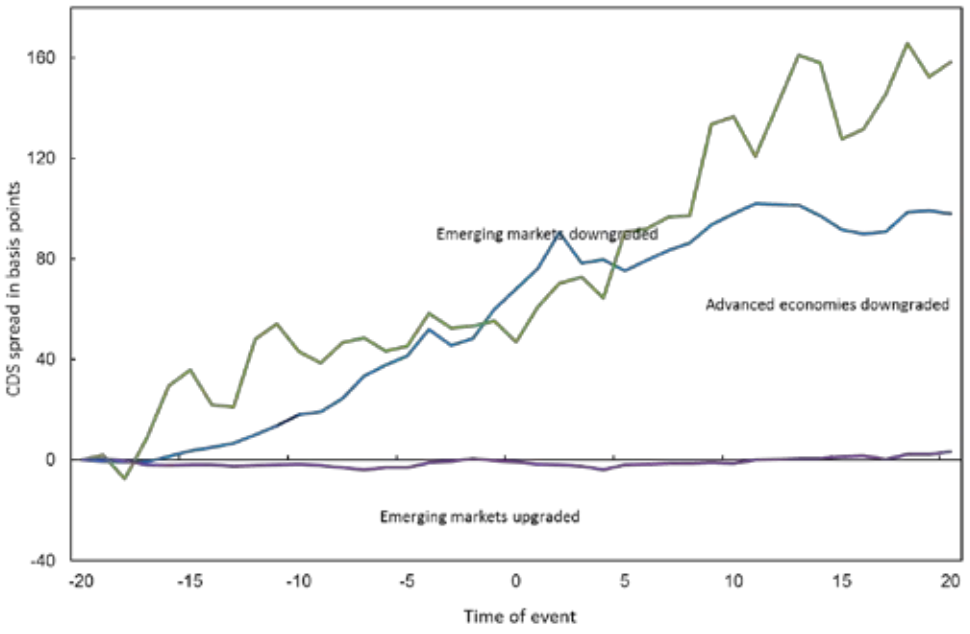
[4] Negative "reviews" and "watches" indicate a likely downgrade within 90 days, and negative "outlooks" indicate a potential downgrade within two years (one year for non-investment grade credits). Since 1989 up to end-March 2012, Standard & Poor's has published 111 sovereign negative watches, 74 of which were downgraded within an average of 48 days. Over the same period, 257 negative outlooks were followed by 146 downgrades within an average of 210 days.

Figure 2: Impact of Change in Sovereign Ratings on CDS Spreads



Sources: Markit; Moody's; and IMF staff estimates.

Figure 3: Impact of Change in Sovereign Outlooks on CDS Spreads



Sources: Markit; Moody's; and IMF staff estimates.

The key is to remove or replace ratings from laws, regulations and official operations

The Financial Stability Board (FSB) has identified a mechanistic reliance on ratings as a serious problem and has called on policymakers to work towards reducing it. The process must start at the top with, wherever possible, the removal or replacement of

references to ratings in laws and regulations, and in central bank operations. However, progress has been slow, due to the pervasiveness of such references and the difficulty in finding replacements.[5] In some cases, ratings based on "through the crisis" stress scenarios may be appropriate. They would still be prone to cliffs but with a reduced frequency.

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[5] The FSB's *Principles for Reducing Reliance on CRA Ratings* call for standard setters and regulators to "incentivise a transition to a reduced reliance on CRA ratings over a reasonable timeframe extending into the medium term, taking into account the need for market participants to build up their own risk management capabilities to replace reliance on CRA ratings, but with clear milestones".

On sovereign ratings: observations and implications

Andrew Powell[1]

Introduction

Rating agencies have come in for much criticism over the years. Most recently, they have been criticized for downgrading high rated sovereigns. It has been claimed that these actions are counter-productive and might even destabilize crucial government bond markets. While such criticisms have surfaced again in the wake of the Lehman crisis, the Great Recession and the European crisis, they have been widely known and discussed within emerging economies at least since the emerging economy crises of the 1990's.

There is something of a love-hate relationship between the official sector and the rating agencies: on the one hand the agencies are held to blame when things go awry, perhaps they may even serve as useful scapegoats to deflect attention from more fundamental concerns, but on the other hand the official sector, especially in emerging economies, courts the agencies when a new bond issue is planned. Moreover, international regulatory authorities continue to entertain the notion that ratings are useful for regulatory purposes.

Given such controversial issues it seems useful to take various steps back to try to gain perspective. The idea in this brief note is to make some, mostly empirical, observations about sovereign ratings. In doing this I draw on a set of recent papers that mostly focus on emerging economies. As there are more emerging than advanced economy sovereigns and their ratings have varied more over time, focusing on emerging country sovereign ratings may be more revealing. Furthermore, as discussed below, the recent crises in advanced economies have had a distinct emerging country flavor. In the final section, I attempt to draw some conclusions to shed light on these recent debates and I even dare to offer some recommendations for policy makers.

The first three observations are descriptive in nature, simply noting certain properties of ratings from the different agencies. The fourth draws on a set of papers that attempt to model ratings as a function of explanatory variables. These econometric models try to mimic how agencies actually model ratings and it is found that agencies' behavior is in general not very difficult to disentangle. Having

[1] Principal Advisor, Research Department, Inter-American Development Bank.

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said that, there are some tricky methodological issues with this work that merit discussion. Observation five highlights one such problem. Observations six through eight relate to the debate as to whether ratings add anything over and above the information that is already to be found in market variables. Observation nine focuses on the issue of multiple downgrades and observation ten relates to the cost structure of the information and ratings business. With this background, the final section then provides a discussion and recommendations.

Observation 1: rating agencies disagree about as much as they agree

Considering a standard mapping between Moody's and Standard and Poor's ratings, Moody's and S&P ratings are in agreement and in disagreement about 50% of the time each over a period of about 10 years – Powell and Martinez (2008). Considering the distribution at the time of writing there are about 54% of disagreements within emerging economies. At times there are also disagreements of two notches and more although these are rarer (disagreements of at least two notches were about 10% of the sample). In theory there may be differences regarding which variables are important to establish ratings, the definitions of those variables and their relative weightings. Higher fiscal surplus, higher tax revenue and higher reserves and lower inflation were all associated with higher Standard and Poor's ratings relative to Moody's – Powell and Martinez (2008). In general, similar variables are significant in standard regressions of ratings but some weights differ.

Observation 2: S&P ratings relate to default probability, Moody's to total return

A further difference is that S&P ratings relate to default probability (PD) while Moody's prefer a focus on total loss – PD*LGD where LGD is loss given default. I have often thought that this difference could or should be exploited more in research on ratings.

For example, one potential hypothesis stemming from the 2002 Argentine default and eventual restructuring was that sovereigns could drive home deeper haircuts in than previously thought – see Sturzenegger and Zettelmeyer (2007) and Cruces and Trebesch (2011), but in some ongoing (preliminary) work we do not find strong evidence for lower expected recovery values considering the changes in Moody's ratings versus those of S&P. Having said that, the recent legal actions in New York may be changing recovery expectations from sovereign defaults once again – see Allen & Overy LLP (2012) for a discussion of the recent NY legal actions and potential implications.

Observation 3: ratings vary over economic cycles, are pro-cyclical and exhibit serial correlation

Ratings change over economic cycles in a pro-cyclical fashion. The conditional correlation between rating changes and growth is statistically significant (value = 0.25) and there is pro-cyclicality with real exchange rate cycles. Nickell et al (2000) show ratings are not stable over time and vary with economic variables. Munford and Mulder (2000) argue that ratings vary pro-cyclically with emerging economy real exchange rates. Standard and Poor's (2012) documents that an upgrade (downgrade) is followed by a further upgrade (downgrade) within two years, in 35% (54%) of cases in 37 years of S&P sovereign ratings history, whereas it is followed by a downgrade (upgrade) for only 6% (10%) of the sample.

Observation 4: sovereign ratings are relatively easy (too easy?) to model

Panel regressions of ratings against a relatively small set of economic and institutional variables deliver significant coefficients and high R-squared statistics – see Cantor and Packer (1996), Afonso et al (2007) and Powell and Martinez (2008). This is actually not that surprising, especially given that a Principal Component analysis of all emerging country ratings over 15 years shows that two Principal Components explain over 80% of the variation in ratings and three factors can explain about 90%. Moreover, just three factors explain about 70% of the variation in seven leading economic indicators often used to explain ratings – Powell and Martinez (2008).

Considering standard regressions of ratings however, some methodological questions emerge. Perhaps the most serious ones relate to endogeneity and the fact that history clearly matters. One particular aspect of endogeneity can be seen considering the results regarding the inclusion of the current account as an explanatory variable. If it is included it is normally significant but with a negative sign. This suggests reverse causality. Countries with higher ratings tend to be able to finance higher current account deficits. Also a measure of income (such as GDP per capita) is often included but again perhaps a higher rating, by giving greater access to cheaper finance, allows a country to become richer? There are further problems of endogeneity; I come back to this in the next observation.

If history is important, this suggests a dynamic panel approach might be more appropriate but that then raises a set of other issues, particularly as the rating is not a continuous, cardinal variable but rather ordinal in nature. Cavallo et al (2012) discuss these issues and opt for a very different approach when trying to assess whether ratings add value to other market variables.

There are also, perhaps more surprisingly, some issues with the definition of critical variables. For example, debt is multi-faceted and the homogeneity and quality of debt statistics across countries has been poor to say the least – see IDB (2006) for a discussion. It's not clear what debt definition should be employed nor what denominator to use; GDP, tax revenues, exports etc. Debt structure may be as important as debt quantity. It is likely rating agencies take several definitions into

account and also consider the combination of different variables, suggesting interaction effects or some type of cluster analysis may also be relevant.

Observation 5: overrated?

Government Effectiveness or other institutional indicators are often included in rating regressions. Indeed ratings are highly correlated with many other country indicators. Table 5 of Powell and Martinez (2008) includes 12 country indicators ranging from the ranking of the Global Competitiveness Survey of the World Economic Forum to the World Bank's "Doing Business" and Voice and Accountability indices as well as Standard and Poor's and Moody's ratings – see the appendix. Correlations between the ratings and the other indicators range from a minimum of 0.75 to a maximum of 0.93, although these are largely derived from cross-section, not time series variation. A further problem is whether these types of variables are truly exogenous. Many of these variables rely on surveys, indeed some are surveys of surveys. Perhaps respondents have been influenced by the rating and statements of the rating agencies? In the end the rating also appears to reflect something deeper about the country, its institutions or its level of development, but again it's possible that the rating history itself may play a role in affecting a country's development trajectory.

Observation 6: rating agencies were not (wholly) convinced by the Great Moderation

While modeling ratings may be problematic methodologically, the fact that they may be modeled relatively easily by a small set of economic variables suggests that they may be a useful summary measure. What happens if then ratings are used as an indicator of country fundamentals to, say, analyze how spreads have moved over time?

The Great Moderation period, from, say, January 2000 to July 2007, resulted in a considerable improvement in ratings for emerging economies and a significant reduction in spreads. However standard regressions cannot explain the spread reduction given the improvement in ratings. Powell and Martinez (2008) conclude that given the estimated relation between spreads and ratings, out of sample predictions of spreads result in emerging country spreads some 150–170 basis points higher than the actuals. The reduction in spreads can be explained by including indicators of global liquidity or risk aversion in the regressions (e.g.: the VIX, US High Yield, US interest rate). Interestingly, if these variables are included in regressions of ratings on economic variables, they are not significant. This suggests that the rating agencies may have allowed higher global liquidity and lower global risk aversion to affect ratings in so far that these developments helped to improve "fundamentals" but not more than that.

Martinez and Powell (forthcoming) suggests that much of the decompression of spreads as a result of the Lehman crisis can also be explained largely by liquidity factors and not by the movement in country fundamentals, while the compression of emerging economy spreads thereafter has been due to a mixture of liquidity and fundamentals.

Observation 7: ratings add value (not all information is in market prices)

A non-trivial question is whether ratings matter. A series of papers using a variety of techniques suggest that they do – see Cantor and Packer (1996), Eichengreen and Mody (1998) and Powell and Martinez (2008). But there are strong methodological assumptions made in these analyses in order to obtain identification. The essential problem is how to control for other variables also publicly known, such as fundamentals and market prices that reflect those fundamentals.

Cavallo et al (2012) provide new evidence on this old question by treating both ratings and available market variables such as spreads, stock market prices and exchange rates as noisy signals of economic fundamentals (i.e.: all subject to measurement error), and, given that framework, by then developing a methodology to test whether there is information in ratings that affect future market prices that is not already contained within existing market prices. The conclusion is that sovereign ratings do add value in the sense that they add information to the noisy signals contained in popular market signals.

Observation 8: but rating changes cannot be considered as "events", anticipated changes add no value

It is tempting to consider rating changes as "events" and then employ an event study type methodology. But rating agencies announce outlooks and credit watches and frequently advertise their future actions, in that they outline why a rating move may be forthcoming and even suggest what a country should do to obtain an upgrade or avoid a downgrade. This hardly conforms to the assumptions of the classic event study frequently employed in the corporate finance literature – see Campbell et al (1996). Steiner and Heinke (2001) argue rating changes may have effects due to regulation rather than information per se. Cavallo et al (2012) divide rating changes into ones that are more anticipated versus ones which are not (using outlook changes and rating watches as indicators of anticipation), and find anticipated changes in sovereign ratings contain no new extra information over and above market prices.

Observation 9: multiple downgrades are not so uncommon, liquidity and sudden stops imply significant uncertainties, multiple equilibria are possible

Available S&P sovereign ratings data indicate that of 285 total downgrades there were 64 downgrades of at least 2 notches – 43 double downgrades and 21 of more than 2 notches. There is a clustering of multiple downgrades around crises such as the Asian crisis and subsequent Russian default and the more recent European crisis. A multiple downgrade might come about for various reasons including some large exogenous shock, some big policy change (or no policy change when a large

positive one was expected), as well as a mistake in terms of underestimating a potential risk factor. Such events are then not necessarily a signal of incompetence.

Interestingly, there is also a clustering of Sudden Stop events around the aforementioned crises – Calvo et al (2004, 2008), Cavallo and Frankel (2007) and Forbes and Warnock (2011). These crises have been labeled crises of the capital rather than the current account, related more to shifts in financial stocks than flows for payments of goods and services. One possibility is that the risks and potential effects of Sudden Stops have been underestimated and when they do occur, multiple downgrades then occur ex post rather than ex ante.

Consider the case of Spain that has suffered a dramatic Sudden Stop of private capital flows. Plugging Spain's end of 2011 parameters into a Sudden Stop debt sustainability model with assumptions on certain elasticities reveals a significant required real devaluation but debt is denominated in nominal euros – see Powell and Ruiz (2012) and Borensztein et al (2010). The required real devaluation is engineered through recession and the real devaluation implies a shift in relative prices, which both interact to worsen Spain's debt sustainability indicators, and the required fiscal retrenchment hurts growth yet further. The relationship among required current account adjustment, the relative price changes, growth and debt sustainability is not obvious and fraught with problems to estimate precisely. It seems quite likely that rating actions in such cases may arrive later once these processes are well-advanced rather than anticipating them precisely.

Moreover in the case of Spain, due to official Eurosystem financing, the private sector Sudden Stop has not been converted to a fully fledged Calvo et al (2004) type Sudden Stop, requiring full current account adjustment as suffered by many emerging economies. This financing has also maintained interest rates at a lower level. Simulations reveal that if this financing were to be interrupted, and interest rates rise, then the combination of higher rates and the Sudden Stop would be even more devastating for the Spanish economy. Rating Spain then involves not only an analysis of the implications of the Sudden Stop on debt sustainability but also a forecast of how Eurosystem financing will evolve.

Indeed it remains uncertain exactly how the Spanish adjustment will play out and what that will imply for debt sustainability. As this does not depend solely on actions by Spain but also on those of the European authorities, it depends also on the intricate nature of the politics of the European Union. There may be significant good news or other news over the course of the next few years that may have consequences for ratings.

Given the importance of liquidity there is also the possibility of multiple equilibria – see for example the discussion in Blanchard (2011). Put in the simple language of debt sustainability if interest rates remain low, the debt of a nation saddled with a relatively high debt/GDP ratio may be sustainable, but if interest rates were to rise then the risk of that debt burden becoming unsustainable may be high, justifying those higher interest rates. The Sudden Stop literature has amply illustrated the link between shifts in the stock of financial assets, the required adjustment in the current account and the potentially sharp effects on growth. Assuming there are multiple equilibria and not just significant uncertainty invokes a set of deeper issues, and I come back to them in the final section.

Observation 10: there are many banks, not that many sovereigns and even fewer rating agencies

Basel II's Standardized Approach introduced the possibility of using external ratings for bank regulatory capital calculations. An average sized bank may have thousands of small corporate loans to medium sized companies. Moreover, several banks may be lending to the same medium sized company. There are then large cost advantages of using such external opinions versus generating a system of internal ratings for every average sized bank.

However, there are relatively few sovereigns. And while many banks may lend to the same sovereign, the cost advantage of using an external versus an internal rating for a bank lending to a sovereign is surely smaller. Moreover, it is generally agreed that rating corporates is more about competent analysis and projections of balance sheets and income statements while rating a sovereign includes many more subjective elements such as assessing political as well as economic risk, and the relation between the two. Rating corporates might be then considered something more of a science, rating sovereigns more of an art. If this is correct, rating corporates may then be more about obtaining the right information and pursuing the right analysis while in rating sovereigns, subjective opinions may differ.

Rating agencies and regulation: a discussion

At least since Ackerlof (1970) and Mirlees (1975), it has been known that information structure is a critical determinant for how markets function and may strongly affect economic outcomes. More recently, Morris and Shin (2003, 2004) advanced a "global game" framework to analyze the impact of the quality of public versus private information signals. Consider an application to bond markets. Following these latter authors, one possibility is that there are three regions: one where the fundamentals are so strong (e.g.: debt low, fiscal situation sound) that the debt of a country would be sustainable whatever the interest rate, a second region where the debt would be unsustainable whatever the interest rate (high debt, large fiscal deficit) and an intermediate region where there might be a multiple equilibrium as discussed above. A unique equilibrium however emerges in a global game framework if the *private* signal that agents have is of sufficiently high quality given the quality of a *public* signal. In an interesting twist to the global games story, Angeletos and Werning (2004, 2006) argue that in a context where the market price aggregates private information the multiple equilibrium regime may be expected to dominate.

While these papers do not model the information market and the existence of credit rating agencies explicitly, and more research seems warranted, it seems appropriate to consider credit ratings as a further public signal in addition to the price. In the spirit of Cavallo et al (2012), prices and ratings are both noisy signals of underlying fundamentals.

It might then be argued, extrapolating from these recent theoretical contributions, that if ratings are of poor quality and essentially add noise, then the region in which a unique equilibrium might emerge may be larger in the parameter space, whereas if credit ratings are of high quality then multiple equilibria would tend to prevail. But if they were of poor quality (and so there was a unique

equilibrium) then a downgrade might be expected to have little impact. On the other hand if they were of high quality (and so there were multiple equilibria) then a downgrade might be expected to have a significant effect, particularly if they acted to coordinate the private sector to a good or to a bad equilibrium. A change in ratings could even conceivably prompt a Sudden Stop. Given potential multiple equilibria, it is very hard to test causality empirically but either way it is easy to see why Sudden Stops might be accompanied by multiple downgrades.

Ratings may then play a quite subtle role in the game of information aggregation. It's interesting to tease out the implications of the above arguments. If ratings are of low quality relative to private signals, there may be a unique equilibrium, but, since they are of low quality, we would not expect downgrades (or upgrades) to have too much impact. If they are of high quality there might be multiple equilibria and downgrades might be significant for other agents to update their views. Of course it may not be just one or the other; the quality of the signal may vary over country or over time. These considerations may lie behind some of the results obtained by Cavallo et al (2012) for different cases.

Should regulators then regulate rating agencies? This question has many aspects and I will only give a partial view here. If regulation could improve the quality of ratings (let's suppose the market may have some race to the bottom characteristic and regulation might force the agencies to use more of their rents to invest in better research for example), then this might push us to the multiple equilibria story, and ratings might then become more influential, which is not perhaps what some regulators have in mind. On the other hand, some regulators may wish to constrain rating agencies' actions, which would presumably lower the quality of their ratings relative to an unconstrained case, and hence render them less important.

Rather than regulating existing agencies directly, perhaps policy makers should try to work to make the information market function more efficiently, which may also have the effect of reducing the influence of the small number of existing agencies. One idea would be to minimize any pure information rents that agencies may have. To some extent improvements in information and transparency go in this direction but there remains some way to go, for example to improve the quality and timeliness of debt and other statistics.

A further step would be to harness the internal ratings that banks already make regarding sovereigns. Bank regulators could collect such internal ratings and publish the mean, median, and percentiles of the relevant distributions. In fact this would yield new information to the market, while maintaining confidentiality. As there are only three main rating agencies it is hard to gauge the precision regarding the information provided. An agency may state a country is an A, but how sure is it that it is an A? While rating watches and outlooks give some qualitative assessment that a rating may change, a statistical analysis of banks' internal ratings published on a regular basis would be much more adequate to the task. The analogy would be a Central Bank's survey of inflation; many Central Banks publish the statistics of the distribution of such surveys that then yields information on the uncertainty of any inflation forecast.

Indeed, Majnoni and Powell (2005) suggested that banks should not be allowed to use external ratings for sovereigns. We suggested that if a bank wished to lend beyond its border to a sovereign it should have the capacity to analyze the risks involved. As argued above the extra costs of doing this do not appear unwarranted. Of course the ratings of the leading agencies may be used as an input to that

decision but the bank should have its own internal rating system. This should harness the opinions of the relevant senior managers of that institution and be reviewed by the bank's regulator. Moreover, we suggested that banks could report those ratings to the BIS, or another central body that could convert them to a standardized scale and publish aggregate statistics regarding the distributions of banks' opinions. It is unlikely that this would remove the problem of multiple equilibria but it may reduce the dependence on the opinions of a very few agencies.

A second recommendation is to sponsor research specifically on the information structure of these markets. There is fascinating recent research on the role of market players and prices and how information is transmitted but the research to date does not include rating agencies explicitly. Rating agencies may be considered as a combination of information aggregators and opinion formers and the ratings are perhaps best considered as a further noisy signal of the actual "fundamentals" regarding probability of default or total expected loss. I developed some arguments in the above extrapolating from existing theoretical models, and combined them with arguments regarding the cost structure of the information business but they should definitely be read with health warnings attached. Further research would no doubt contribute to our understanding regarding the benefits and dangers of the sovereign rating business.

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Sovereign debt: financial market over-reliance on credit rating agencies

Donato Masciandaro[1]

Markets can become excessively over-reliant on credit ratings. And market over-reliance risk (MOR), if we may call it that, can adversely affect sovereign debt issuance. By MOR, we mean the risk that ratings can affect bond yields quite independently from the supply of new information (*information discovery effect*). Excluding the behavioural explanations, the MOR depends on two factors: the fact that ratings are embodied in regulation (*ratings-based regulation effect*), and the communication policies adopted by credit rating agencies (CRAs) (*communication effect*). To reduce MOR, it would be necessary to eliminate ratings-based regulation on the one hand, and to introduce an element of liability into CRA communication policies on the other.

1. Introduction

Over the last five years, the volatility of financial markets has significantly increased. This upsurge in volatility, if it becomes structural, could be regarded as a negative phenomenon in that higher volatility is both a signal and a catalyst of uncertainty. And higher uncertainty tends to interfere with resource allocation.

From a macroeconomic point of view, the increase in volatility is particularly significant when it affects sovereign debt, for at least four reasons. First, government bonds represent a considerable share of today's financial assets: the sovereign debt of advanced economies has increased from about 75% to more than 110% of GDP.[2] Second, such bonds are generally held by small investors, ie citizens/voters, so that increased volatility translates into higher uncertainty in general expectations, with a higher risk of effects on the real economy. Third, volatility in sovereign debt also tends to affect the volatility of securities issued by resident corporations and banks.[3] Fourth, volatility in government bonds can trigger economic policy responses, which further amplify its effects.

Recently, CRAs have greatly extended their government bond-related activities: as of July 2010, Standard & Poor's was rating some 125 sovereign states; Moody's was rating 110 and Fitch 107 (IMF 2010). In general, the activity of CRAs can be a factor that contributes to the volatility of government bonds. The empirical analysis confirms this correlation: ratings-related news such as the publication of a rating or a revision of an outlook is linked to variations in government bond yields and/or spreads for the associated CDS.

[1] Chair in Economics of Financial Regulation, Department of Economics and Paolo Baffi Centre, Bocconi University and SUERF.

[2] Bank for International Settlements, 2012.

[3] Caporale et al, 2012; Williams et al, 2013.

First of all, negative ratings news tends to have a negative effect, while positive news seems to have less immediate consequences.[4] Also, the effect of negative ratings news significantly increased after 15 September 2008, the date of the Lehman Brothers' bankruptcy.[5] Second, for each country the effects of ratings news on yields and margins tend to reinforce each other[6] – a negative effect that has been noted by the European Union.[7] Third, a contagion effect among states is at work: ratings news tends to affect not only the issue that is the direct subject of the communication, but also the sovereign debt of other countries as well.[8] Fourth, the contagion effect also seems to hold across CRAs, with evidence of interdependence in rating evaluations,[9] and reduced but still existent heterogeneity.[10] Lastly, there is a persistence effect between one communication and another: the correlation between price and/or margin variations and ratings news is stronger if the CRA has already released a statement on the country in question in the preceding month.[11]

Thus ratings news seems to affect the prices and thus yields of government debt securities. But how can the relationship between ratings news and volatility be explained? Under what conditions does it have a positive or negative effect on financial markets? What are the implications for regulation?

The aim of this note is to try to provide answers to these three questions, by illustrating and discussing the three different explanations that economic analysis can offer about the relation between ratings and volatility of government bonds. The argument is simple: if volatility were only and always linked to new information contained in ratings news, the effect on markets would be consistent with the positive information discovery role that theory attributes to the ratings. But it is possible that volatility may depend on two other sets of factors: the effect of regulations embodying such ratings, and the communication policies adopted by CRAs. In that case, there might be a so-called market over-reliance risk (MOR)[12] that is damaging to markets, and which it might be advantageous to counter. Here we discuss a MOR that does not depend on behavioural biases[13].

The analysis will be based mostly on the literature devoted to CRAs that has been published during and after the 2008–09 economic and financial crisis. The aim is to achieve a better understanding of the relation between ratings news and markets after the structural break represented by the crisis. The article is organised as follows: in the next three sections are assessed the three most probable explanations of the correlation between ratings news and volatility. These are the

4 Reisen et al 1999, Hull et al 2004, Norden et al 2004, Kraussl et al 2005, Afonso et al 2012.

5 Afonso et al 2012.

6 Reisen et al 1999, Afonso et al 2012.

7 Barroso 2010.

8 Gaude et al 2010, Ismailescu et al 2010, Afonso et al 2012, Arezki et al 2011.

9 Alsakka and Gwilym 2010, Livingston et al 2010.

10 Hill et al 2010.

11 Afonso et al 2012.

12 In an early draft of this article (Masciandaro 2011) the effect is labeled as excessive volatility risk.

13 On the relationship between behavioural biases and financial market volatility see among others Shleifer 2000 and Barberis and Thaler 2003.

two traditional ones – the information view and regulatory capture view and a new one – the communication view. The concluding section draws the implications of the analysis in terms of prescription for regulation design.

2. Ratings news and the information discovery effect

In general, the activity of CRAs, as expressed through ratings news, can be a driver of volatility for government bonds. But this *per se* is not necessarily a problem. Ratings are by their nature procyclical. The role of ratings is to provide, through the publication of an opinion, information to markets on the likelihood that a bond-issuing agent – company, bank, and government institution – may renege on its commitments.[14]

A rating can be a significant channel for new information to the marketplace because it reduces information asymmetry (*information discovery*),[15] so that markets move in the direction of the opinion expressed. This can also produce changes in the issuer's funding cost (*cliff effect*).[16] In the case of positive ratings news, markets reward the issuing government, while the opposite occurs if the judgment is negative. In addition, information discovery can affect the future behaviour of the sovereign issuer, whose financial and economic policy choices can be either confirmed or modified according to whether the rating is positive or negative (*monitoring effect)*.[17]

In other words, if a rating offers new information to the markets, it contributes to lower macro credit risk, even if this comes at the cost of increasing macro volatility risk. Any ratings news, if it provides new information, has a positive externality, since it reduces credit risk, and a negative externality, since it increases volatility risk. But the net effect is positive by definition; the credit rating becomes a public good.[18] The more relevant that an item of ratings news is in terms of information discovery, the stronger an effect it will have on markets. In this case, the MOR tends to be zero.

But what determines the significance of ratings news? Since ratings news is an output, its significance must depend on the inputs that go into its production.

The credit rating industry, if we may call it that, has grown in accord with the laws of supply and demand. Starting in 1841 with the first CRA – the Mercantile Agency founded by Lewis Tappan[19] – this process has culminated in some 150 CRAs that are active all over the world.[20] Of these, about 140 are single-country and/or single-sector-oriented, while around five to 10 agencies based in Japan, the United

[14] Deb et al 2011,De Haan et al 2011, Schroeter 2011.

[15] Pagano et al 2010, Deb et al 2011, Freixas and Laux 2011.

[16] Deb et. al 2011.

[17] Boot et al 2006, Bannier and Hirsch 2010, De Haan et al 2011.

[18] Duan and Van Laere 2012.

[19] Deb. et al 2011

[20] De Haan et al 2011, Schroeter 2011.

States and Canada provide ratings news on more than one country or industry.[21] In the United States, there are 10 officially registered CRAs.[22] But the global market is dominated by the Big Three – Standard & Poor's, Moody's and Fitch – with market shares estimated at 40% each for Standard & Poor's and Moody's, and 15% for Fitch.[23] The number of issuers rated by Standard & Poor's has climbed from 1,386 in 1981 to 5,860 in 2009,[24] with the revenues of the CRAs increasing in line with this growth.[25]

The ratings news output is driven by the demand from capital markets investors for information on issuers of equities and bonds. It is this demand for information that ratings news is intended to meet (information discovery). Ratings represent an assessment of the probability that the issuer will regularly and completely fulfil its obligations.[26] The assessment is subjective and forward-looking; these two characteristics differentiate ratings from accounting reports, which by contrast are based on historical data and objective criteria.[27] CRAs are *information intermediaries:*[28] given information inputs from various sources and the technological and human capital at their disposal, they produce an information output with value added.

If a rating fulfils the function of information discovery, thereby reducing information asymmetry on the capital markets, it produces what we may call the *market certification effect* on the quality of both the security and its issuer.[29] The market certification effect sums up the net positive externality of ratings news: the action of private firms – CRAs – has a widespread effect on the efficiency of all markets. It thus produces a public good, since information can be consumed by all without risk of rationing,[30] and the effect on bond prices, volatility included, is a natural consequence. If the market certification effect holds, the MOR is null.

But on what depends this discovery of information, and hence the certification effect? The prime mover is the incentive for CRAs to build themselves a reputation (*reputation-building*).[31] The intuition is simple: faced with an issue and/or an issuer, a CRA seeks to give the best possible judgment, putting together public and private information on the one hand, and specialised human capital applying the best methodologies, on the other. As a CRA's reputation grows, its ratings news is bound to have a larger impact on the financial markets.

21 Schroeter 2011.

22 Deb et al 2011.

23 Schroeter 2011; the sum of the three reaches 98% in Partnoy 2009a.

24 Deb et al 2011.

25 See, for example, Lowestein 2008.

26 De Haan et al 2011, Schroeter 2011.

27 Deb et al 2011, De Haan et al 2011, Freixas and Laux 2011.

28 Partnoy 2009a, Schroeter 2011.

29 Deb et al 2011, De Haan et al 2011, Bosch and Steffen 2011.

30 Schroeter 2011.

31 Becker and Milbourn 2011, Mariano 2012.

There are at least three reasons why ratings news offers added value in informational terms. First, CRAs have access to non-public information sources (data inputs).[32] Second, they use higher-quality human capital and technology to handle such data. Third, CRAs have the correct incentives (goal function) to supply a quality product, independently from the state of the business cycle or the nature of the issuer.

However, recent economic analysis has called into question all three arguments that might justify the information discovery produced by ratings news, especially in the case of sovereign issues. Doubts originate from a general observation: ratings have proved ineffective on various occasions, starting with the Asian crises of 1997 and 1998,[33] in the case of California's Orange County default, as well as the Enron, WorldCom and Global Crossing cases, [34] and the structured finance defaults[35] that helped to trigger the 2007-09 financial crisis.[36]

The ineffectiveness of ratings news could be attributed to at least three different causes. First, the release of ratings on government debt, particularly if unsolicited, does not benefit from privileged information sources.[37] Secondly, it is open to question whether CRAs do, in fact, manage to attract the best human capital, given their salary and incentive structures,[38] especially when these are compared with those of other financial firms and institutions.[39] It is also debatable whether the human capital and the methodologies employed are adequate to the task.[40]

Finally, there can be biases in the behaviour of CRAs that lead to systematic distortions in ratings, quite independent of the issue and/or issuer involved. Let us list here only some of the relevant hypotheses in the economic literature. A first hypothesis is that the economic cycle has an effect on the degree of homogeneity of the rating expressed (*bandwagon effect*): CRAs tend to behave similarly during expansionary phases, while they tend to differentiate their opinions during recessionary phases of the cycle.[41] Such a finding would go against the assertion that ratings are constructed with cycle-smoothing techniques.[42]

A second hypothesis is that CRAs modify the rigour of their assessments in a countercyclical way, with a view to accommodating issuers who pay for their ratings (*accommodation effect*): in recessionary phases, opinions are more lenient, to help

32 Deb et al 2011, Van Roy 2012.

33 Ferri e Stiglitz 1999.

34 Partnoy 2009a, Deb et al 2011.

35 CGFS 2005.

36 PWGFM 2008, FSF 2008, Issing Committee 2009, Turner Review 2009, De Larosiere Group 2009.

37 Kormos 2008.

38 Bar-Isaac and Shapiro 2011.

39 Hill 2004.

40 Partnoy 2009a.

41 Croce et al 2011.

42 Cantor e Mann, 2007.

issuers find a market for their issues in more difficult market conditions.[43] More generally, the conflict of interest that is intrinsic to the relationship between CRAs and issuers can create biased incentives.[44] Indeed, the risk of conflicts of interest has increased in the last two decades. Before the 1970s, the rating industry was based on the investor-pays principle, while today the issuer-pays model has taken over.[45] Where the investor-pays principle applies, the quality of credit ratings is likely to deteriorate.[46] Thus the risk of biased ratings could be attributed either to the economic cycle,[47] or to the business model adopted by CRAs in which longer relationships with firms tend to produce higher ratings but not lower default rates.[48]

Summing up, the information discovery value of the ratings news is far from established. In spite of this, we have seen that ratings news continues to have important effects on market volatility. Thus, the relevance of ratings news may depend on other factors. In this case, the ensuing volatility would be excessive volatility, since the cost of the increase in volatility risk would not be offset by the benefit of any reduction in credit risk. The MOR is thus likely to exist. But from what factors does the MOR derive?

3. Ratings news and ratings-based regulation effect

The MOR of ratings news can be explained on the basis that ratings are used as an integral part of various types of banking and financial regulation (*ratings-based regulation*).

Ratings – starting with the first initiative by the SEC in this field in 1936[49] – have been progressively embodied in numerous regulations. In fact, ratings have been applied in at least four areas of regulation: eligibility requirements for regulated stock markets (again, the SEC was first in 1975[50]); classification of assets in portfolios of institutional and public investors; disclosure and valuation of assets in securitisation processes; and especially prudential oversight, the most pervasive example being the Basel Accords, starting with the 2004 iteration,[51] and continuing today with the Basel III 2010 Accord.[52] Ratings-based regulation has developed precisely because of the role of information discovery assigned to ratings.[53]

43 Wang 2011.

44 Deb et. al. 2011, Bolton et al 2012, Griffin and Tang 2009.

45 Freixas and Laux 2011.

46 Ponce 2012.

47 Ashcraft et al 2009, Bar-Isaac and Shapiro 2012.

48 Mahlmann 2011.

49 Schroeter 2011.

50 Deb et al 2011.

51 IMF 2010, Deb et al 2011, Schroeter 2011.

52 Basel Committee on Banking Supervision, 2010.

53 Schroeter 2011.

The embodiment of ratings in regulation has a direct effect on a security's or an issuer's marketability and hence influences an issuer's cost of debt capital.[54] As such, a rating thus becomes a sort of quasi-public license that affects the success of an issue (*license effect*).

There is a widespread consensus that the importance of ratings, and thus the significance of ratings news, has much increased since ratings-based regulation went into effect.[55] But if the increase in volatility risk, amplified by the license effect, were still based on information discovery, the net effect of ratings news could still be considered as a positive externality.

As time went by and doubts grew about the value of information discovery attributable to ratings, the hypothesis that the significance of a rating can itself depend on the role played by regulation has gained ground, irrespective of the informational content.[56] The license effect linked to ratings would then be among the causes of the recent financial crisis.[57] For example, let us consider the investors who were constrained by regulation to invest in triple-A securities, which could be drawn from a wide variety of asset classes – ABS tranches, corporate bonds, public securities – with very different return profiles. If regulation artificially pushes up demand for triple-A securities, distortions are more likely to occur.[58] Further, the act of rating a security incurs the risk of becoming endogenous; that is, the use of ratings-based regulation may increase the incentive to inflate these ratings.[59]

In other words, the quasi-public license effect ends up being independent from the market certification effect. In the presence of a license effect that explains the significance of ratings news, the volatility of the issue's value would be affected to a degree that is not justified by the rating's information content. Theoretically, the more probable the license effect is, the higher the MOR will be. In this case, given inaccurate public information, distortions are likely to occur in financial markets.[60] In other words, ratings news would only have the effect of causing an increase in volatility risk; it would not deliver the information benefits that reduce credit risk. Thus, the net externality would be negative (a public disbenefit).

4. Ratings news and the communication effect

The economic literature has yet to explore a third channel that may explain the link between ratings news and volatility: the communication policies of CRAs. It is surprising that such channel has been overlooked until now, in spite of the importance of communication that is intrinsic to the release of opinions by CRAs. In other fields of economics, significant progress has been made in the analysis of the

54 Kisgen and Strahan 2010.

55 Schroeter 2011, Deb et al 2011.

56 Partnoy 1999, 2009.

57 Partnoy 2009b.

58 Freixas and Laux (2011).

59 Opp et al 2012.

60 Pagratis 2005, Allen et al 2006.

role of communication in determining the effectiveness of the transmission of information: for example, in monetary policy, or more recently, with reference to the macrosupervisory role assigned to central banks.[61] The same type of research needs to be conducted on CRAs. In fact, keeping the level of information discovery constant, it is intuitively clear, for various reasons, that the significance of ratings news is linked to the communication policy (*communication effect)*.

First, the importance of communication is apparent, starting with the decision to express the rating evaluation as a particular grade; this represents a synthetic and immediate way of communicating, which is comprehensible to all investors, no matter what their level of financial literacy may be.[62]

Second, if the economic role of CRAs is that of information intermediaries, the effectiveness of their communication with the market must depend heavily on their choice of method and timing in transmitting ratings-related information. Thirdly, the choice of communication policy is even more important in the case where sovereign debt issues are evaluated, for the reasons we have outlined in the introduction.

Fourth, the increasingly important question of CRAs' accountability must be considered.[63] Discussion of this issue has so far been limited to the question of whether a CRA is liable for the opinions it expresses. But, since ratings affect markets through communication as well as their information content, the design of any mechanism for CRA accountability must necessarily reflect both these aspects of a CRA's activities.

The crucial point is that a communication policy is an integral part of information discovery. The more that ratings news contains information discovery, the greater becomes the psychological element in the volatility caused by the communication effect. Conversely, the more uncertain the content of information discovery becomes, the higher the risk of MOR will be.

The communication policy adopted by CRAs can be analysed from at least three different perspectives. First, the objective of communication must be established, which can be a rating change, a rating watch or an outlook.[64] In principle, we can hypothesise that the effect on markets will depend upon the type of communication: an evaluation expressed by a rating or a revision of an evaluation as expressed in an outlook announcement.

Second, the mode of communication must be considered. This can take the form of a press release, a press conference, or some other format. Third, the timing of communication must be investigated from two points of view: in absolute terms, by distinguishing periodical, institutional communication, which is predictable, from ratings news that is not predictable; and in relative terms, with respect to the functioning of financial markets (eg whether ratings news is communicated when markets are closed or open).

[61] For a survey see Born et al 2011.

[62] Schroeter 2011.

[63] Deb et al 2011, Schroeter 2011, Partnoy 2009, Freixas and Laux 2011.

[64] Alsakka and Gwilym 2012.

5. Conclusions

The activity of CRAs has effects on the volatility of sovereign bond yields and margins. If the effect on financial prices depended only on the information discovery function contained in ratings news, the negative effect would be more than offset by the positive effect in terms of more accurate information on which to evaluate credit risk. However, since the information discovery function of ratings news cannot be taken for granted, there is a risk of excessive volatility, linked to the fact that ratings have become embedded in regulation, or because of the communication policy adopted by CRAs. The MOR is likely to exist. From these considerations, two types of conclusion can be derived, which are linked respectively to positive and normative analysis.

When considering the association between ratings news and volatility, it is important to conduct empirical studies aimed at distinguishing the relative influence of the market certification effect (of the quasi-public license) and of communication effects. As far as the regulatory implications are concerned, the resulting excessive volatility is a negative macroeconomic phenomenon.

If it was decided that the risk of excessive volatility needed to be eliminated, we would have to act on at least two fronts. On the one hand, ratings-based regulation would have to be abandoned. Over the last few years, a growing weight of opinion has swung behind the view that the role of ratings in regulation should be reduced, at least over the medium term.[65] This trend should be encouraged and accelerated. Delays would tend to support the thesis that, especially in the United States, regulators and politicians have been slow to intervene on the ratings question owing to strong lobbying by the CRAs themselves.[66] On the other hand, when considering proposals for new regulation[67] aimed at increasing the accountability and liabilities of CRAs, the issue of communication policy should be dealt with explicitly and head on.

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[65] BCBS 2009 e 2010, FSB 2010, SEC 2011; for a survey, see Deb et al 2011. See also Eijffinger 2012.

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Financial markets without a risk-free sovereign: Moderator's introduction

Harold James[1]

Thanks, Steve, it's a great pleasure to be here. The title for this session is "Financial markets without a risk-free sovereign". I think the problem with the clock,[2] as it were, is an ominous sign for this, because I think it's true we like to have an agreed reference framework. So the common system of time, the standardisation of time in the 19th century was one of the great stories. I like to have a number that I can think about when I know what the weather is going to be like, whether it's Fahrenheit or centigrade; in Switzerland you still find Réaumur, or you could even do things in Kelvin, but you like to have a number for the temperature.

It seems to me, in the same way, we like to have a number that can serve as a guidance point for the interest rate. If we look at very, very elementary, very crude economic text books, they will tell you that there is a point at which the demand and supply of credit interact at the interest rate. But when I'm looking at this historically and I ask students: Well, what exactly is the interest rate? It's absolutely impossible to say what that is.

Except at some moments, we think that we take one particular set of interest rates as a guide and use that as a reference framework. At lunch time, Steve was thinking about the Dutch bonds in the early 17th century, with an 8% yield. One of the stories of financial modernisation is the gradual lowering of interest rates in the 18th century, after the financial revolution in Britain. Just before the First World War, there was a kind of consensus that a standardised interest rate was really part of the basis of a civilised society, so that when General de Gaulle writes in his war memoirs, when he tries to describe what the France was like that he was growing up in that was then destroyed by the uncertainty of the Great War, he describes the characteristic of the era he grew up in as the era of 3%, "l'ère du 3%".

Looking at it in a broad framework, if I may just, as an introductory kind of comment, I think that in the 19th century, most people would take the Bank of England's bank rate as the guide for the whole international system; in the third quarter of the 20th century, probably the US Treasury bill rate. And that choice reflects the transition of the system from a fundamentally London-based, commercially based view, to a world in which government securities and the power of the United States are the keys to the international system. In the late 20th century I think probably, looking back, analysts would take Libor as the critical rate. But then we look back after the events of the last years and really have big doubts about this.

So first of all the question is: What's the basic guidance rate? Is there something like this? And related very much to this idea of having a risk-free interest rate, is that at all a credible idea? In Jaime's presentation this morning, he suggests that the consequence of not having such a basic guidance point is to produce a considerable amount of disturbance and uncertainty, and in a sense, that was

[1] Princeton University.

[2] [Editor's note: the digital clock in the conference room was temporarily stuck between minutes.]

actually what General de Gaulle was being nostalgic about when he said that before the First World War things were calculable and that in the 1920s they certainly weren't calculable any more.

The second framework for the issues we should look at, I think, this afternoon is the question of the corresponding collateral to this rate. What's a suitable form of collateral? Is there something that's risk-free enough to serve as collateral?

And that leads, I think, into a third area of discussion, and again it was adumbrated already this morning, about the sustainability of the fiscal position of big industrial countries. And Europeans often like to make this point, that the EU fiscal situation in aggregate looks better than that of the United States and much better than that of Japan. Is it conceivable, when you think of the developments of the last 15 years or so, since the Asian crisis, is it conceivable that because of their better fiscal position, the debt of large successful emerging markets could take the place of that of overburdened industrial countries? Those, I think, of all issues, those are potentially relevant to this session.

We have here the same kind of mixture as in previous panels, of so-called practitioners, policymakers, and academics, but actually the practitioners are very distinguished academics, and the policymakers are also people who have thought deeply about the implications and the whole story. And the academics, or the academic, in this case, is somebody who also came from the business world. So it's all mixed up; I think we can't use these guidelines as very suitable. We don't even have a guideline for the organisation of this discussion that's very appropriate.

First of all, Peter Fisher, please, from BlackRock.

Reflections on the meaning of "risk free"

Peter R Fisher[1]

How will financial markets adjust to a loss of faith in the idea of risk-free sovereign bonds? Will there be enough suitable collateral for the banking system to function smoothly?

The idea of risk-free sovereign *bonds* is best thought of as an oxymoron or as an anomaly of recent history. It is not a useful, necessary or an enduring feature of the financial landscape.

As we rediscover the meaning of the risk-free *rate* investors will take less risk than they have habitually taken in recent decades. This is because the inherent risks of long-dated sovereign bonds will be more evident and because we will recognize a lower risk-free rate. Also, as we recognize the higher cost of immunizing ourselves against counterparty risk, we will undertake fewer financial transactions. Thus, in my view, it is unlikely that fifty years from now historians will look back on the present time as the beginning of the great collateral shortage. Rather, I suspect that they will look back on us as living at the end of the era of the great glut in financial transactions.

To make sense of this subject, we first need to be more specific about the different financial concepts that we have attributed to sovereign bonds. To assess the implications for financial markets, we need to be much more precise about the claims we are making when we say that we have just discovered that we live in a world without risk-free assets.

What are we talking about?

When we think about sovereign bonds and discuss the risk-free rate there are (at least) six different concepts or purposes that we should distinguish that we attribute to sovereign bonds. We also need to be more specific about the meaning of risk.

First, we can use sovereign liabilities as a measure of the *cost of borrowing*. We also use other benchmark rates, like LIBOR, to reflect credit spreads over a government cost of borrowing. But the concept we are applying is that of the cost of financing a liability.

Second, we measure the *time value of money* – the discount rate that we apply to future cash flows to bring them into present values. We can use sovereign bond, interest-rate swap or corporate credit yield curves to do this. The purpose is to determine the present value of a set of future cash flows.

Third, there is the concept of the *risk-free rate* from the capital-asset pricing model and modern portfolio theory. This is the *hypothetical* risk-free rate that helps us to assess the riskiness of other assets and to build efficient portfolios.

[1] Senior Managing Director, BlackRock.

Fourth, there is the concept of the *benchmark bond* that is a reference for value when assessing the risk-reward characteristics of another security or spread relationships more generally. We can use sovereign or corporate bonds for this purpose. Indeed, even into the 1970s in the United States, when market participants referred to the "benchmark bond" they were likely to be referring to the bonds of either General Motors or American Telephone & Telegraph, which provided the more relevant reference for value.

Fifth, there is the *hedging vehicle of choice*, meaning the instrument that banks and investors use to hedge away (or take more of) certain risks, particularly interest-rate risk. The switch from referring to blue-chip investment grade corporate bonds as the benchmark to referring to the ten-year U.S. Treasury note as the "benchmark" occurred only in the 1990s as investors came to recognize the efficiency of ten-year Treasury securities in hedging the duration risks of mortgage-backed securities in that interest rate environment.

Sixth, there is the concept of the *base asset or reserve asset* of the banking system: the low-volatility, low-credit-risk asset around which bankers and investors build their balance sheets and portfolios. One can also think of the reserve asset as the starting point for the money multiplier. Central bank liabilities are often thought of as the quintessential "high-powered money" but sovereign liabilities appear to play this role as well, particularly for those financial intermediaries that lack direct accounts with the central bank.

The sovereign yield curve has a powerful influence over each of these six concepts. Over the last few decades, sovereign bonds have been used as pretty good proxies for each of these concepts and, thus, we tend to think about sovereign bonds as playing all of these roles. But the fact of recent habit and practice does not mean that this is a necessary condition.

In order to think clearly about "risk-free" we should be specific about the meaning of risk. Risk is deviation from objective and, thus, risk is relative. We each have different objectives and different circumstances so there are different things that can divert us from our objectives. Most financial intermediaries specify a liability, an expected return or an entire benchmark portfolio as their objective and measure risk as deviation from that.

Critical to understanding risk is *investment horizon*. Financial euphoria can be thought of as a condition in which investors have indefinitely long investment horizons and, thus, systematically undervalue liquidity. Financial crises can be thought of as the condition in which many intermediaries' investment horizons are extremely short and, thus, an extremely high value is placed on liquidity. Most investors have a specified investment horizon but they can also be easily diverted from it; thus, in practice, investment horizons are elastic.

Finally, most financial intermediaries are *volatility constrained* in that they cannot (or should not) allow their assets and liabilities to deviate "too much" from one another. The shorter an intermediary's actual investment horizon the more volatility constrained they are; the longer the horizon, the less they are volatility constrained.

What precisely do we mean by "the end of the risk-free rate"?

There are seven different, but related, claims that one might be making when asserting that we have reached a terminal point in the utility of the idea of risk-free sovereign bonds. These are:

1. Sovereign bonds are not risk free.
2. Some sovereign bonds are too risky to serve effectively as a base asset.
3. Sovereign bonds are not a good proxy for the risk-free rate.
4. There is not enough good collateral for the banking system to function smoothly.
5. There is not an entirely elastic, frictionless supply of pure interest-rate risk.
6. Some sovereign bond yields are too low to compensate for their potential future volatility.
7. The observed risk-free rate is too low to be a useful guide for investors.

Each of these claims has different implications for the behavior of investors, bankers, central bankers and financial markets.

1. Sovereign bonds are not risk free. Of course there is no such thing as a risk-free sovereign bond. Sovereign bonds have duration, curve, volatility, and inflation risks relative to investors' objectives. Foreign investors also face foreign exchange risk. All investors have always faced default risk with respect to a possible failure of sovereigns to pay interest or repay principal.

Perhaps "risk free" was meant as a shorthand for *de minimus default risk* or *free of idiosyncratic risk* as investors focused on the macro-economic risks that would reflect the behavior of the economy (and the central bank), allowing investors to ignore the condition of the sovereign issuer. But this may be too generous given market participants' acute attention to changes in supply caused by greater and lesser government borrowing requirements.

The implication of a recent "discovery" that sovereign bonds contain more risk than expected (but not so much risk as to undermine confidence in the bond's role as a reserve asset) is that investors will reduce risk elsewhere in their portfolios to return to their intended level of risk. This is how investors behaved in August 2011 when one of the credit-rating agencies downgraded U.S. Treasury debt: Treasury securities increased in price while other assets fell. The world was a riskier place than investors anticipated but Treasuries remained a "good enough" reserve asset, so they reduced overall risk in their portfolios while retaining or increasing their holdings of Treasuries.

2. Some sovereign bonds are too risky to serve effectively as a base asset. This claim reflects the observed behavior of intermediaries when they decide that particular sovereign bonds no longer provide them with sufficiently low volatility (and high liquidity) to play the role of a stabilizing, core holding. It may reflect heightened default risk or it may simply reflect higher observed volatility, caused by unstable or uncertain supply and demand conditions. It is important to note that this is binary: either an asset is or it is not "good enough" to anchor a balance sheet.

In the European crisis we have observed Greek, Portuguese, Spanish and Italian government bonds decline precipitously in price and exhibit much greater volatility. My sense is that many banks, pension funds and sovereign wealth funds did not make a conscious decision about default risk but simply could not accept such heightened volatility in an asset whose purpose is to provide low volatility.

The implication of losing the status of base asset is that monetary conditions are effectively tightened as the supply contracts of what is accepted as a reserve asset and good collateral. The forcefulness of the European Central Bank's responses over the past year has been aimed at restoring base asset status particularly to the Spanish and Italian governments to avoid such a tightening.

3. Sovereign bonds are not a good proxy for the risk-free rate. Sovereign bonds are not at all a good proxy for the risk-free rate.

The risk-free rate of the capital-asset pricing model and modern portfolio theory is *hypothetical* but the suggested real-world proxy is the yield on *short-term government bills*. The yield on short-term U.S. government bills has been falling for most of the last thirty years (see accompanying chart). Somewhere along the way it came to be accepted (mistakenly) that we could shift our concept of the risk-free rate out the yield curve to ten-year government bonds.

Since the 1980s, we have been living through the historical anomaly of concerted disinflationary policies. As a consequence, as central banks were following (or anticipating) Taylor-rule disinflationary policies, the returns on cash and cash equivalents – such as short-term government bills – have on average been somewhat greater than the sum of the real growth rate and the rate of inflation.

This is quite a handsome rate of return for something that is our best proxy for risk free. Normally we think of "cash" as the thing that is perfectly liquid, has no volatility (trades ever at par) and earns no return. But because central banks sought to wring inflation out of their economies, the risk-free rate proxy provided on average a consistent, positive, real return. With this "risk-free rate" as our starting point, and as our refuge in times of volatility, investors could seek even higher returns for taking risk.

Not only were short-term bill rates high, they were also declining as inflation was, in fact, progressively squeezed out of the system. While we enjoyed the disinflationary trend, in a bit of muddled thinking, long-dated sovereign bonds slipped into our vocabulary as being "risk free" – perhaps because they provided the even-better-yielding risk-free total return bonanza as rates consistently declined.

Now bankers and investors are waking up from the long bull-run in interest rates to the awkward reality of more risk and less return *than they have been accustomed to* and to the recognition that long-dated sovereign bonds are not a good proxy for the risk-free rate.

4. There is not enough good collateral for the banking system to function smoothly. There are two different ways to think about this claim.

First, this might just be a complaint about the high price (and low yield) of government bonds. With yields so low the opportunity cost of holding government bonds as a base asset, or as collateral to secure financial transactions, is correspondingly high. Those who fear that the banking system will not "function smoothly" may just be expressing the sentiment that it will not function the way that they are accustomed to. But this might also be a much stronger, more interesting claim, that monetary conditions are actually tight or even too tight.

Perhaps I will be proved wrong and historians will look back at the present time as the start of the great collateral shortage. If that happens, it will likely be a consequence of the fact that central banks are, in fact, hoarding what we think of as the best collateral: government bonds.

Some central banks (and sovereign wealth funds) have accumulated developed market sovereign debt for the purpose of managing their exchange rates.

Major developed market central banks have been accumulating (principally their own) sovereign bonds for the purpose of providing monetary accommodation via quantitative easing. By bringing down the cost of borrowing they hope to stimulate economic activity and by bringing down the discount rate on future cash flows they hope to push up asset prices (housing and equities).

By hoarding progressively more sovereign bonds the central banks collectively are also draining the best collateral, the base asset, out of the banking system. On balance does this provide accommodative or restrictive conditions?

If we were living in a modified gold regime, where gold was the base asset of the banking system, and you learned that the central bank was progressively buying and hoarding gold, would you think that the central bank was easing or tightening policy?

My first guess would have been that this was a policy of tightening by contracting the availability of the reserve asset. If the banking system were crying out for more central bank liabilities and eager to swap gold for central bank deposits, then perhaps this would appear as an easing of policy. But in the absence of evidence that the level of excess reserves was inadequate for the needs of banking system, a central bank that was hoarding gold would – curiously – be pushing down on short-term interest rates (by issuing more of its own liabilities) but, at the same time, tightening monetary conditions by removing the banking system's preferred collateral.

To be taken seriously, the claim that there is not enough good collateral for the banking system to function is a claim that monetary conditions are too tight. Given the expressed intention of the Federal Reserve, and other central banks, to provide accommodative policy, this claim presents a contradiction that is yet to be resolved.

5. There is not an entirely elastic, frictionless supply of pure interest-rate risk. For some, expressing angst about the end of the risk-free rate appears to reflect a sense of entitlement to a perpetually available, elastic abundance of default-free, low-volatility, positive-real-return-yielding, pure expressions of nominal and real interest-rate risk in the form of long-dated sovereign liabilities and their synthetic-derivative clones that can be bought and sold at such low transaction costs as to be virtually frictionless. If this is what you had in mind, and you thought that this was a necessary and enduring feature of a smoothly functioning banking system, then you had best prepare yourself to be disappointed.

That we have experienced something like this "elastic abundance" in recent decades is an historical serendipity – a consequence of the long decline in interest rates and of our collective willingness to obfuscate counterparty risk in over-the-counter derivatives.

In the early days of the derivative market counterparty risks were simply ignored. Then the dealers created "AAA Swap Co's" but found this expensive. Subsequently, the dealers persuaded the authorities to treat derivatives, in the event of a counterparty failure, as senior to all other claims, thereby socializing the cost of

counterparty risk away from derivatives contracts and onto all other creditors. Now, in the wake of the financial crisis (and the AIG debacle, in particular), the authorities have decreed that over-the-counter derivatives will be cleared through central counterparties with counterparty risks collateralized with initial and variation margin.

If the authorities are successful, the cost of writing and holding derivatives contracts will go up as counterparty risks are internalized. At the same time, the opportunity cost of "suitable collateral" is rising (as yields on highly-rated sovereign debt fall).

If the elastic abundance of pure interest-rate risk is an accident of history, as I suggest, then the cost of hedging and speculating in interest-rate risk (and other risks expressed in over-the-counter derivatives) will be higher and in all likelihood there will less of it and, correspondingly, lower revenues from these activities for the bankers and dealers.

6. Some sovereign bond yields are too low to compensate for their potential future volatility. This claim can be thought of as merely reflecting investors' and bankers' frustration that the yield on sovereign bonds is too low. More importantly, it may be evidence that we are in a liquidity trap: that the yield on long-term lending is too low to compensate for the potential future volatility (or backup) in yields, so investors and lenders will prefer to invest and lend only for the very short term.

Those central banks pursuing quantitative easing believe themselves to be easing policy via the "portfolio balance" channel. As the central bank hoards sovereign debt (and, in the U.S., mortgages), other investors will be forced to replace those assets (in their portfolios) with assets bearing a comparable or greater amount of risk and this will lead the actions of investors to further bring down interest rates, ease financial conditions and encourage credit creation.

But the impact on other investors' portfolios is more ambiguous. As the central bank seeks to solve the zero rate boundary by hoarding long-term bonds and dragging real rates lower, some investors can and do chase yield with some of their portfolio by buying other risky assets, such as high-yield bonds.

Yet with each move higher in bond prices, and lower in yields, investors and lenders of all types reasonably fear the reversal of this process when prices decline and yields rise. Importantly, most financial intermediaries are *volatility constrained*: they cannot allow the price movements in their assets and liabilities to be too far out of alignment over relatively short periods of time. As the nominal coupon on long-dated bonds is dragged lower, it no longer compensates the intermediary for the potential future volatility. Moreover, volatility *is* bounded at zero and as it approaches zero investors (particularly ones that have recently experienced the volatility shock of 2007 and 2008) brace themselves for higher volatility.

As yields move lower investors can also observe the lower opportunity cost of holding cash and cash equivalents. So as the central banks drag down the level of interest rates, the more attractive cash becomes on a relative basis, leading to a less favorable portfolio re-balance that looks just like a liquidity trap – but perhaps might always have been better labeled a volatility trap.

Perhaps the Federal Reserve is intentionally driving the banking system through a liquidity trap and "out the other side" in the hope of incenting banks to write loans, rather than buy securities, as their net-interest margins contract. But this will depend on the willingness of bankers, and the providers of bank capital, to accept the higher risks rather than to shrink their balance sheets.

7. The observed risk-free rate is too low to be a useful guide to investors. This claim might just be that yields on government bonds are being manipulated by central banks and, thus, are artificially too low or too low compared to what investors expect. But it can also be interpreted as a claim that such a low risk-free rate will incent investors to reduce their risk taking at the very time that central banks are pursuing quantitative easing policies aimed at encouraging investors to take more risk.

Central banks control the risk-free rate – properly understood as the yield on short-term government bills. This is a fact of financial life but not one that we often think about. The capital-asset pricing model and modern portfolio theory take the risk-free rate as "given" rather than as "decided". But when U.S. Treasury bill yields were over 16% in 1982 they were just as "manipulated" by the Federal Reserve as are the low yields today.

For investors, the risk-free rate is what it is. Today it is effectively zero. For most of the last sixty years it has been much higher. Is there an equilibrium risk-free rate? If the long-run, real return to capital is, say, 2½%, should that be the long-run risk-free rate? I don't know. My hypothesis is that an equilibrium risk-free rate is lower than most investors have to come to expect (having become habituated to conditions over the last thirty years) but that it is or should be higher than zero. But the observed risk-free rate over the past three years *is approximately zero.*

QE-practicing central banks, like the Federal Reserve, face a conundrum. To stimulate the economy (or perhaps to prevent deflation) the central bank lowers interest rates. This brings down the cost of borrowing and the discount rate on future cash flows. The *change* in rates induces changes in borrower and lender behavior. In order to encourage this change in behavior (and also to reduce concern about rates abruptly rising), the central banks have made various, conditional commitments to maintain exceptionally low interest rates.

But the longer central banks hold down the level of rates, and the more credible is their commitment to do so for an extended period, the greater the likelihood that investors will become habituated to an exceptionally low risk-free rate. This will make other assets investors might purchase appear riskier (than they otherwise would).

As investors come to internalize a much lower risk-free rate, there will be a tension between their habitually-received expected returns (and habitually-received notions of the risk-free rate) on the one hand, and the risk-free rate of zero that we now observe, on the other.

Thus, the longer central banks sustain exceptionally low rates, the more likely it is that the portfolio balance channel will be self-defeating. In colloquial terms, it may be that "the bubble will burst" when rates go back up. But, alternatively, it may also be that "the air will come out of the balloon" when investors internalize the exceptionally low risk-free rate.


A Complete History of the Risk-Free Rate
3-Month U.S. Treasury Bill - Secondary Market Rates
Percent
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan-54
Jan-60
Jan-66
Jan-72
Jan-78
Feb-84
Feb-90
Feb-96
Feb-02
Feb-08
Source: Board of Governors of the Federal Reserve System/FRED

Risk-free assets in financial markets

Alberto Giovannini[1]

1. Introduction

The events of the past two decades have shaken many beliefs commonly held in financial markets: one of those is the faith in government debt as the cornerstone of the financial system. During the 1990s, in a number of countries, the issue of the disappearance of government debt was seriously considered. In the United States, for example, projections indicated the disappearance of federal government debt as early as in the next four decades. This prompted analysts to discuss how the financial system would work without government debt (see eg Fleming (2000)). Some argued that the function of providing benchmark interest rates for the rest of the economy could be performed by other markets, such as the interest rate swap market. Others maintained that government securities are an essential pillar of the financial system, and thus advocated that governments use resources raised through the issuance of debt for investment.

More recently, the opposite problem presented itself: government debt levels exploded as a result of the financial crisis and the extraordinary bailouts engineered by many countries. In Europe, the fragility of government finances generated a harsh repricing of many sovereign issuers, prompting a financial crisis that many feared would precipitate a breakup of European monetary union.

Because of these events, it is fair to say that government debt "is not what it used to be" in the financial system. Once again, observers are asking whether we can conceive of a financial system without risk-free sovereign securities.

This paper discusses the role of sovereign debt in the financial system. Section 2 lays out the problem by describing the way financial systems were thought of as working until a few years ago. This description of the standard model of the financial system helps highlight the magnitude of current problems. Section 3 analyses in more detail the role of safe assets in the financial system. Section 4 discusses the effects on financial markets of the credit deterioration of sovereigns. Section 5 contains some observations and conclusions from the main points discussed in the paper.

2. The standard model of the financial system

It is appropriate to start a discussion of the role of sovereign assets in the financial system by recalling what for a long time has been the perception of the basic structure of financial systems and, in them, the role played by government securities. I will call this the standard model.

[1] Chief Executive Office, Unifortune.

In the standard model, sovereign debt is free of repayment risk, in nominal terms. In other words, all future promised currency amounts for coupons and principal are deemed to be certain cash flows. The absence of nominal risk was justified by two arguments. First, the government has taxation and confiscation powers. Second, the government can ask the central bank to provide financing. The central bank has unlimited resources because it can always create money. Recently, this second argument has been de-emphasised by the reforms undertaken in several countries, aimed at establishing the independence of central banks from treasuries. However, it has resurfaced with a vengeance in connection with the euro crisis, as commentators have explained the comparatively high rating and low yields of US federal debt and UK government debt, ie the debt of two countries with strained public finances, by reference to the presence of a central bank capable of bailing out the government.

In a world where cash flows attached to government securities are deemed risk-free, sovereign bills and bonds become the benchmark securities for pricing and discounting: the benchmark risk-free term structure of interest rates, where long-term rates reflect only uncertainty about future short-term rates. Current and expected short-term interest rates, in turn, reflect inflation expectations (Fama (1975)).

In this standard model the perceived risk-free nature of sovereign debt justifies its zero risk weighting in banks' balance sheets. Banks become the default client of sovereigns; they hold sovereign debt as market-makers and (in the short maturities) for transaction purposes. As I will explain below, a very large proportion of the securities-based financial system requires means of transactions, and riskless government securities (those short-term securities that are free of interest rate risk) are the best candidate for this function.

The pillar of sovereign securities, held in comparatively large quantities by bank intermediaries, is one reason why banks' liabilities are also regarded as a close substitute for them. Banks' liabilities are nearly riskless, because deposit insurance and bank supervision are expected to work well. As a result, there is a thriving unsecured interbank market, which redistributes liquidity among this important section of the financial system .

I have taken the time to describe the standard model – the real world a couple of decades ago – because I think this helps highlight how far, currently, financial markets are from it. Currently, strained public finances have raised questions about the ability of governments to repay their debts, because observers do not think their taxation and confiscation powers may be enough (there is always a limit on how much governments can tax) and because there are also limits to the ability of central banks to finance governments, quite apart from the fact that many central banks are prohibited from financing governments directly.

The credit risk now attached to government securities has also spread to the banking system. The unsecured interbank market has collapsed (due only in part to the sovereign crisis, and mostly to the financial crisis, which unexpectedly uncovered very large risk positions held by many banks). Banks' liabilities are regarded as risky.

So, the question now is, can the system work without riskless assets? To answer this question I need explore the value (that is the function) of riskless assets in the current financial system and the potential of alternatives to sovereigns.

3. The value of safe assets

Safety is, of course, a relative concept, being determined by human perceptions. In financial markets assets are regarded as safe when their value fluctuates less than that of any of the alternatives. Where does the value of safe assets come from? Safety has value stemming from two functions it attracts.

The first is a price-discovery function. For example, Dunne et al (2007) show that, in a relatively general setting, a security that has no idiosyncratic risk, which can be defined a benchmark security, is co-integrated with all others with the feature that the co-integrating error term has minimal variance. Therefore the security with minimal idiosyncratic risk is the ideal benchmark for pricing all other securities.

In the real world, benchmark securities attract trading volume – typically from index-based investment strategies, as well as relative-value strategies, where the benchmark is used as a hedging security. The liquidity that benchmarks attract has value, and it is reflected in the lower yield they command.

There is another, separate, function that safe assets perform, and that is what I call means of transactions in financial markets. Financial markets have minimised frictions in transactions, far more than in the rest of the economy, through the adoption of standardised transaction contracts and the use of technology which allows high-frequency marking to market, the settlement of changes in value of the contract, so that the two parties do not take on credit risk with the fluctuations of contract values. Yet this has not eliminated the need for collateral. Collateral is needed because marking to market does not occur in continuous time and because, even in the theoretical case where such bilateral settlements occur at very high frequencies, some securities may have discontinuous jumps in their dynamics.

For these reasons, two parties entering into a financial contract (and this includes the case of investors gaining access to exchanges) make use of initial margins, which provide a buffer against price movements that occur between the consecutive settlements of variation margins, as well as the higher-order guarantee of the ability of counterparties to liquidate variation margins. Because collateral is made up of financial assets, it is intuitive that the higher the volatility of the price of the collateral, the higher the initial margin. Hence, safe assets are sought after because they help economise on financial transaction costs.

Thus collateral performs functions that are typical of money. In addition, just like money, collateral can get "multiplied". The phenomenon of money multipliers is known from economics textbooks: after a central bank operation which increases reserves in the banking system, the latter will create commercial bank money (checkable deposits) which is then redeposited into the banking system as a result of transactions in the economy, and leads to further, albeit smaller, increases in commercial bank money, and so on until excess reserves in every commercial bank equal zero. Similarly, after its creation and its pledge, collateral can get back into circulation through re-pledges creating a phenomenon similar to the money multiplier (Singh (2011), Claessens et al (2012)).

We know from monetary economics that too much money in the economy can produce overheating, inflation and other macro imbalances, while an uncontrolled contraction of money in circulation can cause balance sheet stress and recessions – for this reason central banks have developed as the guardians of the various monetary aggregates. Similarly, too much collateral in circulation may support too

much risk-taking and risk concentration in the financial system, and a sudden contraction in collateral (as was observed in the recent crisis) can cause disruption, just like a sudden contraction in the money stock.

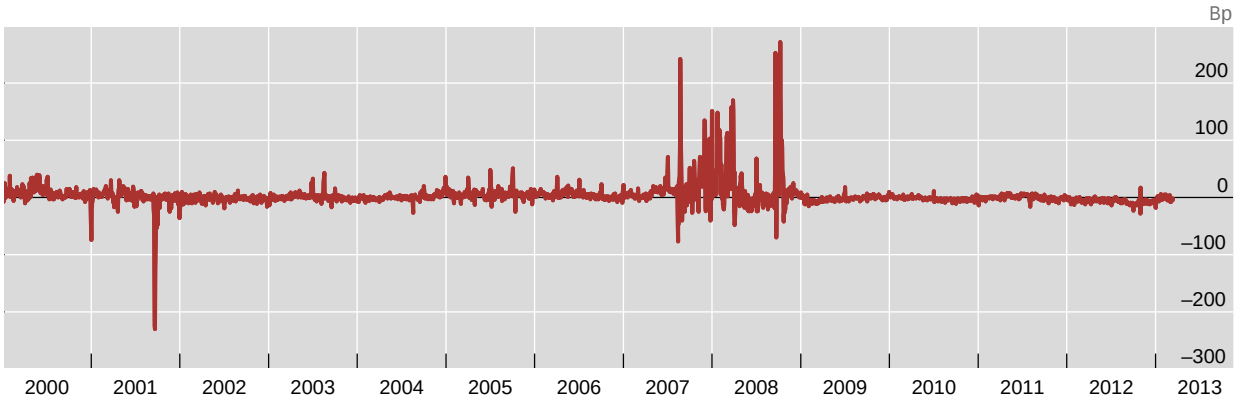
The moneyness of collateral, which makes it valuable, is an incentive for the private sector to create it as well (Stein (2012), Giavazzi and Giovannini (2011)). I have mentioned commercial bank money: it is the first example of privately created collateral, though it is currently not used as such, if anything because the typical feature of deposit insurance, a cap on the size of the deposits insured, makes it unwieldy for the purpose of financial transactions, which tend to have minimum sizes that are many times that cap.

So the private sector has "competed" with governments in the provision of safe assets in other ways: the so-called shadow banking system has become a collateral factory. In order to decrease the riskiness of fixed income securities, special purpose vehicles have been used to tranche the cash flows from the underlying assets, which have ranged from mortgages to bank loans to trade credits. With proper choice and assessment of underlying assets, tranching can achieve the approximate risklessness that is required for these assets to perform the role of collateral.

The financial crisis has shown, however, that the boom in collateral creation has come with two fatal weaknesses: errors in the design of the securities, leading to undervaluation of credit risk, and overlooking of liquidity problems. At the height of the financial crisis, even privately created collateral that was safe from a pure credit perspective collapsed in value, due to the absence of liquidity, sometimes with perverse feedbacks into credit risk.

The moneyness of collateral suggests a role for central banks. Because excessive fluctuations of the stock of collateral can produce aggregate distortions, there is a need for some oversight over its growth and distribution. And this argument is supported by the simple observation, which I borrow from Klee and Stebunovs (2011), that central bank money and collateral are imperfect substitutes, as illustrated in the graph below, showing the spread between the fed funds rate and general collateral repo rate.

Federal funds rate-overnight GC repo spread — Graph 1



Sources: Datastream, ICAP.

4. Where have all the safe assets gone?

The emphatic title of this section only stands to underline the key issue we are currently facing, associated with the worldwide deterioration of sovereign creditworthiness.

Here I want to focus on the events in Europe, which I believe help uncover additional pathologies caused by the dwindling role of sovereigns in the financial system. The development of the sovereign crisis in Europe has shattered a decade of stability since the introduction of the euro. The European financial system has undergone a number of concerted reforms, under the name of the Financial Services Action Plan (FSAP) aimed at eliminating many barriers to integration – though some of the most important structural reforms, those pertaining to the so-called financial market infrastructure, clearing and settlement systems, have been stopped by interested parties.

The explosion of the sovereign crisis has helped highlight the role of sovereign assets in the financial system. The immediate impact of the crisis has been on the banking system, which in many countries is the largest holder of government debt for the reasons described in Section 2: market-making and low balance sheet costs.

And through the bank channel the crisis has spread to the rest of the system. For example:

- Large country factors have re-emerged in equities markets.
- Identical corporate credits in different countries have been priced differently, off the domestic sovereign rates.
- Securities clearing and settlement systems are showing strains, originating from cross-country business.
- Authorities in some countries have mandated financial institutions to match geographically their assets and liabilities.

Hence the sovereign crisis in Europe has stirred a process of disintegration of the financial system. More narrowly, it has demonstrated that a truly integrated system needs one single reference asset. In the absence of full pooling of sovereign risk, which, as Brunnermeier et al (2011) have shown, does not require a system of fiscal transfers across member states, full integration of the financial system in Europe is unlikely to be achieved.

5. Concluding remarks: which way forward?

The first concluding observation from my discussion of safe assets and the role of sovereigns is that safe sovereigns are necessary for a properly working financial system. This conclusion stems from two observations. First, frictions in financial markets need efficient means of transactions, ie they need risk-free assets. Short-term government securities are the first candidate for that role.

The second reason why I see a central role for government issuers is based on the general observation that governments have a comparative advantage in the supply of safety in our economies. Governments have a comparative advantage in

risk aggregation and governments have direct and efficient access to allocation of resources through the tax and spending system.

Even the large production of privately issued collateral that characterised the years up to the 2008 financial crisis relied implicitly on a perceived government backstop: indeed, one that materialised through the bailout of the banking system in numerous countries.

These observations lead me to suggest two main areas of analysis and initiatives by authorities in the coming years:

1. Managing the nonlinear dynamics of systemic risk, which has proven to have destructive effects on public finances: this will require careful monitoring – and perhaps in the future targeting – of collateral aggregates.
2. Figuring out ways to revalue the role of governments in the production of safe assets: much as private financial markets have used diversification and tranching to produce safety, governments could use the same tools, more effectively than the private sector.

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Financial markets without a risk-free sovereign

Hiroshi Nakaso[1]

Today, I want to talk about the question of "can financial markets work well both in normal times and under stress without a risk-free sovereign?" from the perspective of reference interest rates. In various initiatives including work by IOSCO and the Wheatley Review in the UK, the issues related to reference rates with a particular focus on Libor have been dealt with mostly from a regulatory and governance point of view. But reference rates have far-reaching implications for monetary policy transmission and financial stability, and for market functioning, more broadly. So I thought this issue would be relevant for this seminar.

A key feature for Libor-type reference interest rates is that they comprise a risk-free rate and a credit risk premium that reflects the perceived common credit risk of the sample of banks contributing to the reference rate; this component may be called the *"common bank risk",* which can be described as a common bank funding cost. The fact that Libor-type reference rates contain a credit risk component has implications for monetary policy and financial stability.

In terms of monetary policy, the transmission mechanism through the interest rate channel will be ensured to the extent that Libor-type rates and the policy rate move in tandem. However, in crisis periods, the credit risk component embedded in the reference rate tends to rise and become increasingly volatile. This implies that changes in policy rates do not necessarily influence interest rates such as the loan rate in the same way that they would in normal times. In an extreme case, a reduction in the policy rate may be more than offset by the increase in the credit risk premium, thus undermining the intended monetary policy stimulus. Indeed, we saw how key reference rates with a *common bank risk* component drifted away from policy interest rates during the 2007–08 crisis period.

In terms of financial stability, Libor-type reference rates transfer lender banks' funding cost risks to borrowers. This enhances risk reallocation and, to the extent that end-borrowers can bear and manage these risks, it contributes to financial stability. If, however, the reference rate does not correctly reflect the *common bank risk,* the use of the reference rate can spread mispricing to other parts of the financial system, facilitating the build-up of financial risks. This could threaten financial stability.

The potential limitations to Libor-type reference rates with a credit risk component did, in fact, materialise during the 2007–09 crisis period. There may be three reasons why such limitations became apparent. First, the increased dispersion of the credit risks on individual banks, when the credit standing of individual banks became extremely disparate. As a result, the reference rate became less and less capable of capturing the *common bank risk*. From an individual bank's point of view, it became irrelevant to price a loan with a reference rate that no longer correlated with the bank's real cost of funding. Second, unsecured interbank market activity declined noticeably. This raised the question about the representativeness of such reference rates, given that Libor rates are based on the unsecured interbank market.

[1] Deputy Governor, Bank of Japan.

Third, there is a trend in the market to ever larger interest rate derivatives transactions, although this is not directly linked to the crisis. Interest rate derivatives contracts, such as swaps, entail interest rate risk and *not* bank funding cost risk. Thus, reference rates that do not contain a credit risk component would probably be more appropriate for use in transactions designed to manage exposure to interest rate risk. Additional demand for reference rates without a credit risk component is likely to be generated by structural changes in derivatives markets, such as the wider use of collateral and the move to clear through central counterparties (CCPs). The collateralisation of derivatives portfolios is a clear response to the crisis. Indeed, we know that the portion of collateralised contracts in the OTC derivatives market rose from 30% in 2003 to more than 70% in 2011, after the crisis. Some academic papers have suggested that a discount factor with a credit risk component is unsuitable for the NPV calibration of a derivatives portfolio. And we hear from contacts in the marketplace that more and more derivatives market participants are now using risk-free or near risk-free rates as a discount factor when calibrating the NPVs of their derivatives portfolios.

Reference rates based on unsecured interbank markets were for many years seen as a good proxy for bank funding costs. And given a small and stable common bank risk premium, they were also seen as representative for instruments with a very limited credit risk. That is probably why Libor-type rates have also been used for evaluating interest rate derivatives. It is only since the 2007–09 crisis that the robustness and representativeness of the Libor-type rates have been challenged.

In view of the three reasons for the limitations of Libor-type reference rates, a simple answer would seem to be to do away with the Libor-type reference rates and shift to an alternative risk-free reference rate, which might have to be invented. But this won't be easy, for a variety of reasons. First, a reference rate is a kind of public good and therefore the private sector has only a limited incentive to develop a new one. Second, there is the long history of using the Libor-type reference rates – adding up to *inertia* – and there are also the *positive externalities* arising from the fact that everyone has hitherto used the same kind of reference rate as a "common language". The inertia and positive externalities make the existing Libor-type rates hard to displace. Third, inventing a new way to represent *common bank risk* is not altogether easy. One way might be for lender banks to shift to using a risk-free rate plus a fixed spread that would be agreed at the start of the loan, but this would leave the risk of changes in the funding cost with the lender bank, because the spread remains fixed throughout the life of the loan.

So what should we do? The developments I have mentioned may argue in favour of a co-existence of multiple reference rates; some with a credit risk component and some without. Market participants could then choose the reference rate that best serves their purpose, whether that is to price loans or manage exposure to interest rate risks. Then, there is, of course, the question of what kind of risk-free reference rates we should have. I don't have a clear answer, except to say that a range of candidates may exist. Risk-free sovereign rates include yields on actively traded government securities or government collateral (GC) repo rates. Unsecured overnight rates can be seen as almost risk-free because of their short maturity as well as the fact that this is the policy rate for many central banks. The overnight interest rate swap (OIS) rate is a derivative of the overnight rate that could be used for the pricing of loans and derivatives contracts with fixed maturities. However, many jurisdictions currently lack OIS reference rates. I personally believe in the potential for the OIS to be developed into a useful reference rate in the future. OIS contracts are a form of interest rate swap. If standardised, they could be

cleared through CCPs in the future. In that case, CCPs would be excellently positioned for the collection of data and the formulation of reference OIS rates. In any case, there is currently no Libor equivalent for the risk-free or near risk-free reference interest rate. The pros and cons of each candidate may have to be further explored.

Going back to the question raised at the outset; "can financial markets work well both in normal times and under stress without a risk free sovereign?" As far as reference rates are concerned, my answer to the question would be "No, not over the medium term." To reiterate, Libor-type reference rates that have credit components will continue to play a key function, given the legitimacy they have in representing common bank risk, the positive network externalities, and the large stock of legacy contracts using these reference rates. Still, the changes in the behaviour of existing key reference rates and the need for new risk-free or near risk-free reference rates, particularly after the financial crisis, would seem to argue for greater diversity in the choice of reference rates, so that the individual needs of market participants could be better met. This would, in turn, contribute to the improved functioning of the market.

Risk-free assets: an unreachable dream or a must

Sergey Storchak[1]

First of all, I would like to thank the BIS management for choosing me as one of the policy-makers for the Panel 3 discussion.

My daily job is heavily linked to the issue of risk-free assets, as I am here in three capacities: as a debt manager responsible both for setting up Russia's borrowing strategy and for daily operations of our debt management office (DMO); as an asset manager responsible for setting up Russia's policy in the field of managing money, accumulated in the Reserve and National Wealth Funds (now it is 9 percent of Russia's GDP), where the Central Bank of Russia is responsible for daily operations; and as the Deputy of the Minister of Finance responsible for both setting up Russia's priorities during our G20 Presidency in 2013 and implementing them. Occupying the first two of these positions, it is definitely a must for me to keep an eye on the local and global debt market developments, including on the risks associated with the very sad fact that some debt securities are losing their status of risk-free assets. In my third capacity, I need to explain why Russia has decided to initiate the discussion between G20 members on sovereign debt issues.

So, my presentation will consist of three parts. In the first one, my story will be about the job of the sovereign wealth fund manager in the recent economic conjuncture. In the second part, I will explain our view on the problem of risk-free assets as a sovereign borrower. And in the third part, I will explain our approach to the G20 tasks in the field of public debt management.

Sovereign wealth fund manager

Let me start with a simple question. Does anyone among us really believe that risk-free assets exist? Deep in our hearts, we all know that such assets never existed and will never exist in the market economy. Otherwise, we would live in a different world, in the world where private initiative and individual decisions are punished, not rewarded as it happens when risks are taken.

Nonetheless, for years market participants have been doing their business on the assumption that there are risk-free assets. I believe that this concept is a natural human reaction to the complexity of the world surrounding us. The risk-free theory was welcomed because it made decision making much easier. And we are always looking for simple decisions! Plus, the risk-free methodology turned out to become the cornerstone in different mathematic models for the calculation of the value of any financial asset. From the very beginning a number of sovereign bonds were treated as risk-free financial instruments. Credit rating agencies helped a lot in this understanding with their "AAA" versus "BBB" or "CCC" references.

Was it bad for practical asset managers? Absolutely not! To the contrary – it helped a lot. When eight years ago at the Ministry of Finance we very unexpectedly

[1] Ministry of Finance of the Russian Federation.

received the government's order to work out the draft of the rules to be used for managing our Wealth Funds money, our reaction was very simple and – as we were already responsible for debt management – obvious: this money needed to be invested into risk-free assets, as they were safe and liquid. Nobody argued or complained! At the beginning. Only after a number of years we found ourselves under enormous criticism. We were accused of … feeding foreign economies. Now, with the open debate on the status of risk-free assets, we expect that these attacks will intensify.

For those who are in charge of sovereign wealth funds management, the outcome of our debate is that of a practical meaning and of a political dimension. We are being asked to earn more return at the same level of risks. It means, at least, that we will have to buy much longer maturities even if the problem of risk-free assets will stay with us for many years to come. Plus, we'll be in great need of a much bigger tolerance from higher level management if our decisions result in intermediate losses.

So, summing up: in the world of the global economy and heavily linked financial markets, asset managers cannot remain neutral toward the sharp deterioration of the debt-to-GDP ratio in a number of economies, whose sovereign bonds were used for years as risk-free assets. That's why it is very important to see that fiscal authorities in these countries are developing and implementing policies aimed at restoring the status quo: bonds issued by developed economies need to be treated as risk-free assets. For my colleagues and me, it is a matter of professional survival.

Sovereign debt manager

Now, a couple of words from my position as a sovereign borrower. Many emerging market economies (EMEs) have reached the stage when our local currency bond markets (LCBMs) can be 100 percent reliable as a source of financing our budget deficits. Even more, we have evidence that EMEs' sovereign bonds are already being treated as almost risk-free assets. In any case, the demand for this class of financial assets is increasing. For me it means that G8 and afterward G20 initiatives on the development of LCBMs are producing concrete results. I believe it is good news for market participants and for global financial stability.

But if it is not the case, the remarkable thing about risk-free assets is that any sovereign needs to keep in mind that within its own territory there are hundreds if not thousands of economic agents for whom sovereign bonds are risk-free assets, no matter what credit rating agencies think about them. Let us have a look at the Central Bank of Russia instruction on the way risks are assessed and reserves accumulated. In Russia the regulator makes its position clear: national government bonds are risk-free instruments. They are included in the first (highest) group of financial assets and their risk coefficient is stipulated as zero. By the way, in the same group the Central Bank of Russia keeps credit claims on multilateral development banks (MDBs). Their bonds have the same status. Economic agents are in great need of this kind of asset. Locally, our bonds and that of MDBs are of the same quality even though credit rating agencies still treat Russia as a "BBB" borrower and the World Bank, for example, as a "AAA" borrower.

So, any market economy needs to have risk-free financial instruments. For any DMO, to issue one should be a must, not purely an unreachable aim. We fully support the BIS initiative to start a comprehensive discussion of this issue including the possibility of deep change in the whole mandate of DMOs.

Russia's proposals within our G20 Presidency

There are a number of reasons why we decided to pick up public debt management as one of Russia's priorities. First, it looks a bit strange that sovereign debt issues are still not on the G20 agenda while they are on the front pages of the mass media. For us, since we are buying huge amounts of sovereign bonds, it is quite natural to try to fill this gap. Second, at G20 level we are very close to the final stage of implementation of the LCBM initiative. So, we believe that the more access borrowers from EMEs have to the debt markets, the more responsibly public debt management will need to be pursued. Third, we believe it is high time to study lessons of recent sovereign debt crises, since the most critical stage has already passed and G20 discussions would not harm the markets.

Clearly, debt issues have a lot of dimensions. But not all of them are worth discussing. For example, we are being approached by non-governmental organizations with proposals to restart examining the possibility of reaching agreement on a statutory approach to debt restructuring. But we will never attempt such an examination, since I know for sure before discussion even starts that there is only one practical way to come to an agreement – to negotiate. That is why we are going to advise the G20 finance ministers and central bank governors at the meeting in Moscow in February to endorse the Addendum to the "Principles for Stable Capital Flows and Fair Debt Restructuring" developed by the IIF.

So, we are looking at the debt problem differently and, by the way, in line with many of you sitting around this table. Our basic assumption is the following. The debt market situation has changed dramatically. For many years to come the debt-to-GDP ratio will remain at very high levels, new sovereign borrowings will serve the need of debt repayments, and sooner or later interest rates will start rising, making debt service for a number of economies unaffordable. All these would mean that DMO operations on debt markets would not remain neutral toward fiscal and monetary policies as they were during the last decade in many countries including Russia. We can predict, for example, that central banks will be very active at the longer end of the yield curve though it never happened previously. It looks like, for many DMOs, it will be quite difficult to sell sovereign bonds on the basis of the classical approach, when their aims are to minimize the borrowing cost in the medium-term horizon subject to acceptable levels of risk. The refinancing risks are becoming quite high for many sovereigns.

If our colleagues from the G20 agree to this very preliminary analysis we will propose to go further in the following directions.

First, to see whether a number of documents agreed on at the multilateral level can still be relied upon as the basis for setting up national borrowing strategies and for doing market operations. I am speaking about the IMF and World Bank "Guidelines for Public Debt Management," "Guiding Principles for Managing Sovereign Risk and High Levels of Public Debt," the IMF tool for "Public Debt

Sustainability Analysis," the IMF Fiscal Monitor, the G20 Toronto debt targets and other international and national fiscal rules and frameworks.

Second, to analyze the usefulness and feasibility of merging them into one single set of principles/guidelines/frameworks or into something else.

Third, to discuss a possible new role (mandate) of DMOs in the changed global macroeconomic environment.

Fourth, to see whether it is possible and reasonable to make the above mentioned rules binding for the IMF members. Another option is to think about an internationally agreed set of budget rules. In Russia we already have one, but it is rather complicated, as it links the management of oil and gas revenues, the budget deficit and sovereign borrowing. I personally like the way it was done in Switzerland with the budget rule named "debt brakes." In any case, based on the outcomes of our conference we can look forward to setting up new principles for the work of DMOs, including one linked to the necessity of keeping sovereign bonds as risk-free assets.

Think the unthinkable on US debt

Robert Jenkins[1]

Will the US request a bailout? Will the International Monetary Fund grant it? On what terms and conditions? What writedown of US debt will be needed to restore sustainability to its fiscal accounts? What impact will this have on world financial markets?

These are not questions being asked today but they are questions worth contemplating. Thinking the unthinkable is one of the lessons of the eurozone saga. Another is the speed with which complacency can convert to crisis. So although I am not predicting Armageddon, I would like to signal a series of factors that policy makers of all nationalities would do well to keep in mind.

The first is that a small percentage of a big number is a big number. US debt outstanding exceeds $16tn. Each percentage point rise in interest rates adds (over time) $160bn to annual debt financing. Thus a 5 per cent rate rise adds $800bn to the budget deficit and, given compounding, more than $8tn per decade to the national debt.

The second factor is that more than 45 per cent of tradable US debt is held by foreigners. The Japanese are in hock to the Japanese people. The US is in hock to – among others – the Japanese.

Third: sovereign bonds are no longer presumed to be risk-free. Indeed, there is now general awareness that at some level of financing costs, government debt becomes unsustainable. Five years ago, posing the question: "At what interest rate does Italy or Spain's deficit financing become untenable?" to analysts, economists or journalists would have elicited a shuffling of the feet or a shrug of the shoulders. Ask today and the quick reply will be: "Why 7 per cent of course". We have been educated.

Fourth: globally, there are some $20tn of funded pension assets, $60tn of professionally run assets under management and $600tn of various derivatives. The pricing of the related liabilities, expected returns and valuations is tied directly or indirectly to the yield on US Treasuries – all on the assumption that US paper represents a risk-free rate of return. Remove that assumption and we are in a financial world without gravity.

The fifth factor is that sophisticated investors have understood the first four factors. Aside from adjusting exposures at the margin they are exploring two changes, each with profound implications for capital flows. First, they are asking leading investment firms to create a basket of securities that could replace the risk-free properties of US Treasuries of yore. Second, they are considering a shift from bond indices weighted by market capitalisation to benchmarks based on creditworthiness. The former favour US Treasuries, the latter may not. To the extent that these initiatives become trends, capital will flow away from those who borrow

[1] Then member of the Financial Policy Committee of the Bank of England. He writes in a private capacity.

most and towards those who borrow least. Yields will reflect the change. Sounds familiar? Locals in Lisbon can advise.

Sixth, financial repression may have unintended consequences. Aside from the yield-depressing effects of the three rounds of quantitative easing and other central bank operations, there has been a less widely reported liquidity effect. By some estimates, the Federal Reserve now owns all but some $750bn of US debt issued with maturities of 10 years or greater. This suggests the Fed is running into limitations on how much more it can buy while preserving dealing depth; that friendly foreigners have used the Fed's market interventions to shorten the duration of their US holdings; and therefore that America's creditors are less vulnerable than imagined to the threat of market losses – should they wish to exit.

The seventh factor concerns the "ugly sister syndrome". Ever wonder why the euro has been so resilient against the dollar? That the euro has not tanked may say more about the global search for an alternative to the dollar than it does about confidence in Europe's determination to save the single currency. So it is worth considering the degree to which progress on the euro might trigger a crisis in the greenback. When the spotlight shifts from Europe, where will it light?

With the US election behind us, the challenges associated with the looming "fiscal cliff" of planned tax hikes and spending cuts now dominate the debate. The optimum solution would avoid undue belt tightening in the short term combined with credible deficit reduction in the longer term. Alas, a more likely outcome will involve some version of kicking the can further down a shortened piece of road. Here too, the old world holds lessons for the new. Indeed, faced with the prospects of postponement, the market may soon be asking a different question: which is the greater threat – that the US goes over the fiscal cliff or that it does not?

The role of markets in sovereign debt crisis detection, prevention and resolution

Hung Q Tran[1]

I would like to thank the BIS for inviting me to speak to you on an important and timely issue. Given the prospect of slow growth, large budget deficits and high public sector debt, the challenges of managing and resolving sovereign debt crises in many countries, including advanced economies, will be with us for some time to come. As part of the wide range of issues being discussed at this Seminar, I would like to focus my remarks on the role of markets and market infrastructure in sovereign debt crisis detection, prevention and resolution.

I will consider briefly crisis detection and prevention, and will devote most of my remarks to the issues of crisis resolution and sovereign debt restructuring.

Crisis detection

Market pricing has been viewed as being able to discount investors' expectations of future events. In recent years, in addition to the cash markets for government securities, Credit Default Swap (CDS) markets have become more developed. Generally speaking, the deeper and more liquid markets become, the more efficiently they can reflect the collective views of numerous market participants. Indeed, in some instances, the markets for CDS have become much more liquid than cash markets, as CDS contracts can make it easier for investors to express their views on credit risk.

In addition, ratings by Credit Rating Agencies (CRAs) can also reflect and influence market views, but the relationship between market prices and rating actions is complex. Usually, market prices are sensitive, quick-moving and tend to discount investor expectations well in advance. Ratings have tended to change more gradually and therefore are viewed as lagging market pricing on many occasions. If done in single notches and within the investment grade category, rating changes may not elicit much price reaction. However, multi-notch rating changes – particularly those moving across the investment grade borderline – can trigger more substantial price moves, mainly because many investment funds must observe eligibility requirements, such as those allowing them to invest only in investment grade securities.

In principle, *both market prices (for cash securities and CDS contracts) and rating actions can be expected to provide early detection of sovereign debt crises*. A forensic analysis of the period leading up to the Greek sovereign debt crisis in early 2010 is useful to evaluate the effectiveness of the market's role in crisis detection, especially

[1] First Deputy Managing Director, Institute of International Finance (Washington D.C.). The views expressed here are personal and do not necessarily reflect those of the IIF. I would like to thank my colleagues for their helpful comments and suggestions, with particular appreciation to Thilo Schweizer for his assistance.

against the background of guidance and regulatory parameters set by policymakers and regulators.

Greece joined the Euro Area on January 1, 2001, having missed being part of the first wave of those countries joining in 1999, due to non-compliance with the Maastricht criteria. Right from the start, celebratory statements were tempered with misgivings about Greece joining the monetary union, from both public and private sector observers. Wim Duisenberg, the inaugural President of the ECB, perhaps best reflected sentiment by noting just prior to Greece's entry that: "…Greece has made great and commendable efforts in order to reach this stage. It shows the extent to which entry into Monetary Union and, therefore, complying with the Maastricht criteria have acted and are still acting as a catalyst for moves towards more sound public finance policies, an environment of low inflation and appropriate monetary policies…(However), it (Greece) still has a lot of further work to do."[2] Some investors worried that admitting Greece could send the wrong signal – that the Euro Area might accept weak members which would not fully comply with membership conditions.

Nevertheless, the formal acceptance of Greece as the twelfth member of the Euro Area – against a background of enthusiastic statements by European leaders lauding the launch of the euro, as well as a very profitable track record of convergence trades on Italy, Spain, Ireland and Portugal in the years leading to EMU – unleashed strong investment and credit flows to Greece. A regulatory regime under which Greek government bonds (GGBs) were accorded zero risk weight (under the Basel capital framework), were encouraged to be held as part of banks' liquidity pools, and were accepted at full face value at the ECB financing facility added allure to GGBs, particularly for Euro Area banks. Unsurprisingly, spreads between GGBs and Bunds collapsed from over 400 basis points in late 1998 (and 100 basis points just prior to joining EMU) to below 20 basis points in late 2001, staying in a low range around 15–40 basis points until well into 2008 – similar to developments seen in other periphery Euro Area countries.

In 2004, Eurostat announced that it had audited Greece's statistical releases from 1993 to 2004 and had fixed the deficiencies in their compilation. Statements from the official sector, including the IMF, continued to be mixed. While urging Greece to reduce its twin deficits, bring down inflation and continue to reform, official statements applauded Greece's strong growth experienced since 2001, attributing it not only to low interest rates but also to the early fruits of structural reform and convergence. In fact, as late as March 2010, several European leaders, as well as Dominique Strauss-Kahn, then-Managing Director of the IMF, still maintained that Greece did not need financial aid from Europe, let alone from the IMF, and should just concentrate on cutting its budget deficit.[3] In fact, by May 2010 the first EU-IMF program for Greece was launched, and the rest is history.

In contrast to the muted reaction from the official sector, the CRAs had started to downgrade Greece, with Fitch downgrading Greece from A+ to A in December 2004, due mainly to its deteriorating fiscal position. After a period of stability over the subsequent several years, ratings downgrades resumed in early 2009 and became more pronounced after the Greek elections in October 2009 and the

[2] Duisenberg (2000).

[3] See e.g. Balmer (2010).

announcement by the new government of revised/corrected fiscal data showing larger than previously announced budget deficits and government debt. In the spring of 2010, Greece was downgraded to below investment grade (Chart 1, page 16).

Greek yield spreads started to widen somewhat from low levels in spring of 2008, and rose further in late 2008 as the Lehman Brothers crisis hit. Following a period of relative stability at higher levels during most of 2009, the real blowout in spreads did not happen until early 2010. However, Greek CDS spreads seem to have lagged bond spread movements throughout 2007, afterwards moving more or less in tandem with bond spreads (Charts 2 and 3, page 16). It is important to note that the outstanding volume of CDS contracts on Greece during this time period was very small – around $9 billion (net), with infrequent trading (Chart 4, page 17). This contrasts sharply with the outstanding volumes in the GGB market at the time of some $400 billion. Hence there is little evidence to support the claim by some officials that the CDS market triggered turmoil in the GGB market.[4]

In summary, about a year before the crisis broke, spreads in the GGB market had started to widen, reflecting an expected increase in the probability of distress – which later materialized. In addition, rating agency commentary and market opinions began to focus on fiscal deterioration and debt sustainability, leading to gradual rating changes. While these market signals were rather modest prior to November 2009, in the next six months through May 2010, they worsened significantly in response to official data and policy announcements revealing the scale of fiscal imbalances amidst rapidly deteriorating economic conditions. As such, it can be said that *market pricing and rating actions provided a measure of advance warning*, by 3–6 months or so, of the impending sovereign debt crisis, with Greece's ultimate loss of access to international capital markets amidst sharply widening spreads marking the sovereign debt crisis itself.

Crisis prevention

If markets exhibit signs of turmoil before a crisis erupts, they generally fail to prevent crises from happening. This is mainly because in many instances the authorities of the debtor country and others, including in regional groupings and international financial institutions, tend to ignore market signals. In some cases, authorities try to suppress market signals by "shooting the messenger" – including by banning short positions in securities markets or the purchase of "naked" CDS contracts on sovereign names. CRAs have also been subject to more scrutiny and regulation, including in the sovereign ratings arena, with official demands for regulation sometimes triggered by a downgrading action.[5]

[4] As ISDA has noted, there was no surge in open interest in Greek CDS during 2009 and early 2010, and the relationship between government bond and CDS spreads was "essentially in line", underpinning ISDA's assertion that "the CDS market has had little or no impact on the government market"; ISDA (2010).

[5] For example, against the backdrop of the European Commission's ongoing amendments to existing CRA regulation, EU Internal Market Commissioner Barnier has indicated that CRAs could be banned from downgrading countries participating in the Eurozone's bailout scheme. See e.g. Gow/Treanor (2011).

The rating agencies' failures in other areas, notably subprime mortgage securitization, have contributed to demands for further regulation. However, this has confused the issue, as there is little indication that the deficiencies in rating subprime securitization had any bearing on sovereign or corporate ratings.

A number of ideas have been advanced to improve the framework for crisis prevention.

In particular, the *Joint Committee on Strengthening the Framework for Sovereign Debt Crisis Prevention and Resolution* was set up after the March 2012 Greek debt exchange to assess and draw lessons learned from the Euro Area's recent experience with sovereign debt crisis management. It enhanced the guidelines contained in the 2004 *Principles for Stable Capital Flows and Fair Debt Restructuring*, a voluntary code of conduct between sovereign debtors and their private creditors that was endorsed by the G20 Ministerial meeting in November 2004 in Berlin.

In its recommendations – issued as an *Addendum to the Principles – the Joint Committee* emphasized that *effective sovereign debt crisis prevention is a shared responsibility*, requiring – in addition to data and policy quality and transparency and open dialogue between creditors and sovereign debtors – sustained surveillance efforts by regional and international institutions and private sector groups, such as the IIF's Market Monitoring Group. Effective crisis prevention also requires appropriate action by regulatory agencies, accounting and other international standard setters, as well as vigilance and enhanced risk management by private creditors and market participants in general.

A concrete recommendation is that *more structured fora for consultation between a sovereign debtor and its investor base can be useful*, judging from the experience of several major emerging market countries that have adopted such practices. Regular and organized consultations, in the context of a regular investor relations program, can facilitate the ability of investors to share their concerns about perceived economic or financial imbalances and other policy deficiencies with relevant policymakers. This process can enable investors to better understand policymakers' intentions, thus avoiding having to assume the worst-case scenario when the economy deteriorates. At the same time, feedback from investors can help galvanize timely actions by policymakers to avert potential crises.

Crisis resolution

Sometimes it becomes unavoidable that private creditors and investors need to be involved as part of crisis resolution. Private Sector Involvement (PSI) encompasses a rich menu of options, ranging from standstill to rollover (of maturing sovereign debt) to changing the terms and conditions of the debt, including extending maturities, lowering interest rates and reducing the face amount of the debt, or sovereign debt restructuring. This would relieve the cash flow and stock-of-debt burdens on the sovereign debtor, contributing to its adjustment and recovery process.

According to a recent IMF working paper[6] there were 633 cases of sovereign debt restructuring in 95 countries over the last 60 years. The bulk of the restructuring (447 cases) was with bilateral official creditors in the framework of the Paris Club, while only 186 cases were with private creditors. Of the latter, the lion's share was for bank loans, until recently, when sovereign bond restructuring has become more frequent, with 16 cases to 2010. To that list we can add the Greek debt exchange; St. Kitts and Nevis in 2012; and the second Belize Super Bond exchange (agreement in principle likely in 2013).

Based on this body of experience, I would like to make several observations, highlighting instances where market mechanisms have worked relatively well and where they were weak and needed strengthening. These are key components of market-based sovereign debt restructuring and the Report of the *Joint Committee* includes recommendations to enhance their efficacy.

Fair burden sharing through good-faith negotiation

First and foremost, it is essential to keep in mind that sovereign debt restructuring means asking private creditors, especially long-term investors, to give up parts of their property rights and agree to debt forgiveness for the sake of the greater good – helping the recovery of the sovereign debtor and restoring financial stability – from which they benefit only indirectly as market participants. Understandably, an incentive for creditors to behave cooperatively is the threat of default, in which case creditors could stand to lose more. However, a defaulting sovereign debtor also pays a heavy price in terms of reputation damage and being shut out of international capital markets until the default is cured. Moreover, as the severity of haircuts in sovereign debt restructuring has shown a tendency to increase over time, the difference between the residual value in restructuring and the expected recovery value after default could diminish, weakening the potency of the threat of default. All things considered, *a balanced approach is important in achieving voluntary agreement to a fair burden sharing among the three key partners in the adjustment program: the sovereign debtor country, the official sector and private creditors*.

Concretely, the debtor country has to implement meaningful fiscal and structural reforms to improve its economic performance and prospects. The official sector – traditionally meaning the IMF and other international financial institutions, but also the Eurogroup in the context of the Euro Area debt crisis – has to provide official financing to support the adjustment program because of its overall responsibility to maintain a stable international monetary system. In the case of the Euro Area, the financing is also to support a key policy objective – namely, sustaining the euro. In the context of the adjustment program, private creditors would agree to make their contributions in the form of debt relief to lighten cash flow and stock-of-debt burdens on the debtor. ***Given the different interests of the three partners, good-faith negotiation is obviously the only way to achieve a voluntary, orderly and effective debt restructuring*** – one which contributes meaningfully to the adjustment program, respects creditor rights, minimizes litigation risk and allows the sovereign to quickly regain access to international capital markets (without which debt is clearly not sustainable). Access to market

[6] See Das/Papaioannou/Trebesch (2012).

financing is also necessary to allow the official sector to gradually unwind its adjustment lending exposure to the country. Improving market confidence and restoring good relations with private investors is therefore prudent and in the best interests of both the sovereign debtor and the official sector.

Moreover, an agreement on fair burden sharing is not sufficient on its own. *All three partners must perform their respective commitments within the "grand bargain" for the crisis to be resolved.* For example, in the case of the second Greek program of February 2012,[7] which offered a reasonable chance at that juncture for a gradual recovery of the economy (reaching a debt-to-GDP target of less than 120% by 2020 – considered by the official sector as essential to attain debt sustainability), private creditors and investors promptly performed their part of the bargain by participating in the March debt exchange. This debt exchange provided Greece with an unprecedented €107 billion of debt reduction, or a 53.5% nominal haircut and a 74% NPV reduction (at an assumed discount rate of 15%). However, Greece failed to implement the agreed reforms in full and on time and the official sector delayed the second disbursement for about six months – during which time the Greek economy collapsed further and its debt-to-GDP ratio jumped to 160% by the end of 2012. The actual sequence of events shows that it is erroneous to say that the March PSI was not "deep" enough to allow Greece to recover. In fact, given what has happened since March, even 100% debt forgiveness by private creditors would not have helped Greece. As a side note, with the debt buyback in December 2012, the share of private sector holdings of new GGBs has declined to less than 10% of total Greek public debt (estimated to be about €310 billion).

Assessment of debt sustainability

Central to an adjustment program is the assessment of how different configurations of fiscal and structural reforms, official financing and private debt relief would lead to debt sustainability in the medium term. The concept of debt sustainability is a matter of judgment and not "hard science". It rests on numerous assumptions and is closely linked to the ability of the sovereign debtor to re-access international capital markets on reasonable terms.

Traditionally, the assessment of debt sustainability was done on an iterative basis, with the IMF acting as an "honest broker", providing the analytical framework and analysis for discussion between the sovereign debtor and its creditors. This approach has been more conducive to good-faith negotiations, which the Fund requires a sovereign debtor to conduct with its private creditors as part of the Fund's Lending into Arrears policy. More recently, however, in the context of large fiscal imbalances, declining output, and fairly large and rising debt burdens, the IMF has espoused a medium-term target for the nominal debt-to-GDP ratio which has driven everything else to meet such a target. When combined with the fact that in some cases (such as the Greek debt crisis) both domestic reform measures and

[7] "The Hellenic Republic today announced the key terms of a voluntary transaction in furtherance of the 26 October 2011 Euro Summit Statement, known as the Private Sector Involvement, and in the context of its economic reform programme that has been agreed with the European Union and the International Monetary Fund. The transaction is expected to include private sector holders of approximately EUR206 billion aggregate outstanding face amount of Greek bonds (excluding treasury bills)"; Hellenic Republic – Ministry of Finance (2012).

official financing from both the Fund and Euro Area countries appear to have been predetermined by political considerations, private debt relief has become the only free variable in the game. In other words, *private investors have become the financier and debt relief provider of first, second and last resort!* However, the more private investors are treated this way, the less likely the sovereign debtor would be able to regain access to international capital markets within a reasonable time frame. Generally speaking, the reluctance to reengage with such sovereign debtors might be expected to be stronger among long-term institutional investors, while some short-term investors may behave more opportunistically.

Furthermore, the maturity and coupon as well as the ownership composition of sovereign debt are quite important to an assessment of sustainability. Debt of long maturity and low or concessional interest rates is much less of a burden than a similar nominal amount of medium-term debt at higher market rates. A focus on the nominal debt-to-GDP ratio misses this point completely. More importantly, *if domestic financial institutions such as banks hold a significant share of outstanding sovereign debt, restructuring this debt would substantially impair the capital base of the domestic banking system*. In many cases, this would necessitate a public recapitalization of domestic banks, raising sovereign debt levels. Furthermore, the economy could be weakened by the banking system coming under distress. The total economic cost could thus far exceed the benefit of a reduction in the nominal value of debt. Generally speaking, experiences from many emerging market countries exiting from sovereign debt crises show that sustained improvement in the debt-to-GDP ratio has largely resulted from a recovery of nominal GDP and not just a reduction in nominal debt.

Given that assessment of debt sustainability could have a direct bearing on the severity of debt restructuring, it is even more *important that private investors have an opportunity to engage with the official sector on a timely basis in a discussion about economic scenarios and key parameters of the adjustment program, including assessment of debt sustainability*. Without private investors' input and "buy-in" for the economic framework of the adjustment program, it is difficult to achieve a voluntary agreement on fair burden sharing and an appropriate debt restructuring.

Creditor coordination problem – role of the creditor committee

One of the most important sources of skepticism about the feasibility and efficacy of market-based sovereign debt restructuring is the coordination problem, both in the sense of the difficulty of getting thousands of bondholders to coalesce in a timely fashion into a representative creditor committee – as opposed to the ability of one or two dozen major international banks to quickly form such creditor committees in the sovereign bank debt restructuring of the 1980s and 1990s – and dealing with the free rider problem.

Looking at the 19 or so cases of sovereign bond restructuring in the past 20 years, it is clear that *coordination concerns have been exaggerated*. In most if not all of these cases, a bondholder committee has been able to take shape within a reasonably short time frame, representing somewhere between 30 and 60% of the value of bonds outstanding. In addition, many institutional investors may decide not to formally join a bondholder committee for various reasons, but are prepared to

give serious consideration to the committee's recommendations. Bondholder committees can also claim to be representative as they act in the interest of all bondholders in general. Reflecting the constructive role of creditor committees, market practices have evolved to include the sovereign debtor recognizing and negotiating with such committees as well as paying for their reasonable expenses, including for legal and financial advice.

Recently, progress in communications technology and data retrieval, especially from bond depositary databases, has greatly facilitated the identification of and communication among major bondholders, accelerating the formation of bondholder committees. The IIF has contributed to this process, mainly through the work of the Principles Consultative Group (PCG) – a unique public-private sector group charged with monitoring implementation of the *Principles*. The PCG monitors and discusses all sovereign restructuring cases (including potential ones) among its members, supplemented by observers invited from major stakeholders in particular cases. As such, the PCG offers a natural base for concerned bondholders to come together to form a representative committee. In some cases, the IIF has also been invited by the official sector and bond-holding institutions to act as intermediary in a PSI process. This was the case with Greece – the IIF was asked by the Eurogroup Ministers in June 2011 to organize and represent private investors to engage with the official sector to discuss PSI for Greece.

Concerns about the free rider problem have also been exaggerated. According to the IMF, of the 16 cases of sovereign bond restructuring it has examined, only two saw holdout creditors representing more than 10% of the value of outstanding bonds, and only one resulted in persistent litigation. This is the case of Argentina, which hopefully should remain a unique example of a sovereign debtor pursuing a unilateral and coercive approach to debt restructuring, willfully ignoring its own obligations to official creditors and international financial institutions such as the IMF and the World Bank's International Centre for Settlement of Investment Disputes.

In fact, a more serious obstacle to the smooth functioning of creditor committees as an essential part of an orderly sovereign debt restructuring has in some cases been the approach taken by particular sovereign debtors. Some have refused to recognize the creditor committee and in some instances have worked to undermine it, preferring to talk bilaterally with selected investors to market their unilaterally-determined debt exchange plans. While a sovereign debtor can and should talk directly to any and all investors, doing so as a pretext to avoid good-faith negotiations with a representative bondholder committee is equivalent to pursuing a unilateral and coercive approach to debt restructuring. Such an approach has been resisted by private creditors, and has led to a low participation rate in debt exchanges and high litigation risk – basically failing to achieve an orderly and effective debt restructuring.

Collective action clauses – *pari passu* clause

To address coordination problems, Collective Action Clauses (CACs) were first proposed by major advanced countries (and endorsed by the G10) in the early 2000s as an alternative to the top-down administered sovereign debt restructuring mechanism (SDRM) suggested by the IMF. CACs were first included in their modern

form in the prospectus of a global bond issue by Mexico in March 2003.[8] Since then, most new sovereign bonds issued on global capital markets have included CACs.

It is important to keep in mind the fact that CACs also represent a weakening of creditor and property rights, in the sense that investors agree on an ex-ante basis to be bound by the decision of a qualified majority of fellow bondholders to change the terms and conditions of their bond investments to their detriment. By comparison, creditors to corporations undergoing U.S.-style bankruptcy proceedings at least have the comfort of the process being supervised by an impartial judge, otherwise any substantial modification of the terms of the debt requires the unanimous consent of creditors. As such, it is only fair that *when unavoidable, CACs should be used in a comprehensive way, meaning that the sovereign debtor recognizes and engages in good-faith negotiation with a representative bondholder committee to reach a voluntary debt restructuring agreement*. The agreed plan would then be submitted to bondholders for a vote – an affirmative decision by a qualified majority would bind the minority to the proposed changes in terms and conditions of the bonds. (Incidentally, this imposition on minority bondholders constitutes a credit event in CDS contracts on sovereign names, triggering a settlement of outstanding contracts. A completely voluntary restructuring would not constitute a credit event in the sovereign CDS market.) In this context, an attempt to use only the voting mechanism specified in CACs to implement unilaterally-determined debt exchange offers or liability management plans would be abusive and likely to encounter investor resistance.

In essence, using CACs only as a voting mechanism is similar in spirit to the use of "exit consent" in an attempt to impose a debt exchange plan on non-participating investors. If the terms are deemed to be onerous and punitive, investors can now appeal to the courts, based on a recent ruling of the London High Court.[9]

Overall, it is to be welcomed that sovereign bonds issued by Euro Area member countries will carry model and identical CACs from the beginning of 2013, implementing the ESM Treaty. In addition, the Euro Area CACs contain an aggregation clause for cross-series modification – which was also recommended by the *Joint Committee* in the *Addendum to the Principles* to facilitate the orderly implementation of an agreed debt exchange by making it more difficult for non-participating investors to build blocking positions in individual bond series. However, *it is regrettable that the Euro Area CACs deviate from market practices* – as reflected in guidelines set out by the International Capital Market Association (ICMA) – in two areas: lower thresholds for qualified majority (66.6% instead of 75%) and no coverage of bondholder committees.

[8] On March 3, 2003 Mexico successfully issued its 6.625% Global Notes due 2015, governed by New York law that included both majority restructuring and majority enforcement provisions. The spread at issue was in line with the Mexican yield curve, suggesting that any premium paid for CACs was negligible. The bond continued to trade well in the secondary market. Although this was not the first bond issue governed by New York law to include majority restructuring provisions, this issuance is of particular significance because the existence and design of these clauses was the subject of extensive discussion at the time the bonds were issued; see IMF (2003), SEC (2004), p.2, Fn.3.

[9] Assénagon Asset Management S.A. v. Irish Bank Resolution Corporation Ltd., July 2012. [2012] WLR(D) 243, [2012] EWHC 2090 (Ch).

More recently, the issue of *pari passu* clauses has received a lot of attention following the decisions of the District Court of the Southern District of New York in the case of Argentina v. NML Capital Ltd. (February and November 2012),[10] and the U.S. Court of Appeals for the Second Circuit (October 2012).[11] The concept of *pari passu* is more meaningful and clear-cut in the context of corporate bankruptcy, where the proceeds from the liquidation of corporate assets are distributed equally to unsubordinated debt holders before any residual amount can be used to pay more junior claims. For many years prior to the 1990s, the pari passu clause in the context of sovereign bank loans and bonds had the formal meaning of the sovereign debtor promising not to proclaim any new debt or parts of its outstanding unsubordinated debt as senior to other unsubordinated debt. However, *since the 2000s, the pari passu clause in sovereign debt contracts has evolved to contain a second sentence referring to "equal ranking of payment obligations" among the debtor's unsubordinated debts*. By now, about half of the sovereign bonds in international capital markets contain both the first sentence about formal ranking and the second sentence about "*equal ranking of payment obligations*" in their *pari passu* clauses.

Under such an extended *pari passu* clause, and in the opinion of the U.S. Circuit Court of Appeals for the Second Circuit, a sovereign debtor has an obligation as a bond issuer not to create any debt senior to the outstanding stock of unsubordinated debt. The debtor also has the obligation as a bond payor to refrain from paying some holders of unsubordinated debt while not paying others. Using this argument, the Second Circuit reaffirmed the decision of the District Court that Argentina had violated the *pari passu* clause in its bond contract in both senses, by passing the Lock Law and by not honoring its "equal ranking of payment obligations" to all bondholders.

However, *having a sovereign debtor judged to have violated its bond contract is one thing, how to remedy the situation is quite another*. At present, it is not clear how this can realistically be done. The payment instruction specified by the District Court in November 2012 (namely, that Argentina must pay holdout claims in full when it makes payments on restructured bonds; that the injunction applies to the intermediaries such as trustee banks and clearing organizations in the payment process; and that Argentina must deposit $1.33 billion in an escrow account pending appeal) is being stayed, pending review by February 2013. This payment instruction – especially extending the injunction to intermediaries in the payment process – has given rise to concern about possibly incentivizing holdouts in future sovereign debt restructuring, even within the context of activating CACs, and disrupting payment systems in general. The outcome will very much depend on how the Second Circuit decides, and if its ruling is presented specifically for the unique case of Argentina and not to be interpreted more generally.

Generally speaking, investors have found it quite difficult and costly to recover court judgments in their favor against sovereign debtors determined to exercise their sovereignty and ignore foreign court orders. Clarification of the payment sentence of *pari passu* clauses and a strengthening of the Waivers of Immunity

[10] NML Capital, Ltd. v. Republic of Argentina, United States District Court for the Southern District of New York, Dec. 14, 2011, No. 03-cv-8845, ECF No. 452.

[11] NML Capital, Ltd. v. Republic of Argentina, United States Court of Appeals for the Second Circuit, August 20, 2012, No. 11-4065-cv (L).

clauses could offer opportunities to address the difficulty in enforcing court judgments against a sovereign debtor – which is an important deficiency in sovereign debt markets.

Subordination – the Securities Market Program (SMP) and Outright Monetary Transactions (OMT)

The Euro Area sovereign debt crisis and in particular the Greek debt exchange have resulted in yet another erosion of the rights of private investors in the sovereign bonds of those countries: de facto subordination. Specifically, the GGB holdings of the ECB and the Euro Area national central banks were exempted from the Greek debt exchange, on the grounds that participation in the exchange would have been tantamount to "monetary financing", which is prohibited by the Treaty on the Functioning of the EU. Unfortunately, such subordination meant that private holders of identical GGBs were put under more pressure to come up with a more onerous haircut to achieve the targeted debt relief for Greece.

In addition, one of the recitals in the ESM Treaty also claims seniority for ESM loans, second only to the preferred creditor status of the IMF. In other words, when a problem member country receives such ESM loans, its sovereign bonds in the hands of private investors and other official creditors outside the Euro Area will become subordinated instead of unsubordinated, as specified in outstanding bond contracts – a possible violation of the pari passu clause of existing sovereign debt.

The *subordination problem is a serious concern for international investors* (including both private sector firms and public sector entities such as foreign central banks and sovereign wealth funds). Specifically, *it adds another complication to the assessment of credit risk for those Euro Area countries under fiscal stress and can make it more difficult for some of them to access capital markets on reasonable terms*. Aware of this problem, the Euro Area authorities have taken some steps to assuage investor concerns. When launching the OMT scheme to buy short-term sovereign bonds on secondary markets, the ECB emphasized that bonds purchased under the OMT will be treated equally with those held by private investors. This clarification is welcome. However, it still leaves standing the preferred creditor status claimed for sovereign bonds held in the SMP, as was the case in the Greek debt exchange.

Going forward, it is important that the Euro Area authorities clarify this important source of uncertainty so as to help restore normalcy to their sovereign bond markets.

Litigation and "vulture funds"

Against the backdrop of sovereign actions to impose *de facto* subordination on private holders of sovereign bonds and some attempts to pursue a unilateral approach to debt restructuring, it is important to realize that *litigation is crucial to defend creditor rights and to help achieve a balanced approach to sovereign debt crisis resolution*. Otherwise, allowing creditor rights (including litigation rights) to be weakened, even under the exigencies of crisis resolution, would have long-term negative effects on credit markets to the detriment of all market participants, mainly

by undermining the legal certainty of sovereign securities, especially in mature markets.

In this context, it is important to put the debate about litigation by distressed debt funds, or so-called "vulture funds", into perspective. According to research notes prepared by the Emerging Markets Trade Association (EMTA) and the IIF for the Paris Club-IIF Annual Meeting in June 2010, incidents of litigation against emerging markets, as well as low-income/HIPC sovereign borrowers have been relatively few in number and covered a small share of the outstanding value of restructured sovereign debt.[12]

According to EMTA, since the early 1980s, 59 emerging market and non-HIPC countries have defaulted and/or restructured their sovereign debt, worth more than $600 billion in total. Of this sample, nine countries were identified as being subject to litigation by one or more of their creditors. Excluding the unique case of Argentina, which defaulted in 2001, the face value of debt subject to litigation has amounted to about $1.5 billion and resulted in recoveries totaling about $230 million. Creditor plaintiffs have tended to be successful in asserting their claims and obtaining judgments in U.S. courts under basic principles of contract law, including waivers of sovereign immunity. However, actual recoveries appear to have been difficult and time-consuming – a trend which has become more pronounced over the past decade.

According to the IIF review of litigation in low-income and HIPC countries, out of the 47 lawsuits identified by the 2008 HIPC Initiative and MDRI Status of Implementation Report by the IMF/IDA, 32 cases have been settled. Most of the remaining 15 cases have been brought by trade creditors such as suppliers to governments rather than by distressed debt or "vulture funds", which now account for only three cases (two new cases involving the Democratic Republic of Congo and one old case involving Liberia).

These facts should be kept in mind in the debate about possible legislation to deal with the perceived problem of litigation by "vulture funds", especially in low-income/HIPC countries, so that a remedy to an exaggerated problem does not end up doing significant damage to the integrity of international credit markets, mainly by depriving investors of their legitimate recourse to litigation in case of disputes.

Debt buybacks

Sovereign bonds of a country in distress typically trade at a significant discount on secondary markets. Buying back such debt at current market prices (or with a small premium) crystallizes losses for participating investors, especially long-term investors, and precludes any chance of later recovery, while reducing the nominal value of debt for the borrower. As such, buybacks can have a role to play in the liability management toolbox to help a sovereign debtor manage its debt and provide an exit for investors in impaired markets. However, there are several considerations relating to the use of buybacks:

[12] See IIF/EMTA (2009).

1. Most importantly, *buybacks should be carried out on a voluntary basis based on market terms*. Attempts to use CACs to impose a buyback at a specified price, especially if the price is below market, constitute a coercive approach to sovereign debt restructuring. Besides the fact that such tactics may encounter investor resistance, they represent an abusive use of CACs.

2. Secondly, *the financing needed for such buybacks should be on substantially better terms than the debt being bought in terms of maturity and interest rates*.

3. Thirdly, *buybacks are best managed in a discreet and opportunistic fashion*. Publicly announcing a buyback target and price, or even worse, making it a pre-condition for granting official financing to a debtor country (as was the case in the December 2012 Greek debt buyback) affords investors an almost one-way bet to push prices up. This results in a higher cost for buybacks and correspondingly less benefit in terms of nominal debt reduction for the borrower.

4. Last but not least, *it is important to analyze the potential costs and benefits of alternative uses of official financing* – a scarce resource for the sovereign debtor in distress. In the case of Greece, the buyback cost of €11.3 billion comes from squeezing the official financing package – precluding a more productive use of such financing to alleviate the acute liquidity shortage which has caused severe economic dislocation. Partly because of continued liquidity shortages, Greek nominal GDP is estimated in the program to shrink by another 5% in 2013, on top of the 20% decline since 2008. Such a decline in nominal GDP would increase the debt-to-GDP ratio by 9 percentage points, almost equivalent to the amount of debt (9.6% of GDP) retired by the buyback!

Credit enhancements and GDP-linked instruments

The Greek debt exchange has also provided concepts and techniques that can be used to enhance the credit quality of the exchange instruments so as to gain support from investors without increasing the upfront cost to the sovereign debtor or the official sector.

- *Cash sweeteners*, such as the €30 billion in short-term notes provided by the EFSF to participants in the March 2012 Greek debt exchange, are valued by investors for their lack of credit risk compared to collateral in the form of securities which may have equivalent costs to the official sector but whose value to investors varies according to market conditions.

- *Co-financing structures* such as that between the EFSF's €30 billion loan to Greece and the new GGBs can give some protection to investors at no cost to the official sector or the sovereign debtor.

- The *use of foreign law and jurisdiction in new domestic bond issues* can minimize the risk of a sovereign debtor changing domestic law so as to alter unilaterally and retroactively the terms and conditions of its outstanding bonds, potentially subjecting private investors to significant haircuts.

- The *use of GDP-linked instruments with proper safeguards* to produce a win-win situation so that the sovereign will pay more when it can afford it, in cases of higher-than-anticipated output growth.

Conclusions

I would like to conclude by again drawing your attention to the conclusion of the IMF Working Paper cited above:

> *"We find that most recent sovereign debt exchanges could be implemented quickly and without severe creditor coordination problems. Since 1998 only 2 out of 17 bond exchanges had a share of holdout exceeding 10% of the debt. Similarly, creditor litigation in the context of bond restructuring has been rare, with the exception of the default of Argentina after 2001. Overall the system of ad-hoc debt exchanges seems to have worked reasonably well for emerging market countries. These experiences may also prove useful to any distressed country, including advanced economies."*[13]

Given such a track record, the current "reasonably effective" system of ad-hoc sovereign debt exchanges should be further developed and enhanced by adherence to the *Principles*, in order to serve as the preferred framework for voluntary and good-faith negotiation to reach a fair burden sharing arrangement which – together with the use of CACs – can facilitate an orderly and effective debt restructuring. This in turn will contribute to sovereign debt crisis resolution and help restore financial stability.

I appeal to you to lend your support to this endeavor.

Thank you very much for your attention.

[13] Das/Papaioannou/Trebesch (2012), p.96.

Appendix

Chart 1:

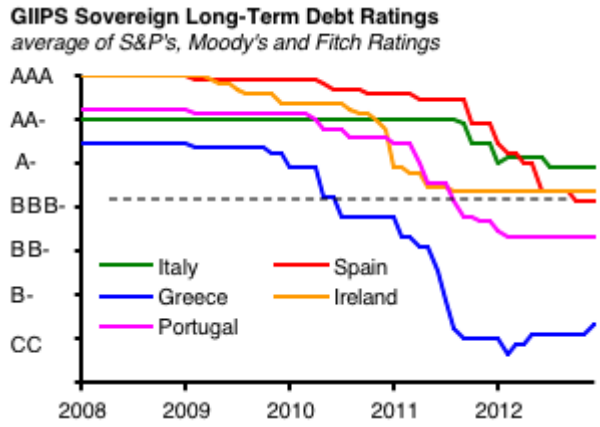


Chart 2:

Chart 3:

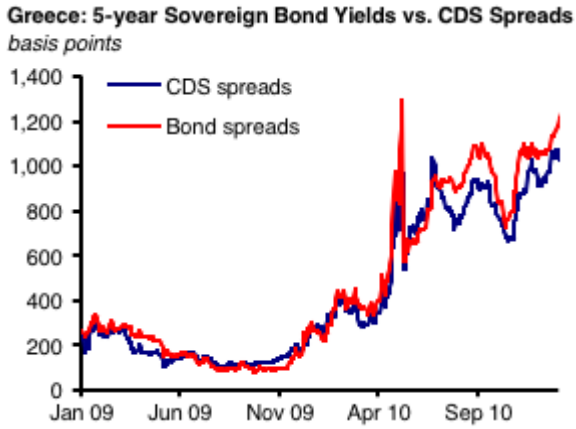
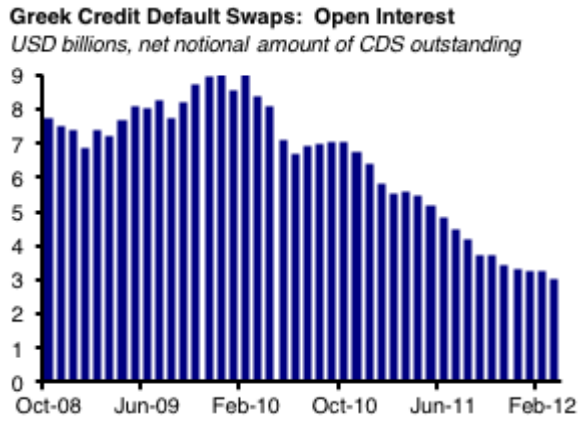


Chart 4:



Sovereign Bond Restructurings — Table 1

Country	Year	Participation Rate
Pakistan	1999	99%
Ecuador	2000	98%
Russia	2000	99%
Ukraine	2000	97%
Moldova	2002	100%
Uruguay	2003	93%
Dominica	2004	72%
Argentina	2005	76%
Dominican Republic	2005	97%
Grenada	2005	>90%
Belize	2007	98%
Ecuador	2009	n.a.
Seychelles	2009	89%
Argentina	2010	93% cumulative (76% in 2005)
Cote d'Ivoire	2010	99%
Jamaica	2010	98%
Greece	2012	93%
St. Kitts and Nevis	2012	100%
Belize	2013	Agreement in principle; announcement of terms and debt exchange offer pending.

Sources: IIF, Das/Papaioannou/Trebesch (2012), Cruces/Trebesch (2011).

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Legal perspectives on sovereign debt: Moderator's introduction

Diego Devos[1]

Ladies and Gentlemen:

This morning we will have the debatable pleasure to discuss some legal issues associated with sovereign risk matters, in particular in the context of debt crises and debt restructuring.

I said "debatable pleasure" mostly for the non-lawyers who are in attendance as part of an economic seminar where legal issues generally appear as out of place or quite ancillary, quite the perception of the role of lawyers in a central bank world.

In the case of sovereign debt crises, it seems that there is however some appetite to understand a little more the legal implications of certain developments widely reported in the press, for example on the occasion of the so-called Euro-area crisis (in particular last year's Greek debt restructuring), and also on the other side of the Atlantic through the recent US courts' decisions regarding the implementation of the Argentina exchange offers following Argentina's default in 2001.

Many questions were indeed raised especially over the past year, some of which were already evoked by Jaime Caruana and by Hung Tran in their respective speeches of yesterday: What is a sovereign default? What are the criteria? We talked yesterday about the definition of "default" and of "credit event" under rating agencies' methodology and CDS terms which may not coincide with all types of defaults. When there is a sovereign default, what are the consequences for the investors and creditors given the absence of an insolvency framework applicable to sovereign states?

In particular, are creditors obliged to accept all the new financial conditions set by the sovereign state wishing to reorganise its debt to access again the financial markets? If not, what are the alternatives? There is, of course, the hold-out aggressive litigation strategy, which is generally costly, time-consuming, uncertain and which could be highly disruptive for financial markets, but at the same time, in all fairness, those speculative creditors may also force sovereigns to observe a certain market discipline and to pay attention to the conditions of their debt reorganisation.

To avoid the hold-out judicial actions, is it possible to organise at least some sort of orderly sovereign debt restructuring mechanism, as suggested by the IMF a decade ago and promoted again recently by various circles? One may think of course first about the imposition of *collective action clauses* to impose through a majority decision new financial conditions on the dissenting minority bondholder community, especially when such CACs are combined with *aggregation clauses* to consolidate in this respect all the various government debt issues and make more difficult the reaching of a blocking minority. There are also other stipulations such as the so-called *exit consents* to make a sovereign debt issue less liquid or less

[1] General Counsel, Bank for International Settlements.

attractive in terms of litigation strategy by amending the non-financial terms of the bonds. We have seen that CACs may either be stipulated from the onset in the initial contractual bond terms, as it should now be the rule in the Euro-area pursuant to the European Stability Mechanism Treaty for government securities with a maturity above one year, or even retroactively by way of mandatory national legislation as it happened for Greek law-governed sovereign bonds subject to last year's restructuring.

In the Euro-area, the interventions of the ECB to support the Euro were of course widely welcomed, but with some doubts expressed as to the legality of the massive purchase on the secondary markets by the ECB and the central banks of the Eurosystem of Euro-area domestic government bonds in order to facilitate the continued access by the relevant sovereigns to market borrowings at an acceptable level. This was criticised in particular as being contrary to the EU Treaty's prohibition of the monetary financing of state deficits.

The role of the ECB and the Eurosystem in the support to the Greek banking sector was also criticised based on equality of treatment considerations, and there are even some judicial actions pending against the ECB from Italian investors, for having escaped the Greek exchange offer's drastic conditions, in a way similar to the IMF and other multilateral development banks (also the ESM) which are claiming a "*preferred creditor status*" when lending to a country in difficulty to avoid cuts on their resulting lending claims.

Finally, the recent decisions from the US Court of Appeals and from the famous Judge Griesa in New York in the *litigations opposing Argentina to some speculative hedge funds (the so-called "vulture funds")*, that would oblige (subject to further court review) Argentina to pay equally old and new bondholders because of *pari passu* stipulations in the defaulted Argentina bonds – given precisely the absence of CACs, have generated a huge debate in the international financial community as to the implications of such case law for debt restructuring in general.

To address these burning and complex legal questions, we have the privilege to have today three eminent speakers to cover these topics:

- Lee Buchheit, partner at Cleary Gottlieb, "the" expert in sovereign debt restructuring, will address some of the main general questions regarding debt restructuring.
- Antonio Saínz de Vicuña, General Counsel of the ECB, will of course talk about the role of the ECB in the European debt crisis under Treaty principles and about some important legal issues which arose in particular as part of the Greek debt restructuring.
- Finally, Rodrigo Olivares Caminal, distinguished professor of the University of London, will concentrate on the interpretation of *pari passu* provisions especially in the light of the Argentine case.

You will then have the floor for a first round of questions (and I already know that our colleague Sebastian Soler from the Central Bank of Argentina would like to intervene at that point to express some views regarding the recent US judicial developments).

For now, I would like to give the floor to our first guest speaker.

Lee, the floor is yours.

Sovereign debt restructurings: the legal context

Lee Buchheit[1]

Thank you, Diego.

Good morning, ladies and gentlemen. It's a great pleasure to be with you. My job this morning is to try to set out the legal context of sovereign debt restructurings, and then my colleagues will describe in more detail some of the current issues that are raised by this subject.

One starts this analysis from the position that the creditors are each holding debt instruments that are legal, valid, binding and enforceable under the laws of some jurisdiction. They may choose the law of the sovereign's own jurisdiction, they may choose a foreign law, but you start with the principle that they are all holding legally enforceable pieces of paper that call for the repayment of money on a certain date in a certain amount.

Sovereigns are unique debtors. Unique in two senses: they are uniquely vulnerable and they are uniquely protected. They are uniquely vulnerable in that, unlike a corporate debtor or an individual debtor, there is no bankruptcy code that applies to a sovereign. They are not subject to their own bankruptcy codes, nor anyone else's. That means that an over-extended sovereign confronted with a maturing debt obligation has only two choices: pay it or face the prospect of a lawsuit and be compelled to pay it. To put it differently, a sovereign cannot seek the protection of bankruptcy courts; there is no Chapter 11 for a sovereign. In that sense, of all the debtors in the world, sovereigns are uniquely vulnerable.

That said, sovereigns are uniquely protected in this sense: until the middle of the 20th century, most countries recognised a theory of absolute sovereign immunity. A sovereign could not be sued in the courts of another country without its consent. Moreover, sovereign property, wherever held, was treated as immune from any compulsory seizure. This was the doctrine of absolute sovereign immunity. It changed in the middle of the 20th century. For reasons we do not need to go into here, the trend developed in most countries toward a restrictive theory of sovereign immunity; a theory which says that when a sovereign elects to go into the international marketplace and conduct itself as though it were a commercial actor, it ought to be accountable to judicial process as though it ***were*** a commercial actor. And to the extent that sovereigns historically claimed to be affronted if they were hauled into a court in a foreign jurisdiction, the response was "you should have thought about that before you engaged in commercial activities abroad." Moreover, the restrictive theory of sovereign immunity said that, under certain circumstances, sovereign property held abroad would be subject to seizure by a creditor who has obtained a court judgment against the sovereign.

Even in the era of restrictive sovereign immunity, however, the laws of most countries continue to give sovereign property a certain degree of special treatment. Typically such property may not be seized unless the property itself is devoted to a commercial purpose, and that is a very significant hurdle. Sovereigns – the Republic

[1] Partner, Cleary Gottlieb Steen & Hamilton LLP; transcript of remarks.

of Ruritania let's say – will not have, typically, property outside their own jurisdiction that is used in a commercial way, and what properties sovereigns ***do*** have outside of their jurisdictions, things like embassies, consulates, property devoted to a military purpose, are generally clothed with a special immunity from creditor attachment. To be sure, sovereign state-owned instrumentalities may be engaged in commercial activity, but the law in most countries says that if a state-owned entity, even if 100% owned by the sovereign, is nonetheless conducting itself as a separate independent entity, its legal personality, its separate legal personality from the sovereign itself, will be respected with the consequence that one cannot attach property of the entity to satisfy a claim against the government.

So sovereigns are uniquely vulnerable. They will always face lawsuits, and they have no generalised protection against them. But the creditor, once having obtained a judgment, may realise that the judgment conveys a degree of emotional satisfaction, but is unlikely to convey any financial satisfaction unless or until the creditor can find an asset outside the jurisdiction of the sovereign against which it can levy to satisfy its claim.

In that mixture of unique vulnerability and unique protection is the chemistry of all sovereign debt workouts. Each side, debtor and creditor, comes to the table with a unique advantage and a unique weakness. The creditors know that they will be able to get judgments against the sovereign if they want to. There is very little doubt about it. The judiciary in these affairs must act in an inevitably pedestrian way. Remember, it comes down to a question of money due but not paid. It is just like the thousands of other lawsuits that will clog every civil court every day in every jurisdiction. "Your Honour, the defendant owed me some money and he didn't pay it".

In the sovereign case, of course, the sovereign may wave its arms in the courtroom and speak about the terrible economic crisis in Ruritania and its effects upon the global financial system. And they will speak about their IMF programme and they will speak about their Paris Club deal. The judge will typically endure this great tsunami of rhetoric but eventually the judge will look down his spectacles and say "Son, did you borrow the money?" And you will say, "Sí señor." And the judge will say, "Did you pay it back?" And you will say, "Nope." Judgment for plaintiff.

The judiciary, much as we on the sovereign side might like them to take into account the geopolitical context in which a sovereign debt case is brought before them, are typically debarred from doing that. That is the consequence of submitting the claim to the municipal laws of a jurisdiction.

In the negotiating room, the sovereign sits there knowing that the creditors have the ability to get court judgments. Something that a corporate debtor sitting in the same room would know he could stop if he wanted to. If he wanted to, he could say, "If we cannot come to a deal, I'm going to Chapter 11, and that will prevent you from proceeding against me." It is not pleasant for the debtor; that's why they don't do it except as a last resort.

Confronted with this reality, sovereign debtors and most of their creditors will come to a negotiated solution. This is the essential chemistry of sovereign debt negotiations. An interesting footnote here: it is now the policy of the United States government to encourage precisely this situation. The United States has taken the position, since 1985, but most explicitly in a brief they filed in the Argentine case as recently as 28 December of last year, that sovereign debt restructurings require this balance of terror. As a matter of policy, the United States neither wishes to see the

sovereign debtors find some technique that will insulate them completely from creditor claims, nor does it wish to see the creditors develop a legal theory that will defeat the sovereign's ability, if necessary, to escape and evade the enforcement of a judgment by shielding its property.

It is also obvious that, while legal remedies may be useful to an individual creditor, were the creditors as a class to attempt to exercise those remedies, they would be utterly futile. Even if there are some stray assets that could be seized outside the country's own jurisdiction, they are not going to be adequate to satisfy every creditor's claim. So viewed as a class, the creditors have virtually no choice but to negotiate. They cannot all look to their legal remedies. If everyone bolted to the courthouse, by definition, all or virtually all of them would get judgments, but all or virtually all of those judgments would remain unsatisfied.

So the great majority of creditors are, in effect, forced into a negotiated resolution. But what is good for the many is not always good for the few or for the one. The individual creditor may conclude that the best way to play this game is to allow the majority of others to accept some form of debt relief in a negotiated context. If you have the stamina to stay out of that arrangement, then you may have a rifle shot against the sovereign debtor. Now you might say, "you just told me there aren't many assets out there." Well, there aren't. But stray assets available for seizure can occasionally be found. Or maybe the holdout can develop a legal theory that will give it some leverage over the sovereign debtor. In any event, that holdout creditor has the ability to cause disturbing *Financial Times* headlines going forward.

Sovereigns, even in the depth of a restructuring, will look forward to the day when they can resume market access. And the very last thing they want is to have some creditor left behind from the last restructuring, holding a defaulted bond, standing up and saying – as they are trying to go back to the market – "wait a minute I still haven't been paid." Some years ago I was in the Loire Valley and did a tour of the chateaux, and there was a bedstead, a carved oaken bedstead, from the 14th-century plague time in Europe. On top of the bedstead, there was a carving that showed on the left a skeleton, dressed with a hooded robe and pointing a finger like this, and on the right were a group of young people dancing around a maypole. The legend underneath read, and this is in the mouth of the skeleton, pointing to the young people, "What you are, I once was. What I am, you soon shall be." No sovereign wants to go on its first road show to sell a new bond and have a creditor in the back stand up waving a defaulted bond, looking at the other bright-eyed prospective investors and saying, "What you are, I once was. And what I am, you soon shall be." That is the leverage that a holdout creditor will always have, even if it is not lucky enough to find an asset.

Holdout creditors come in two types. Some may not even be aware that a debt restructuring is going on; they may not have any idea of what is happening. A sovereign may have in its hold-out population a group of people who are really quite innocent. And then there are the others. There are some who analyse this situation, more or less as I've just described it to you, and say here is an opportunity, there is a gap in the legal system that will keep me from being forced into a general debt workout as I would be in a corporate setting. I can stay out, I can take my chances, I will be a holdout creditor, I will try to extract a preferential recovery, preferential in comparison to the sheep who went into the restructuring, either through the threat of litigation or the reality of it.

Accordingly, in most sovereign debt restructurings there will be an inevitable residuum of holdout creditors; either harmless, innocent ones, like retail holders, or those who have approached the matter with malice aforethought.

How to deal with them? There are two basic approaches: carrots and sticks. The carrots involve the sovereign building into its restructuring package various inducements that will encourage creditors to come along. Ultimately, of course, the restructuring medicine is bitter for the creditors to swallow. The sovereign would not be at the table if it had the money to repay all of its debt in full and on time, and therefore, to use a Clintonesque phrase, some "contribution" from the creditors is going to be required in a sovereign debt restructuring.

How do you make it at least slightly less bitter? There are a variety of ways. You can offer different instruments that accommodate the differing preferences and regulatory idiosyncrasies of creditors. You can include so-called value recovery instruments, something like this: give us the debt relief we are asking for today and we will give you a warrant that will make payments to you in the future if the gross domestic product of Ruritania exceeds a certain benchmark. An oil exporter may give an oil warrant that says that, if the price of oil ever exceeds a benchmark, inflation-adjusted, we'll begin making payments.

The "stick" techniques may involve seeking the consent of the majority of the holders of an instrument to amend its non-payment terms in order to make the instrument less attractive in the hands of a holdout. These are referred to as "exit consents". Some instruments will contain collective action clauses that allow a specified supermajority of holders to amend the instrument – even its payment terms – in a manner that binds all holders.

For 30 years sovereign debt restructurings have gotten done. We have done them, as Hung Tran said last night, more or less satisfactorily. There has been remarkably little litigation in sovereign debt workouts in 30 years, considering the size of the affected debt stocks.

When Argentina initially defaulted, the IMF, under the leadership of then Deputy Managing Director Anne Krueger, proposed something called the sovereign debt restructuring mechanism, which was intended to be nothing less than a transnational bankruptcy code for sovereigns. It attempted at every level to replicate the protections and procedures of Chapter 11, a corporate reorganisation scheme in the United States. It had a prohibition on creditor lawsuits and attachments as well as a requirement that the sovereign provide information. It embodied the notion of a supermajority creditor control of the process. In Chapter 11, in any corporate reorganisation statute, if you get a supermajority of creditors to agree to a plan, the judge will probably approve that plan, and it will bind any naysaying minority. Ultimately the SDRM did not garner the necessary political support. The Europeans, by the way, were by and large in favour of it but the United States was not. There is talk, as you see from the *Financial Times* yesterday and this morning, there's talk about resurrecting that initiative, at least in the context of Europe.

The alternative approach that Uncle Sam ***did*** embrace was collective action clauses. The problem is that CACs had never existed in American law sovereign bonds. So what we need to do, the US Treasury said, is import them into New York law bonds, and, if we do, holdout creditors will be substantially reduced. Why? Because 75% of the creditors who decide to go along can bind the rest. The Americans therefore put their weight, and the G10 put its weight, behind collective

action clauses. Most sovereign bonds issued in the New York market and, of course, in the London market today will carry collective action clauses.

One final comment: on 22 May 2003, shortly after the coalition invasion of Iraq to oust Saddam Hussein, the UN Security Council, acting pursuant to Chapter 7 of its charter, that's the one where the Security Council decision binds all Member States, decided to order that Iraqi financial assets, its oil exports and all the proceeds from its oil sales, are immune worldwide from any form of judicial attachment. The UNSC did this for two reasons. First, obviously Iraq was facing, once the war was over, a major reconstruction, and the UNSC didn't want Iraq's money being diverted to Saddam-era creditors. But second, there was $140 billion of Saddam-era debt that had built up since the sanctions that were imposed in 1990. That debt had to be restructured. The Security Council knew that if you wanted to encourage Saddam-era creditors to go along with a restructuring, you needed to disabuse them of the belief that they will easily be able to recover their claims through legal action. What the Security Council did was crush the expectation that the creditor would be able to satisfy a judgment, because now there was a worldwide immunity granted to Iraqi assets. The UNSC immunities continued in force until mid-2011.

Let me stop there and let my friends pick up.

Legal perspectives on sovereign default

Antonio Sáinz de Vicuña[1]

1. Sovereign debt restructuring in the case of a state participating in the European Monetary Union: elements of differentiation vis-à-vis precedents in the history of sovereign debt restructuring

In the long history of sovereign bond workouts, the protagonists have almost always been single states rather than parties to a regional currency union.[2] Thus, new and unprecedented issues arose when Greece, a full member of the European Monetary Union (EMU), decided to proceed in February and March 2012 with a restructuring of its outstanding sovereign bonds. What are the elements that make this process different from more usual cases of restructuring, where the sovereign involved has full authority over its currency? I suggest five differentiating factors:

a) First, the sovereign's inability to devalue its currency. Very often,[3] indebted sovereigns have deliberately allowed their currency to depreciate with the aim of facilitating full repayment in nominal terms of bonds outstanding. Greece, for instance, formally devalued the drachma in 1882, 1928, 1953, 1985 and 1998, each time reducing the cost of drachma-denominated debt service and repayment.[4] But when, in 2012, Greece faced the need to obtain debt relief, it

[1] Director General Legal Services, European Central Bank. This text represents the personal views of its author, and not necessarily the views of the European Central Bank. It reflects the Law as it stands on January 2013.

[2] Three states of the East Caribbean Currency Union, namely Antigua and Barbuda (2010), Dominica (2004), and Grenada (2005), renegotiated their external debt. Twelve states participating in the two African regional monetary unions (the Central African Economic and Monetary Community and the Economic and Monetary West African Union) also renegotiated their external debts. In most of these cases such renegotiations took place in the context of the Paris Club, as their only creditors were public ones; still, in few of these cases, reschedulings of commercial loans took place in the context of the London Club. In no case was a rescheduling of bonds placed and traded in international markets.

[3] According to U Das, M Papaioannou, and C Trebesch, "Sovereign debt restructurings 1950–2010: literature survey, data, and stylized facts", IMF Working Paper, WP/12/203, 2012, between 1800 and 2007 there have been 150 cases of yearly inflation beyond 20% that allowed for de facto reduction of debt denominated in local currency.

[4] Greece has a long history of defaults on foreign loans, starting from its independence. These included loans from Great Britain of 1824 and 1825, further international loans in 1832, which had to be renegotiated following a principal default in 1843, and interest payments suspended. As from 1848, it suspended conversion of banknotes into gold or silver, allowing devaluation by banknote printing. Not until 1878 was outstanding debt finally settled, and Greece was for a short while able to tap foreign capital again, until 1893 saw another default on interest payments, leading in 1897 to the formation of an international committee with a mandate to guide Greek public finances and debt management. This led Greece to join the gold standard in 1910 and the Latin Monetary Union, and allowed the country to access foreign finance to fund the 1912–13 Balkan Wars. Following the

could not resort to a further devaluation, as its currency was the euro, the currency of 16 other EU Member States, the authority for which had been transferred to the EU. Greece had the major part of its public debt denominated in euro; had the country not been an EMU member, it could have unilaterally devalued the drachma, thus reducing the real cost of servicing and repaying its debt. Nor could Greece conduct an inflation policy that would have softened the debt burden, as the euro is governed by the ECB with a clear anti-inflationary mandate.

b) Second, the inability to impose capital transfer limitations. In the case of a sovereign crisis, there tends to be capital flight; often, sovereign states impose exchange controls to limit capital flight in financial crisis situations. But this is not possible in the EU, where since 1992[5] such tools have only been exceptionally permitted (i) vis-à-vis non-EU countries, temporarily and subject to a Community procedure (ie not by an individual Member State), or (ii) for specific reasons, such as taxation avoidance, supervision of mergers and acquisitions of financial institutions, the prosecution of fraud and crime, and statistical purposes. An internal market such as the EU, and a monetary union based on a currency-wide money market, are incompatible with capital barriers. A fiscal crisis situation, like that of Greece, which might lead to an outflow of bank deposits cannot therefore be addressed by way of exchange controls. As money consists not only of central bank money (M1) but also commercial bank money (M3), both need to be fully fungible within a monetary zone and to be treated as equivalent by the holders and users of such money. The introduction of exchange controls would have disrupted such fungibility and it would undermine the usual concept of money as encompassing both M1 and M3 money. Protective measures including capital restrictions were permissible under strict conditions before the start of Stage 3 of EMU (former Arts. 119(4) and 120(4) EC Treaty, Maastricht version). The Lisbon TFEU deleted such possibility.

c) Third, individual states may get financial help from their central banks in a budgetary crisis. This is not possible in the EU. One of the pillars of EMU is that central banks are prohibited from financing the public sector.[6] Article 123 of the Treaty on Functioning of the European Union (TFEU) prohibits central banks from providing liquidity to the public sector. Some sovereign debt crises outside the EU have been managed by way of the central bank funding the

Great War and the Asia Minor War, financed by internal inflation, the League of Nations again intervened to assist in restoring orderly Greek public finances, establishing the Bank of Greece. This led to a subsequent pegging of the drachma to sterling, then to the US dollar, thereafter to sterling again, with regular devaluations and exchange controls. Exchange controls remained until 1995, and Greece joined the Exchange Rate Mechanism of the EU in 1999, leading to its adoption of the euro in 2001. See the full monetary history of Greece in S Lazaretou, *Greek monetary economics in retrospect: the adventures of the drachma*, Bank of Greece, 2003.

[5] Exchange controls in the EU were prohibited by Council Directive of 24 June 1988, whose content was reflected in the Maastricht Treaty (current Articles 63 to 66 TFEU). Greece was exceptionally given three more years to eliminate capital controls, so only in 1995 was she bound by the general EU prohibition to use such instruments.

[6] The only two exceptions to that rule being (i) credit institutions controlled by the public sector, which may obtain central bank liquidity on terms identical to private credit institutions; and (ii) the financing of state obligations vis-à-vis the IMF.

state, as the prohibition of so-called "monetary financing"[7] is by no means a universal rule and may, therefore, not apply to all countries outside the EU. In addition to the basic reasons for such bans,[8] which also apply to states that are not part of a regional monetary union, the prohibition is essential tool in the EMU's case to ensure that the neutrality of the central bank is preserved vis-à-vis the conflicting fiscal and economic policies of participating Member States.

Had Greece not been in the EMU, the Bank of Greece might have financed the country's fiscal needs, and in doing so it would have helped to drive down the external value of the drachma, thus helping the government service and repay its debt.

d) Fourth, advanced countries not infrequently allow emerging countries to be exempted from part of their debt obligations. EU Member States, for example, have agreed on several occasions to totally or partially forgive the outstanding debt of emerging countries, either in the context of the Paris Club or in multilateral programmes.[9]

Some have suggested that a partial forgiveness of Greece's debt would be a small price to pay for saving the euro, especially in view of the relatively small size of the Greek economy – around 2% – within the single currency area. However, debt forgiveness of this type is not permitted under the Treaty. Another pillar of the EMU is the *no-bailout rule*,[10] by which fiscal transfers among participating states are prohibited. This rule is intended to prevent the tax revenues of one state being used to systematically finance the public services of another; the prohibition is thus based on fundamental constitutional grounds.

However, it is noteworthy that the rule is not absolute; regional integration initiatives usually provide for some sort of fiscal transfer. Indeed, fiscal transfers have been an established fact in the EU since the 1950s in the form of structural funds that provide for regular fiscal transfers aimed at narrowing economic disparities within the Union[11] and at supporting common EU policies. Such fiscal transfers are based on EU law and have never been contested.[12] If Greece

7 The media tends to refer to such activity as "printing money", in spite of the fact that it does not necessarily entail an increase in banknote circulation.

8 Monetary philosophy since the 1980s, overturning decades of Keynesian economics, requires central banks to be independent from government and to serve the primary objective of ensuring the stability of the purchasing power of the currency they issue. Should central banks finance governments, such objectives would be put at risk, as they would become subordinate to political decisions, and in addition fiscal discipline would be weakened.

9 Eg the IMF and World Bank-sponsored *Highly Indebted Poor Countries* facility (HIPC facility).

10 In international meetings this is sometimes termed the "*OHIO Rule*": *Own House In Order*.

11 The European Regional Development Fund (FEDER), the European Social Fund, the European Agricultural Guarantee Fund, the European Agricultural Fund for Rural Development, the European Fisheries Fund, and the Cohesion Fund.

12 The odd exception being the United Kingdom which, since Margaret Thatcher headed the British Cabinet, has been demanding a sizeable rebate of British contributions to the EU. Mrs Thatcher became famous by stating at the EU Summit at Fontainebleau in 1985 "*I want my money back*!". Thus began the annual "*British cheque*" payment from the EU to the UK.

had not been subject to the no-bailout rule, foreign aid might have come to the rescue, as it did in on several previous occasions.

The *no-bailout* rule is established in Article 125 of the TFEU.[13] The EU Court of Justice has recently provided an interpretation of this provision in the so-called *Pringle Case*,[14] in which an Irish parliamentarian questioned the compatibility of the European Stability Mechanism (ESM) with TFEU Article 125. The ESM is a fund owned by the euro area Member States aimed at lending to EU Member States that are subject to a fiscal consolidation programme. The Court assessed the aim of the provision, and decided that (i) the ESM's lending is conducive to restoring the fiscal discipline of the borrowing state thanks to the conditionality attached to it, and thus it is consistent with one of the objectives of TFEU Article 125, namely, fiscal discipline for all EU Member States; and (ii) that the ESM in its lending does not replace Greece in its liabilities vis-à-vis its creditors, but rather "adds" to its liabilities. Lending is thus legally permissible, whereas "forgiving" or "paying for another" is not. The Court concluded that the ESM does not contradict TFEU Article 125.

Greece did benefit from financial assistance from fellow euro area Member States and from the IMF, not without hesitations and legal challenges.[15] Since May 2010, the budget of the entire EU, plus a syndicate of euro area Member States,[16] plus the "first rescue fund" of the euro area – the European Financial Stability Facility (EFSF)[17] – and the ESM, have, together with the IMF, provided funds to Greece to allow the country to restructure its public finances, all subject to strict conditionality and external monitoring.[18] The Court stated that, to the extent that no substitution of Greece´s liabilities vis-à-vis her creditors has taken place, the establishment of the ESM and its lending do not breach TFEU Article 125.

e) Contagion is another factor relevant to the renegotiation of the debts of a state within a monetary union. Such states are subject to an element outside their

[13] It reads: *"The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project."*

[14] Case 370/12, Judgment dated 27/11/2012.

[15] In addition to the *Pringle Case* mentioned in the text, a group of German professors and parliamentarians questioned the constitutionality of Germany's support to Greece, basically on two grounds: that such support escaped democratic control, and it had the potential of having inflationary effects hindering the fundamental right to property. On 7 September 2011, the German Constitutional Court rendered its judgment dismissing the three joined claims, but requiring a case-by-case approval by the German parliament of financial supports under the EFSF. A similar complaint was introduced in 2012 before the same Court asking for an interim injunction to stop the ratification process of the ESM by Germany; it was rejected on 12 September 2012; final judgment on the constitutionality of the ESM ratification by Germany is pending.

[16] It was a voluntary loan: one euro area Member State, Slovakia, decided not to participate in the syndicated lending.

[17] The EFSF was established in Luxembourg as a share-holding company in June 2010.

[18] The so-called *Troika missions* (EU, IMF and ECB).

control: the market perception of the effect of one country's fiscal behaviour on another. A fiscal crisis within a state with its own currency would normally have only a limited effect on other states but, in a monetary union, contagion effects can lead to herding behaviour in financial markets.[19] The sovereign crisis in the euro area has shown two kinds of market contagion:

a. Contagion between sovereign and banks beyond the sovereign's borders: the rating downgrade of the sovereign implies a downgrade of its banking system, even if the banking system is healthy and sound; eg the Greek banking system, which until the 2011 private sector involvement (PSI) was well capitalised. The effect of sharing a currency area is that any downgrade of the local banks affects the currency-wide money market (via counterparty and collateral risk), with the consequence of increased differentials in interbank rates or even the dysfunction of segments of the interbank market (eg beyond the overnight market, or the unsecured money market).

b. Contagion between one sovereign and another. Indeed, the 2011–12 episode shows that (eg) a given shock in Italy can impact (eg) Spanish bonds, and vice versa; the procyclical behaviour of the market – fed by the procyclical behaviour of credit rating agencies and by the financial media – tends to amplify such effects beyond any rational dimension, leading to a domino effect. Furthermore, the nightmare prospect of Greece leaving the euro suggested to some market players and financial media that the euro as a currency might be doomed. The resulting market hysteria led to an extraordinary volatility in CDS prices, driven very much by the prevailing newsflow. This explains how sovereigns with lower indebtedness and a smaller deficit than others could sometimes receive what seemed to be an unjustifiably harsh treatment by the market. This is what is referred to as contagion.

2. Two selected legal issues arising from the 2012 Greek PSI

a) The negative pledge clauses and the continued eligibility of Greek government bonds as central bank collateral throughout the exchange process

Greek government bonds (GGBs) have been eligible collateral in Eurosystem operations since Greece entered the euro area in January 2002. Following the debt exchange proposed by Greece in 2012, such GGBs (i) have suffered a rating downgrade to "selective default" status, and (ii) were subjected to a "haircut" in the exchange process. This made the GGBs ineligible as Eurosystem collateral, as the

[19] When in 1994 Mexico suffered a balance of payment crisis, triggering a devaluation of the peso and an international rescue package, the effects extended to the whole of Latin America, in what was then termed the "Tequila effect", whereby market players simplified facts and considered all Latin American countries as similar to Mexico. The same dynamics, albeit more intensely, played out in the euro area.

Treaty requires collateral to be "adequate". But declaring the bonds ineligible would have put the whole Greek banking system into jeopardy by depriving it of a functioning interbank market. With a view to mitigating that risk, Greece proposed to the Eurosystem several ways of temporarily enhancing the quality of the GGBs as collateral: many of these methods had to be rejected, because of the existence of negative pledge clauses (NPCs) in GGBs issued outside Greece. Such NPCs prohibit the issuer from encumbering assets to the benefit of some but not all equal-ranking creditors. Thus, allowing a pledge of Greek assets to further enhance the GGBs given as collateral to the Eurosystem would have created the risk of breaching the NPCs, leading to an acceleration of maturities, default and cross-default, with catastrophic consequences.

An agreement was reached on 21 March 2012, when (i) the Eurogroup accepted in Brussels[20] that the EFSF would be used to provide Greece with EFSF bonds on loan that would be made available to the Eurosystem for exchange against GGBs obtained by it in the case of a counterparty default during the GGB exchange period; (ii) the ECB in Frankfurt accepted the adequacy of this credit enhancement, which had the legal nature of a buyback offer that was purely contractual in character and hence did not create any security in the legal sense and was thus consistent with the usual NPCs. In practice, no counterparty defaulted on its borrowings from the Eurosystem during the exchange period, and so the collateral enhancement was never put to the test.

b) The question of a voluntary participation of the Eurosystem in a collective action clause process leading to GGB haircuts or in further voluntary debt reduction exchange offers

GGBs have been acceptable as Eurosystem collateral since 2001, in most cases by way of repos (ie acquiring the temporary legal ownership as security for liquidity operations). As a result, the Eurosystem would have been affected by the activation of the collective action clause (CAC) in the Greek PSI. But in addition, since May 2010, the Eurosystem had carried out secondary market purchases of GGBs in order to mitigate the malfunctioning of the secondary GGB market, with the basic aim of preserving the monetary transmission mechanism. This market intervention programme is known as the Securities Markets Programme (SMP), and the ECB has emphasised its character as a pure monetary policy instrument, to counter media allegations that the SMP represented some kind of quantitative easing along the lines of programmes conducted by the Fed, the Bank of England and the Bank of Japan.[21] Further, the ECB is prohibited by TFEU Article 123 from financing the public

[20] Eurogroup Statement of 21/2/2012: "The Eurogroup considers that the necessary elements are now in place for Member States to carry out the relevant national procedures to allow for the provision by EFSF of a buy back scheme for Greek marketable debt instruments for Eurosystem monetary policy operations."

[21] A full explanation of the SMP is given in a speech by ECB President Jean-Claude Trichet in Vienna on 31 May 2010, available on ECB's website. See also a speech by ECB President Trichet, on 20 May 2010: "Our present monetary policy stance is appropriate. Our decisions taken on 9 May have confirmed it. We are not engaging in any form of 'quantitative easing'. The 'Securities Markets Programme' is designed to ensure an effective functioning of the monetary policy transmission mechanism by helping to resolve a malfunctioning of some segments of the euro area debt

sector, ie to provide quantitative easing. By contrast, the SMP was a secondary market programme aimed at keeping the repo market alive by offering a potential buyer-of-last-resort to counterparties with a portfolio of GGBs.

Because of the SMP, the Eurosystem was an important holder of GGBs by the time that the negotiations over the PSI between Greece and the private bondholders represented by the IIF were well advanced. Whether the GGBs held by the Eurosystem would participate in the projected debt exchange very much influenced the projected level of the haircut.

The following considerations were important for the final decisions adopted:

a. Against participation in the proposed debt exchange:

   a) The Eurosystem's portfolios of GGBs had resulted from its basic mandate: monetary policy and price stability. GGBs were held by Eurosystem members either because the securities were admissible as eligible collateral or because of the SMP market interventions. By contrast, private investors had made investment decisions based on the pricing and perceived risk.

   b) The proposal for a debt exchange was termed PSI with reference to the private sector. That is, until the PSI was agreed, only the public sector had supported Greece, by way of the several European funding mechanisms, and through the large-scale support for the Greek banking system from the Eurosystem. The overall idea was that the private sector now had to share part of the financial burden, so that European taxpayers would not have to finance private investors. If the Eurosystem had been drawn into the Greek PSI, the aim of the PSI would have been subverted, since the losses in the Eurosystem would have impacted the budget of euro area treasuries, ie taxpayers.

   c) The monetary financing prohibition was an important consideration: the Eurosystem would have breached TFEU Article 123 if it had in any manner cooperated in a mechanism that pumped central bank money into the Greek Treasury. As Eurosystem GGBs had been acquired with central bank money, a "haircut" in favour of the issuer would have had the economic effect of a monetary financing in breach of the Treaty.

   d) The ECB had been consistently and publicly opposed to the idea of a sovereign debt exchange in the European Union; fundamental considerations of bolstering confidence in financial markets required that every sovereign should stand behind its commitments. If a European sovereign did not honour its obligations, the whole trust-based edifice might collapse. The financial system is based on the existence of risk-free financial assets,[22] such as those hitherto represented by the sovereign bonds of developed economies. Based on these considerations, (i) the Eurogroup included in all its public statements a proviso that the Greek PSI was an exceptional and unique case, and that European states would stand

securities markets. The liquidity provided through this programme is withdrawn in its entirety through tenders of term deposits."

[22] Since the demise of gold and silver as kind of risk-free asset. The successive Basel "Concordats" on capital adequacy have retained until this day the zero-weight of sovereign bond holdings for regulatory capital purposes.

behind their commitments; and (ii) the basic condition was observed that any sovereign debt exchange would be on a "voluntary" basis. For its part, the ECB saw any contribution of its holding of GGBs to the proposed debt exchange as inconsistent with its previous and public stance against a PSI.

b. In favour of participation in the exchange:

a) GGBs in Eurosystem portfolios were marketable bonds fungible with GGBs held by private investors, and therefore had the same rights and conditions. An exemption to the Eurosystem would contradict such fundamental fungibility.

b) An exemption to the Eurosystem may be seen as a "preferred creditor status" recognition having no legal basis, perhaps even contrary to pari passu clauses. Preferred creditor status (PCS), although not enshrined in law, is globally recognised for public sector lenders that lend where the market is unable to do so (eg long-term, low interest rates, unprofitable public infrastructure or social projects, fragile political environment etc). The IMF, regional development banks,[23] and the new European rescue funds are generally recognised as benefiting from PCS. Because of the monetary financing prohibition, the Eurosystem was not – and could not be – a lender to the Greek state, it lends only to banks. Also, the Eurosystem was a bondholder, not a lender, whereby fungibility and equal treatment were fundamental. Thus, it could not ask for PCS, and in fact never did ask for it.

c) If the ECB were to be granted exemption from the PSI, this would have negative market effects for EMU states, as the Bank could be perceived to have created a precedent case of "subordination" of normal investors vis-à-vis Eurosystem portfolios, making future borrowings by sovereigns more expensive.

d) An exemption of the Eurosystem's Greek-law GGBs would not extend to the English-law GGBs held by the Eurosystem, although in small amounts. English-law GGBs had been acquired with the built-in CACs, whereby like any other bondholder the ECB had implicitly accepted the possibility of their activation.

The final decision by ECB's Governing Council sought to balance all the above arguments.

The Eurogroup accepted the exemption of the Eurosystem GGBs from the PSI. In parallel, the ECB accepted to earmark the profits arising from its GGBs portfolios to fund euro area Member States under an agreement to reduce the interest rates charged to Greece in the EFSF loans, so that the Eurosystem's profits would ultimately be used to facilitate the servicing of EFSF loans.

[23] At least six international financial institutions were identified as lenders to Greece with PCS: the IMF, EIB, EBRD, Eurofima (railways financing), the Black Sea Community Development Bank, the Council of Europe Development Bank.

Annex

Eurogroup Statement 21 February 2012

- The Eurogroup *takes note* that the Eurosystem (ECB and NCBs) holdings of Greek government bonds have been held for public policy purposes.
- The Eurogroup *takes note* that the income generated by the Eurosystem holdings of Greek Government bonds will contribute to the profit of the ECB and of the NCBs. The ECB's profit will be disbursed to the NCBs, in line with the ECB's statutory profit distribution rules. The NCBs' profits will be disbursed to euro area Member States in line with the NCBs' statutory profit distribution rules.
- The Eurogroup *has agreed* that certain government revenues that emanate from the SMP profits disbursed by NCBs may be allocated by Member States to further improving the sustainability of Greece's public debt. All Member States have agreed to an additional retroactive lowering of the interest rates of the Greek Loan Facility so that the margin amounts to 150 basis points. There will be no additional compensation for higher funding costs. This will bring down the debt-to-GDP ratio in 2020 by 2.8pp and lower financing needs by around 1.4 bn euro over the programme period. National procedures for the ratification of this amendment to the Greek Loan Facility Agreement need to be urgently initiated so that it can enter into force as soon as possible.
- Furthermore, governments of Member States where central banks currently hold Greek government bonds in their investment portfolio commit to pass on to Greece an amount equal to any future income accruing to their national central bank stemming from this portfolio until 2020. These income flows would be expected to help reducing the Greek debt ratio by 1.8pp by 2020 and are estimated to lower the financing needs over the programme period by approximately 1.8 bn euro.

The pari passu clause in sovereign debt instruments: developments in recent litigation

Rodrigo Olivares-Caminal[1]

1. Introduction

The pari passu clause is a standard clause in public or private international unsecured debt obligations (syndicated loan agreements and bond issuances). To understand the pari passu clause, it is first necessary to understand the meaning of the short Latin phrase "pari passu". Literally, this means "with equal step", from *pari*, ablative of *par*, "equal" and *passu*, ablative of *passus*, "step". That is to say, pari passu refers to things that are in same situation, things that rank equally. This notwithstanding, the pari passu clause, as brilliantly noted by Buchheit (2000), "is short, obscure and sports a bit of Latin; all characteristics that lawyers find endearing".

In 1900, an opinion was given that "[t]here is no special virtue in the words 'pari passu', 'equally' would have the same effect or any other words showing that the [bonds] were intended to stand on the same level footing without preference or priority among themselves…" (Palmer (1900)). However, more recently, the pari passu clause has been described as a harmless relic of historical evolution (Gulati and Scott (2012)).

The reason why the pari passu clause returned to the limelight is a lawsuit that is currently taking place in New York against Argentina (*NML Ltd. v Republic of Argentina*) which is basically the background of this paper on the interpretation of the pari passu clause.

This lawsuit has resulted in some important developments that are worth analysing, namely: (i) the real meaning and the novel interpretation of the pari passu clause; and (ii) the remedies recently proposed by the New York District Court for the enforcement of the clause, which pose a real threat to the future of sovereign debt restructuring – and especially to New York's future as an international financial centre. This paper will focus only on substantial aspects of the interpretation of the clause and will not address the details of the judicial processes.

[1] Professor in Banking and Finance law, Centre for Commercial Law Studies, Queen Mary, University of London. I would like to thank Robert McCauley (Monetary and Economic Department) and Diego Devos (Legal Service) for inviting me to present and write the paper, and conference participants for helpful comments and suggestions. As the paper addresses an issue which is ongoing, all opinions expressed here are based on the facts and the state of affairs as of 20 February 2013. All opinions are personal and the views expressed in the paper should not be attributed to any institution to which I am or have been affiliated.

2. The ad hoc scenario and the use of contractual sweeteners

Currently, there is no statutory regime to deal with a sovereign in distress. We are thus left with two main options. One is the use of collective action clauses (CACs), provided that such clauses have already been included in the bonds. The other option is to use an exchange offer, which is a voluntary process whereby the bondholders accept a "new" bond in exchange for the "original" or "old" instrument. The most pertinent aspect of an exchange offer is that the new bond will usually offer less attractive financial and legal terms.

Sometimes, exchange offers incorporate so-called legal or financial "sweeteners" to increase the rate of bondholders' participation in the offer; or are combined with the use of exit consents,[2] which have been used in a number of restructurings (eg those of Ecuador in 2000, Uruguay in 2003 and the Dominican Republic in 2005). These sweeteners can be seen as an ad hoc approach to addressing the lack of a formal insolvency-like regime to force bondholders to accept a restructuring exercise. Some examples of these contractual sweeteners include mandatory prepayment clauses or mandatory restatement of principal clauses, ie clauses that can be included in the new terms of the bonds when the exchange offer is launched, with the aim of convincing the bondholders that they will continue to be protected, either by a reduction in the outstanding stock of debt (ie via mandatory prepayment clauses) or by a reinstatement of the accepted face value reduction in the event of a new default (mandatory restatement of principal clauses). Still others include the use of credit-linked notes (eg as in Argentina 2005); a guarantee (eg as in Seychelles in 2010, where a guarantee was provided by the African Development Bank); the use of a principal defeasance (eg as mooted in an early stage of the Greek PSI); or the use of collateral (eg as in the Brady Plan).

One kind of sweetener that is of particular relevance to the interpretation of the pari passu clause in the ongoing Argentine litigation is the "most favoured creditor clause" (MFCC), as used by Argentina in 2005 (Olivares-Caminal (2009a)). Say a sovereign – after an initial exchange offer – decides to enter into a repurchase, a new exchange offer, or to enter into a *settlement* (pertinent here) on better terms than the exchange offer made to the original bondholders. Including an MFCC in the new terms of the bond being issued as a result of the exchange offer means that the "more beneficial" terms subsequently offered will also be extended to those that that accepted the initial exchange offer. This is usually intended to show that an exchange offer is definitive and, in the event that there is a holdout creditor, the sovereign is not willing to enter into any kind of settlement agreement with more beneficial terms. Why? Because if it enters into a settlement to put an end to

[2] Exit consent is the technique by which holders of bonds who decide to accept an exchange offer, at the moment of accepting said offer, grant their consent to be represented by a third party to amend certain non-payment terms of the (old) bonds that are being exchanged. By using the exit consent technique, the exchange offer is conditioned to a minimum threshold of creditors' acceptance and the amendments to the terms are performed once the required majority to amend the terms has been obtained. Some of these amendments include delisting the bonds, reinstating sovereign immunity provisions or changing the governing law of the bonds. By means of these amendments, the (old) bonds subject to the exchange offer become less attractive (in legal and financial terms), forcing a greater number of bondholders to accept the exchange offer. Hence, if holdout bondholders do not accept the exchange offer, they will end up holding an impaired bond without some of the original contractual protections.

ongoing litigation and pays the holdouts 100% of the value of the claim, then bondholders who accepted a reduction in the face value of the original or old bonds will be entitled to that same treatment. When Argentina included an MFCC in the prospectus with a view to enhancing the degree of investor participation, it forgot to include the word "settlement", rendering the MFCC inadequate since it failed to protect bondholders who accepted the 2005 exchange offer from the possibility that a separate settlement might be reached with a holdout creditor. As result of this gaffe, Argentina passed what is known as a "Lock Law" which prevents the Argentine government from reopening the exchange process or making any kind of court, out-of-court or private transaction or settlement with respect to the bonds that were subject to the exchange offer.

The cases of Pakistan (1999), Ukraine (1999), Ecuador (2000), Uruguay (2003), Argentina (2005–10) and Belize (2006) can be used to evaluate whether such exchange offers work. These six different countries have been selected because they serve as an adequate sample of different types of restructuring episodes, including a pre-emptive debt reprofiling, default (with and without nominal value reductions) and the use of CACs and exit consents. In all these cases, the degree of participation in the exchange offers, which means the rate of acceptance, was above 90% (Ukraine 95%, Ecuador 97%, Pakistan 99%, Uruguay 93%, Argentina 93% after two rounds of exchanges, and Belize 97%) (Olivares-Caminal (2009b)).

Despite the fact that these exchange offers did not achieve 100% participation, none of them experienced the degree of belligerent litigation that has been witnessed in the Argentina case. Argentina's experience is slightly different because it followed a coercive approach and took more than 36 months to launch an exchange offer. In addition, it touches upon another clause, which is the pari passu clause – a clause that even now causes legal professionals to disagree as to its meaning or purpose and even origin.

3. Understanding the pari passu clause

A pari passu clause included in sovereign bond issuances usually reads that the bonds rank pari passu with each other and with other unsecured (payment) obligations of the issuer.[3] This can be read as "equal among equals" and that bondholders are in the same ranking as other unsecured creditors.

From a close reading of the clause, it can be argued that it has two elements: (i) an internal element, ie that the bonds will rank pari passu with each other; and (ii) an external element, ie that the bonds will rank pari passu with other unsecured (present or future) indebtedness of the issuer.

Sometimes the term "payment" is included before "obligations", which adds nothing since we are talking about a bond – which cannot be anything other than a payment obligation. As Wood (2003) noted, adding "payment" means nothing,

[3] The pari passu clause included in Argentina's 1994 Fiscal Agency Agreement (Clause 1(c)) reads as follows: "The Securities will constitute […] direct, unconditional, unsecured and unsubordinated obligations of the Republic and shall at all times rank pari passu and without any preference among themselves. The payment obligations of the Republic under the Securities shall at all times rank at least equally with all its other present and future unsecured and unsubordinated External Indebtedness (as defined in this Agreement)."

while rank means rank. It does not mean "will pay", nor does it mean "will give equal treatment to creditors". "If a clause adopts a variant such as rank pari passu in priority of payment, then the result should be the same."

3.1. The (in)famous Elliott case

The meaning of the pari passu clause in the sovereign debt context was first discussed in the *Elliott* case, which was brought by Elliott Associates LP against Peru. The peculiarity of this case was the lack of assets to attach in the United States when the claimants sought to enforce a payment obligation. This forced the claimant to resort to the courts of Belgium, Canada, England, Germany, Luxembourg and the Netherlands to seek enforcement of the decision.

In September 2000, Elliott obtained a restraining order from a Brussels Court of Appeals prohibiting Chase Manhattan (the financial agent) and Euroclear from paying interest on the Republic of Peru's Brady bonds (approximately USD 80 million that was due on October 2000). The Brussels Court of Appeals resolution stated that "[t]*he basic agreement regulating the reimbursement of the Peruvian foreign debt, also indicates that the different creditors enjoy a 'pari passu clause', which has as a result that the debt should be paid down equally towards all creditors in proportion to their claim*."

Confronted by the judicial order not to make any payment, Peru faced default on restructured bonds totalling USD 3,837 million. In response, the country attempted to create a trust to make twice-yearly payments of interest due on the Brady bonds in order to keep servicing interest due and to avoid disrupting the flow of funds. Shortly after, however, Peru decided not to implement the trust structure because payments were curtailed through Euroclear, as well as through the Depository Trust Company (DTC) as result of attachment orders in different states in the United States. The only window that was left open – albeit temporarily – was to make the payments through Clearstream (Olivares-Caminal (2012)). This would have implied that only those bondholders holding an account with Clearstream would be paid or that bondholders not holding an account with Clearstream should open an account there (which implied an additional cost and several practical difficulties for Peru). As it was, it was only a matter of time before Elliott obtained a restraining order in Luxembourg (where Clearstream is headquartered).

This scenario forced Peru to reach an agreement with Elliott in order to avoid a new default on its recently restructured debt under the auspices of the Brady Plan. The final settlement agreement implied a payment in the total amount of USD 58.45 million. In the end, after the settlement, Peru was able to pay the due interest in time, avoiding a new default. The decision of the Brussels Court of Appeals that forced the parties to reach a settlement was based on the violation of the principle of equal treatment of creditors under the pari passu clause. The Belgian court mistakenly opened a door that permanently changed sovereign debt practices, as is explained below.

3.2. The ongoing Argentine litigation

Most practitioners and legal scholars thought that it would be just a matter of time until a New York court passed an interpretation of the pari passu clause. As a side note, it is worth pointing out that the Belgian court had to interpret the *pari passu* clause not under Belgian law but under New York law. The interpretation of the pari

passu clause under New York law by experts in New York law finally occurred in the wake of the current Argentine litigation (*NML Ltd. v Republic of Argentina*). The first great surprise occurred when the District Court ruled that "*it is declared, adjudged and decreed that the Republic* [of Argentina] *violates Paragraph 1(c) of the FAA whenever it lowers the rank of its payment obligations … including (and without limitation) by relegating NML's bonds to a non-paying class …*". The salient point here is to understand why NML's bonds have been relegated to a non-paying class. The answer to this is the Lock Law. This is why the District Court finds that there has been a form of subordination. It says: "… that the Republic lowered the rank of NML's bonds in violation of Paragraph 1(c) of the FAA when it enacted [the Lock law]".

In the Argentine restructuring case, the bonds that were restructured did not include CACs. Argentina was unable to use exit consents because, in one of the bond series, bondholders managed to get a blocking holding curtailing any possible amendments to the non-payment terms. Therefore, Argentina had to resort to the MFCC. After the above-mentioned gaffe in the drafting of the MFCC (forgetting to include the word "settlement"), the government then passed the Lock Law to persuade bondholders who were in the process of tendering their original or old bonds that Argentina would not settle with holdouts. Otherwise, holding out might have eventually paid off.

However, it was the Lock Law that provided a basis for judging that there had been an alteration in the legal ranking. For, by means of the Lock Law, Argentina opened the way for an interpretation of the pari passu clause in the narrow or payment interpretation and not in the broad payment interpretation as in the Belgian case. Why? Because now there was a basis for subordination. It can be argued that Argentina *formally* subordinated a class of creditors lowering holdouts to a non-performing class by means of the Lock Law. In addition, in its US Securities and Exchange Commission filings (Form 18K, which is an annual report), Argentina has stated that holdouts are a category separate from its regular debt-holders and that since 2005 it has "not [been] in a legal … position to pay" that category. Emphasis should be put on the "*legal position*", which can be read as an indirect acknowledgment by Argentina that holdout creditors are a different category created by law. In this line of thinking, Buchheit (1991) noted that "*you can do pretty much whatever you want in discriminating among creditors (in terms of who gets paid and who does not) but do not try to justify your behavior by taking steps that purport to establish a legal basis for discrimination*". This is precisely what happened in the case of Argentina.

More worrying is that now, when the New York courts were faced with the need to interpret the pari passu clause, we find ourselves in the same position that we were in the year 2000 with the Belgian courts. The District Court found that: "*Argentina lowered the rank of the plaintiff bonds in two ways: when it made payments currently due under the exchange bonds while persisting in its refusal to satisfy its payment obligations currently due under the bonds; and when it enacted the Lock Law.*" This clearly denotes that it is not just the actual subordination but something else.

The decision of the District Court was appealed to the US Court of Appeals for the Second Circuit. Surprisingly, the Court of Appeals understood that "*… in pairing the two sentences of its Pari Passu Clause, the FAA manifested an intention to protect bondholders from more than just formal subordination*". Again, as the District Court

found, it is not just the actual subordination (which took place as result of the Lock Law) but something else.

According to the Court of Appeals, the pari passu clause protects against: (i) "the issuance of other superior debt (first sentence)";[4] and (ii) "the giving of priority to other payment obligations (second sentence)".[5] This confirms the broad interpretation of the pari passu clause along similar lines to the Belgian court's opinion and that as result of this we might be witnessing the opening of a Pandora's box. This means that the courts can order: (i) the debtor not to pay other debts of equal rank without making a rateable payment under the debt benefiting from the clause; (ii) other creditors: (a) not to accept a payment from the debtor unless the pari passu-protected lender receives a rateable payment; or, (b) if they have knowingly received and accepted a non-rateable payment, they are answerable to the pari passu-protected creditor for a rateable share of the funds; and (iii) a financial intermediary (eg a fiscal agent or a bond clearing system) can be ordered to freeze any non-rateable payment received from the debtor and to turn over to the pari passu-protected creditor its rateable share of the funds (Buchheit and Pam (2004)).

In January 2012 the District Court issued a temporary restraining order enjoining Argentina from altering the payment process (including the use of different firms or other vehicles). In addition, in February 2012, the same court issued an injunctive relief order requesting that, each time that a payment is made on exchanged bonds, the same fraction of the amount due on them should be paid to holdouts. The latter decision is based on principles of equitable relief, given that Argentina had formally made clear its intention not to pay. Since Argentina might refuse to comply with the injunctive order, the District Court extended its applicability not only to Argentina but also to its officers, agents, servants, employees and attorneys as well as other persons who are in active concert or participation with them. The injunctive order expressly prohibited Argentina's agents from aiding and abetting any further violation of the order by the court.[6] This clearly falls under point (iii) in the previous paragraph. These procedural orders (ie the temporary restraining order and the injunctive relief order) are currently under scrutiny by the Court of Appeals.

3.3. A serious threat to New York as a leading financial centre for sovereign debt

The broad interpretation of the pari passu clause will affect New York as an international financial centre because sovereign issuers will fear that it opens the way to litigation on such clauses. In addition, the injunctive relief order enjoining other parties (ie financial intermediaries) has several operational ramifications that threaten to impair the functioning of the payment systems. On the other hand, if the injunctive order is reversed by the Court of Appeals, creditors' enforcement

[4] The first sentence of the pari passu clause included in the Argentine bonds reads: "… shall at all times rank pari passu and without any preference among themselves".

[5] The second sentence of the pari passu clause included in the Argentine bonds reads: "… shall at all times rank at least equally with all its other present and future unsecured and unsubordinated [e]xternal [i]ndebtedness".

[6] This conflicts with another norm that states that intermediaries cannot be affected (Art. 4-A of the UCC).

rights will be affected. In both scenarios, New York stands to lose as an international financial centre, particularly in the sovereign debt arena.

To follow this line of thinking, it is worth noting that in the 1990s, in the *Pravin* and *Elliott* cases, the Court of Appeals for the Second Circuit was faced with balancing two important considerations, namely: (i) granting US-resident bondholders scope to pursue the repayment of their credit, although this would limit the chances of achieving a debt restructuring under the auspices of the IMF; and (ii) disallowing such claims because they would prejudice New York's status as a financial centre. Both issues were important for US foreign policy. For the Court of Appeals, however, the priority lay with the protection of investors and the sanctity of contracts.

4. Concluding remarks

The broad interpretation of the pari passu clause is a very delicate issue because we are opening a Pandora's box without knowing what might emerge. If we consider the aftermath of the *Elliott* case, which was the first time that there was a broad interpretation, and despite the fact that it was by a less authoritative court (many of the sovereign debt issuances are governed by New York law), there were several developments: the sovereign debt restructuring mechanism proposal of the IMF; the private sector reaction, ie the use of CACs and exit consent; increased NGO activism clamouring for debt forgiveness; increased investment by distressed debt funds; "vulture" repudiation by means of legislation in the United States and the United Kingdom; the erroneous re-emergence of the odious debt principle and its mutation into the debts of odious regimes and illegitimate debts; and an increased aggressiveness on the part of debtors and creditors.

As indicated above, this will seriously affect the future of the sovereign debt market in New York. The harm has been done; one way or another, there will be damage.

The interpretation of the pari passu clause in the pre-Argentine litigation was incorrect. It was based on the Belgian court's interpretation of the pari passu clause in the broad sense. Post-Argentine litigation, the interpretation could have been based on the correct reading of the clause based on an actual breach of it due to the ranking or narrow form as a result of the legal subordination from the Lock Law. Unfortunately this was not the case. This was a great missed opportunity, and it will trigger a new round of litigation.

As Olivares-Caminal (2009a,c) and Gulati and Scott (2012) noted, the clause has little or no meaning in the sovereign debt context. However, it is a boilerplate and boilerplates are sticky. After the decision of the Second Circuit Court of Appeals it will become even stickier. Looking forward, it is the task of lawyers – as guardians of the purity of language in contracts – to clearly state whether the pari passu clause should read as "rank" or "rateable payment" instead of the not very clear Latin phrase "pari passu". In the meantime, there are still many contracts with Frankenstein-like pari passu clauses that will be litigated.

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Risk managers on default probability for prime sovereigns: Moderator's introduction

Øysten Olsen[1]

Thank you, Stephen. I'll be quite brief in my introduction, thus leaving the work to the invited speakers and specialists, the real specialists in this field.

Throughout this workshop we have been reminded that even prime sovereigns have defaulted on occasion. Yet the main risk we take, or that investors take, by holding prime sovereign debt may not be hard default. That is an extremely rare event, at least among OECD countries. The risk is rather value loss of different kinds, resulting from what we can call "soft defaults", which may entail unexpected inflation or the depreciation of the currency in which the debt is denominated. And we all know that, historically, debt has been reduced or evaporated in just this way. And there are other forms of soft default too. We have just learned about the complexities around restructuring and about the imposition of seniority rules by supranationals. We have recently seen both these forms of soft default during the euro crisis.

Value losses on sovereign debt often occur when the investors collectively increase their subjective probability estimates of a hard or soft default. The high yields resulting from that implicit downgrading is one important form of mark-to-market loss incurred on a bond portfolio.

So the question is: how we can measure this risk and how we can control this kind of default risk on sovereign debt? The speakers will consider different ways: ratings, models, internal models (quantitative or qualitative), or measures based on market indicators.

We have three very qualified speakers, comprising a practitioner, a policymaker and an academic. I leave the floor first to Tom Wilson from Allianz. Tom, the floor is yours.

[1] Governor, Norges Bank.

Risk management in the face of risky sovereign debt: four observations

Thomas C Wilson[1]

First, let me thank the conference organisers for the opportunity to present my own thoughts and listen to the very interesting contributions and debates so far. Before continuing with my own observations, however, let me preface my comments with the standard disclaimer: the following represents my own, personal opinion and does not necessarily reflect the opinions of Allianz SE or its associated operating companies.

For my contribution, I would like to make four observations which might be somewhat controversial, the objective being to generate an interesting debate afterwards. To put them in context, these observations reflect my own experiences over the past decade as a chief risk officer in European insurance companies that are active in long-dated life asset accumulation/decumulation products. These products have a high social value, providing individuals with security in both their working life and after retirement and allowing them to save for their retirement; however, from a shareholders' perspective, such products must be managed carefully using a long-term, liability-based investment strategy. Obviously, sovereign debt has a large potential role in such investment strategies.

1. Compelling reasons to change traditional business models

My first observation is that there are compelling reasons to change traditional insurance business models given the developments in the European sovereign debt market over the past two years.

Historically, European insurers could be characterised as holding domestic sovereign bonds for duration and other, "higher-risk" assets such as corporate bonds, real estate and equity in order to generate investment returns. This naturally led some European insurance companies to build up high concentrations in sovereign government bonds. And, more than five years ago, I would have considered this "barbell" strategy to be very prudent, one which would allow me to sleep well at night because of the perceived (and some would argue, actual) low risk profile of sovereign issuers.

Obviously, subsequent developments have demonstrated that the (near) risk-free assumption for sovereign bonds was not correct and that the strategy of so heavily concentrating assets in sovereign debt was, in retrospect, imprudent. In a 180-degree change, the prudent insurance companies of today are actually those that have run through scenarios or "war games" reflecting debt haircuts, defaults and the redenomination of sovereign debt.

[1] The normal disclaimer applies: These are the views of the author and do not necessarily reflect those of Allianz or any of its operating subsidiaries

Adding salt to the wound, it is has also become apparent that sovereign issuers represent a source of risk that is highly correlated with the global financial system, most usually through their implicit and explicit backstopping of banks. This is evidenced by the high correlation between selected sovereign and bank CDS spreads. While I recognise that correlation does not imply causation, it is fair to say that a perceived sovereign problem may negatively impact the ability of some banks to secure funding and liquidity, with reverberations propagated across the banking sector and the real economy. This correlation is especially problematic for European, long-term institutional investors since a large proportion of most European fixed income indices comprise bank issuers, implying that institutional investment portfolios are both directly and indirectly impacted by perceived sovereign risk.

Adding insult to injury, the innovative monetary and fiscal responses used to stabilise investor confidence in sovereign debt and stabilise the banking sector (for example, the LTRO, "quantitative easing", secondary market bond purchases etc, activities which are often bundled under the label of "financial repression") have an additional adverse effect on insurers by driving nominal (risk-free) interest rates lower and lower. This creates a third source of pain for long-term, liability-driven investors – since assets may fall short of the duration of liabilities, lower interest rates may be economically painful for European life insurers offering long-term products

Not surprisingly, the combined effect – the direct valuation impact of rising sovereign spreads, the indirect impact on bank paper and the economic impact on our liabilities from low risk-free interest rates – has led to a strong and adverse re-rating of life insurance companies' share values. In other words, although insurers may have long-term investment horizons out of necessity based on their liability structure, their share prices are impacted immediately to these events, an impact that should not be ignored by the management of publicly listed companies.

This brings me to my first observation – *that European insurers cannot afford to be as concentrated in sovereign issuers in the future as we have been in the past*. This is not to say that they cannot invest in sovereign bonds, but rather that the high concentration levels seen in the past are no longer prudent from a shareholder's (and, in a worst-case scenario, a policy holder's) perspective. The real question is therefore, "How much is too much?"

2. Guidance from solvency regulation not likely

My second observation is that, when answering the question "How much is too much?", the industry probably cannot look towards regulation for guidance.

Although there may, in principle, be incentives under Basel II/III to consider sovereign risk from an objective, risk management perspective, I am going to let others make that case; it seems to me that, if the appropriate incentives do exist, then they are not particularly strong in practice. I note that I am not an expert in this area and that I could be wrong. However, as a casual observer, I cannot help but note that the apparently high use of LTRO funds by banks to purchase domestic sovereign debt is a surprising outcome if such risk management incentives did in fact exist somewhere, anywhere, under Pillar I, Pillar II or via a large exposure directive. Furthermore, it is not clear to me that objective, risk management

incentives are likely to be strengthened anytime soon given the almost "symbiotic" relationship between some sovereigns and their banking systems.

Turning to the insurance industry, I am not sanguine about the incentives here either. Such incentives do not seem to exist under the current Solvency I framework and, based on the recent drafts of Solvency II and "reading the tea leaves", I do not see a high likelihood of any stronger incentives in this regard emerging any time soon.

Let me be explicit here: I do not mean to assert that the current solvency and regulatory environment *encouraged* banks and other regulated financial services firms to hold large amounts of sovereign debt – which I realise is a hotly contested issue. Rather, my impression is that they do not seem to do much to *discourage* high concentrations.

In summary, *when answering "How much is too much?", it seems to me that we as an industry are given relatively limited regulatory guidance and are pretty much on our own.*

3. Prudent firms need to rely on enlightened self-interest

This leads me to my third observation: that, in answering the question "How much is too much?", prudent firms have to learn from the past and implement sound risk management practices as a matter of enlightened self-interest. And what are the lessons learned by prudent firms? I have three, the first two of which are technical and predictable and the third based more common sense.

First, in terms of our Pillar I internal models, *sovereign issuers should be treated in exactly the same way as corporate issuers* in terms of capital and concentration charges, albeit reflecting their appropriately estimated default probabilities. In this, Allianz group is more prudent than regulatory requirements, having historically included spread risk for most sovereign issuers in our internal model as well as default risk for lower rated sovereigns and those not held domestically in the domestic currency. This more prudent practice is currently under review and I anticipate a strengthening of the principle before the end of the year.

Second, *an informed and objective credit assessment of sovereign issuers should be undertaken*. While intellectually challenging (and likely the theme of a small cottage industry of PhD dissertations in the future), recent experience has demonstrated that this is absolutely necessary. Allianz currently uses an approach for determining internal credit ratings, and associated default probabilities for sovereign issuers which blends three information sources and analysis:

- publicly available ratings;
- our own internal analysis of economic fundamentals such as relative debt levels to tax capacity and GDP etc; and
- market information in the form of bond and CDS spreads.

Stopping here would be the typical response by a technically oriented firm relying on internal models to provide guidance – the models are challenged by actual developments leading the quants to change in the background ("Let's improve the model! Let's improve the model!"), more often than not by making things even more complicated. If I wanted to be cynical, I would say that the some

in the financial services industry are so dazzled by their technical cleverness that they risk losing sight of reality.

And what is the reality in my opinion? The reality is that such model enhancements are not a replacement for common sense. In this case, the specific reason is that they are typically adequate over a short time horizon, but not over the time horizon that is relevant for a long-term, liability-based investor.

Let me explain: A previous speaker mentioned that ratings and market data are "informative" with respect to future changes in rating or value, but informative only over the next three- to six-month horizon. While that may sound like an eternity to a may fly (or a bank that can trade in and out of its position daily), as a long-term, liability-based investor having to accumulate very large positions in a hold-to-maturity strategy in order to match our liabilities, three to six months is nothing. As a consequence, while intellectually stimulating, all of the modelling improvements unfortunately may not prove very useful if a sustained bull economy is followed quickly by a bear, leaving us with limited or no ability to replace risky long-term assets with new, lower-risk assets of similar duration in its wake. Such dynamic management is limited by the size of the positions and the availability of new, replacement assets. In this, insurers unfortunately do have a longer-term horizon.

So where does the common sense come in? In this, I am an old-fashioned risk manager living by old-fashioned credos: whenever modelled risk and gross notional exposure get so far apart that you can drive a bus through the difference, be very, very careful! In such situations, only absolute exposure and concentration limits, as opposed to probabilistic, model-driven limits, will prevent you from suffering a material loss when your assumptions fail, as they are sure to do in unexpected ways during the next financial crisis.

This is a lesson that property and casualty companies know very well, for example in the context of natural catastrophe risks where "low frequency" events can blow through modelled MPL (maximum potential loss) thresholds unless total nominal exposures are contractually limited. It may also have been learned in the banking industry, reinforced by the actual experience of such "zero-deemed risk" or low modelled risk positions as monoline guaranteed and derivative-protected positions, CDO warehouses held in the trading book, off-balance sheet SIVs and so on.

So what is the third lesson that prudent long-term, liability-based insurance investors should learn from recent experience? Regardless what our modelled risk numbers tell us, we cannot let our exposure get so big that it threatens our existence when the model assumptions fail, no matter how unlikely the scenario might seem.

4. What are the public policy lessons?

This leads me to my fourth and final observation. Clearly, central banks, public policy and financial services regulation have an interest and a role to play in providing a stable market, financial services sector and real economy. What recommendations would I make, unbidden, to them?

First, when things settle down, *change and strengthen the regulatory framework* – Pillars I & II as well as large exposure rules – so that they do, in fact, encourage

good risk management practices. While this understandably may not be feasible today, it is going to make my job as CRO a lot easier in the future: while enlightened self-interest is pervasive in firms with a strong risk culture, it is nonetheless more challenging if all of your less enlightened competitors are perceived as having an easier job of it!

Second, *encourage robust, broad and deep European debt capital markets*. As a European insurer, we need duration and yield if we are to support long-term businesses. But we also need effective diversification. We cannot get this based on sovereign and correlated bank issuers comprising a large part of the European fixed income market. My personal preference would be to take down more public and private debt issued by corporations that are financing productive growth; taking these risks through an opaque and leveraged bank balance sheet is not as desirable. This does not mean that I would like to build a parallel bank business system, creating my own "shadow bank" – nothing could be farther from my wishes! Rather, I would like to see a broad, robust and deep corporate debt capital market develop in Europe, similar to the one in the United States, including both public and private placements to offer institutional investors more direct access and opportunities to finance real economic growth. But this would require changes – for example, consistent documentation across Europe, consistent insolvency proceedings etc – changes that I believe should be encouraged by regulators as well.

Finally, *work towards removing the spectre of risk from sovereign bonds*. Answering the question, "How much is too much?" is not a binary decision. Clearly, our internal assessment of sovereign risk will play a role. If we want to increase the appetite of long-term, liability-based institutional investors, then give us the confidence that the underlying issues are being resolved.

While this is not directly the responsibility of banking and insurance regulators and supervisors, I believe that it would be good if we all collectively reinforced the message that *the underlying fundamentals driving sovereign issuer risk need to be credibly addressed*. Cynically speaking, the past two years have been episodic, with periodic losses in market confidence being addressed by short-term actions such as liquidity infusions and bold statements designed to buy time until the stronger tailwinds of economic recovery or higher debt-financed consumption (again!) can resolve the situation, all while avoiding significant and difficult political decisions regarding the underlying issues. While this is not an entirely fair statement for all countries, the upcoming budget debate in the United States illustrates that there are still a lot of difficult decisions to be made. In the end, only a credible resolution of the underlying issues will restore the confidence of long-term investors.

In summary

This concludes my four observations, which were, in summary:

- There are compelling reasons to change the traditional business model for long-term, liability-based investors – we simply cannot afford the historically high concentrations to sovereign issuers as in the past.
- The relevant question is therefore, "How much is too much?", and I do not think that we can rely on the regulatory framework to guide us in answering this question.

- Rather, firms need to base their decisions on enlightened self-interest, focusing especially on:
  - improving internal capital models to treat sovereigns like corporate issuers;
  - improving our internal credit assessment of sovereign issuers; and
  - most importantly, in case our great modelling relies on assumptions that turn out to be wrong in the next crisis, not allowing very high concentrations, even (or especially) when the modelled risk is a small fraction of the notional exposure.
- But enlightened self-interest is not enough. Regulators and public policy setters should consider:
  - when the situation improves, better aligning the regulatory and solvency framework with "enlightened self-interest";
  - encouraging the development of a broad, deep and robust corporate debt capital market in Europe; and
  - finally, urging that the underlying fundamentals are addressed, potentially requiring difficult political decisions.

Reserve management and the use of ratings at the Swiss National Bank

Jean-Pierre Danthine[1]

I could say that we are also a shareholder organisation, but shareholder pressure in the case of the Swiss National Bank is very specific and is not very intense. So, yes, our point of view is quite different.

I will first talk about our reserve management perspective. I will say a few words about the use of ratings in monetary policy thereafter.

Of course the reserve management of the Swiss National Bank has been relatively exciting of late. But this has been because of what Stan Fisher termed on Sunday the acceleration of our balance sheet. In terms of the topic of this workshop, things are somewhat less exciting, maybe I would even say relatively boring. And this has two reasons. First, when we talk about sovereigns, we have a very limited risk budget. But this is not where we take risks. The second observation, of course, is that liquidity is an even more dominant criterion for us than credit risk.

So let me say a few words about our investment policy. At the moment, we have a foreign currency reserve portfolio of something like CHF 430 billion, which is something like 70% of GDP, up by about CHF 170 billion in the past year. As a central bank, we invest, as you would imagine, very conservatively. We are not a sovereign wealth fund. We are not in that sense comparable to Norway. We consider ourselves to have a relatively progressive policy in the sense that we hold not only sovereigns but our share of equities is 12% at the moment, which by central bank standards is relatively high. Our share of bonds is consequently at 88%, because we are not in alternative investments. Corporate bonds represent about 5% of our assets, meaning that sovereigns and supra-sovereigns are 83% at the moment.

And on that part of our portfolio, this 83%, I would say that we play it safe. This is not where we take the risk. Safe or very safe or very limited credit risk means that, in terms of ratings, more than 90%, I think it's 96%, of our holdings are AAA or AA, and we have no investment below BBB. On this part of our investment, ratings are really a communication tool, and we use them as indicative. We play it safe, that is the dominant criterion. How we communicate that is by using this ratings terminology.

Now as I said, we have a very limited risk budget. The other point is that liquidity is paramount. This has always been the case because as a traditional central bank, we have reserves in order to be able to use them in stressed times. So the emphasis was always on highly liquid sovereigns, which means almost by definition high credit quality.

Today, of course, liquidity has another perspective. For us, with our size, we must be able to get in, and we must be able to get out, relatively easily. We have tried very hard in the last few months to keep the impact of our re-allocation of

[1] Vice Chairman of the Governing Board, Swiss National Bank; transcript of remarks.

reserves to a minimum, and I think we've achieved that despite rumours to the contrary, but markets have often been moved by rumours. So liquidity is crucial, simply in order to be able to invest the reserves that we've acquired at a very rapid pace. For us, the name of the game is to diversify, to minimise concentration risks, to limit our absolute risk exposure, across all sovereigns that are highly rated or relatively safe. Here market size is important but also tax treatment, administrative impediments, and legal risks that we would not want to take.

So given that background, credit risk assessment at the Swiss National Bank is not really at the forefront. We don't heavily distinguish between AAA and AA, and we are not going to take a huge amount of risk below that level. We have a small risk management unit which uses internal judgment, supported by ratings and other analysis. But we do not build our own models and we would not think of doubling the size of our risk management unit in order to analyse sovereign risk in greater depth. So the Bank of Canada's move, for instance, is not something we would imagine contemplating.

We communicate, as I've said, in terms of ratings. We use them in a way that is absolutely not mechanical. In fact, on the investment side, we have a relative opacity that allows us to use a considerable amount of discretion. So a rating change, for instance, would simply be a flag that might justify an internal note on whether we should think about the problem or not. A downgrade does not usually lead to a mechanical trigger, even when get below the BBB rate at which state we are no longer comfortable. We can afford to wait. We can hold to maturity, and we have every reason to avoid procyclical behaviour and reputational effects.

Now, from that perspective, what is the impact of the disappearance of a risk-free asset or the absence of a risk-free asset? Well, in many senses for us it is not really relevant. And we would argue that ratings are more appropriately termed risk rankings than ratings per se. Of course, we would feel more comfortable if the universe of risk-free assets were broader. We do have a problem with the growth of our reserves, with the problem of restricted opportunity, and it is a challenge for us to find markets where we can comfortably invest, given our risk appetite. But the notion of a risk-free asset per se is not something that worries us in any way.

Finally, I would like to turn, given this very boring description of our practice on the investment side, to talk a little bit about our use of ratings on the monetary policy side, because in many ways it's more significant, and it is more difficult to communicate. We use ratings to define our acceptable collateral basket, the SNB General Collateral basket. And here, obviously, opacity is not the name of the game. We have to be absolutely clear, with a stated and clearly communicated policy, so that here we do not have the same margin for discretion, although we do have some leeway that I will mention in a moment.

In order to understand what we do, I have to give you a few elements of our collateral policy. We use a collateral basket that we would like to define as tough in terms of its credit risk requirement. On the other hand, and this is the quid pro quo, we have a very open international policy. In fact, the majority of the collateral assets acceptable in our basket consists of non-Swiss franc-denominated securities. So we have a very international basket. On the other hand, we insist on very tough requirements. On top of those, we have a fully automated trading system, which at the moment and by design does not accommodate haircuts. We have no haircut on our collateral basket. On the other hand, we do have twice-daily margin calls.

Finally, the SNB definition of acceptable collateral has been adopted by the market itself. So more than 95%, in fact, I think it's close to 99%, of the interbank market in Switzerland uses SNB-acceptable collateral. So this puts us in quite a special position, and in this context we have decided to go to a fully rules-based approach. For foreign currency denominated securities our definition of high-quality assets is stated as no lower than a composite rating of AA–. So here we do put a lot of emphasis on the rating. And we stick to this, that is, we apply no discretion on the weaker side. We have applied some discretion some times on the tougher side, but no discretion on the weaker side.

We insist on a rules-based approach, and I would say it has worked perfectly well. Our repo market has worked extremely well during the crisis. And our approach minimises the signalling effect. We would have clearly in this context a significant signalling effect if we were to use our own internal rating in order to define our GC basket.

Basically, what we are saying is that our policy has some very good characteristics but, even so, we cannot avoid occasional difficulties. This was the case, for instance, in December 2011, when Irish titles, private and sovereign, were excluded from our GC basket because of the sovereign's downgrade. We did have a few phone calls to make, and we did receive a few phone calls but, of course, we would have had many more phone calls if early on we had been forced to make our own decision to exclude Irish titles from our basket, or if we had said for political reasons that we are going to refrain from doing that, and then suddenly the interbank market would not have been following us and would have taken a divergent route. So we believe that our approach keeps these challenges to a minimum, but it does have this component of what could be seen by some as a very high reliance on ratings from rating agencies.

Thank you.

Sovereign risk in bank regulation and supervision: Where do we stand?

Hervé Hannoun[1]

Introduction

It is an honour and a pleasure to speak at the High-Level Meeting for the Middle East and North Africa Region jointly organised by the Arab Monetary Fund and the Financial Stability Institute. Let me start by drawing your attention to the invitation of the BIS Board this year to the Central Bank of the United Arab Emirates to become a BIS member. Its acceptance will make it a part of the Basel process of cooperation among central banks, and I would like to congratulate Governor Al Suwaidi on this occasion.

Before my address proper, I would like in passing to underline the significance of the new global standards for banking regulation and supervision that were agreed in 2010. No less important was the reform introduced in 2009 in the process of regulatory standard setting at the global level. Before then, G10 countries set these standards and market forces led banks and authorities outside the G10 to adopt them. Since then, both the Basel Committee on Banking Supervision (the global standard setter for bank regulation), and the Group of Governors and Heads of Supervision (its oversight body) have expanded and now include all G20 countries. To take a Middle Eastern example, the Saudi Arabian Monetary Agency has joined the global standard-setting process and also participates in the Financial Stability Board. The enlargement of the Basel Committee, the Governors and Heads of Supervision group and the Financial Stability Board has materially contributed to the Basel III framework, a key G20 success of the past three years.

My topic today is the treatment of sovereign risk in banking regulation and supervision. This theme has been spotlighted by the sovereign debt strains affecting most advanced economies. My conclusion is that market participants' complacent pricing and accumulation of sovereign risk in the decade up to 2009 was a market led phenomenon that cannot be attributed to the Basel standards. However it becomes crucial for regulators and supervisors of large banks to clarify that although sovereign assets are still a relatively low risk asset class, they should no longer be assigned a zero risk weight and must be subject to a regulatory capital charge differentiated according to their respective credit quality.

Let me start by describing the recent rise in sovereign risk incurred by banks. I will then discuss how bank regulation and supervision currently treat that risk. Then I will suggest how to bridge the current gap between the pricing of sovereign risk in financial markets and its treatment in bank regulation and supervision.

[1] Deputy General Manager, Bank for International Settlements. Speech given at the Financial Stability Institute High-Level Meeting, Abu Dhabi, United Arab Emirates, 26 October 2011.

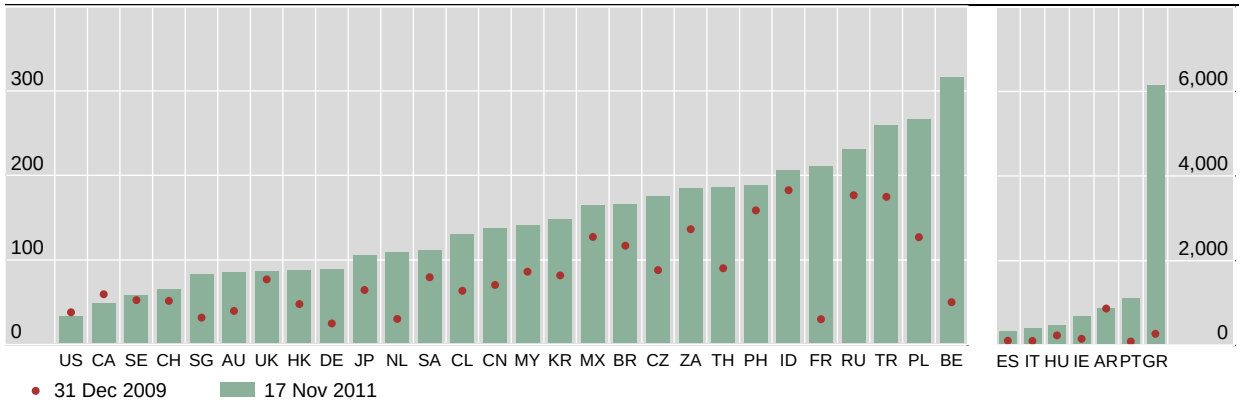
I. The rise in sovereign risk incurred by banks

A Pricing of sovereign risk in financial markets

To set the stage, I first summarise a few features of **sovereign risk pricing in financial markets**. This pricing is based on sovereign spreads in the cash bond markets and sovereign CDS spreads in the credit derivatives markets. It is both influenced by and reflected in sovereign credit ratings.

Sovereign CDS premia

Five-year on-the-run CDS premia, in basis points — Graph 1



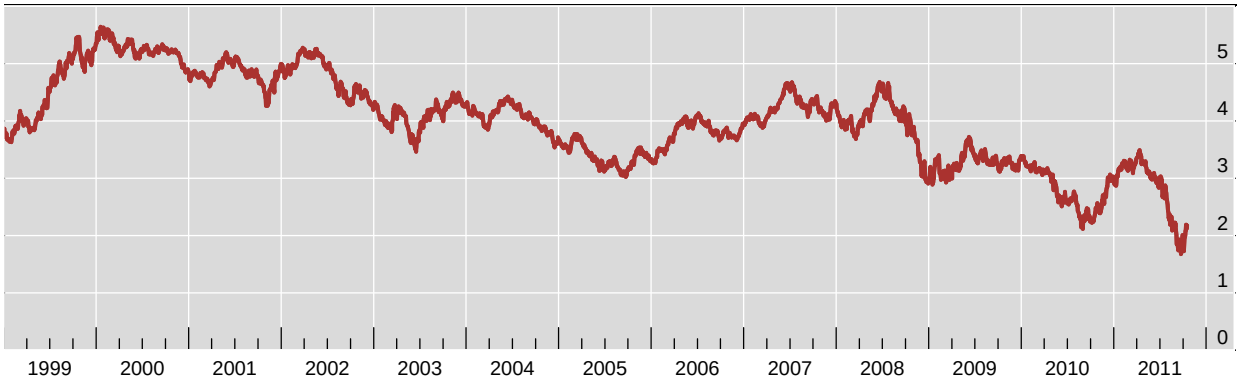
AR = Argentina; AU = Australia; BE = Belgium; BR = Brazil; CA = Canada; CL = Chile; CN = China; CZ = Czech Republic; FR = France; GR = Greece; HK = Hong Kong SAR; HU = Hungary; ID = Indonesia; IE = Ireland; IT = Italy; JP = Japan; KR = Korea; MY = Malaysia; MX = Mexico; NL = Netherlands; PH = Philippines; PL = Poland; PT = Portugal; RU = Russia; SA = Saudi Arabia; SG = Singapore; ZA = South Africa; ES = Spain; SE = Sweden; CH = Switzerland; TH = Thailand; TR = Turkey; UK = United Kingdom; US = United States.

Source: Markit.

- If we take a long-term perspective, sovereign risk pricing in financial markets follows a well known pattern: we observe long periods of complacency during which risk premia and risk perceptions are unusually low while risks are building up. These periods of complacency are followed by sudden changes in market sentiment, which are both too abrupt and too late. A prolonged period of risk underpricing, reflected in excessively compressed spreads, corrects in a dramatic widening of credit spreads. Market discipline works spasmodically rather than consistently. It cannot be relied upon to foster fiscal rectitude. This is illustrated by these graphs on the evolution of sovereign yields and spreads within the euro area from 1999 to 2011.

German 10-year government bond yield

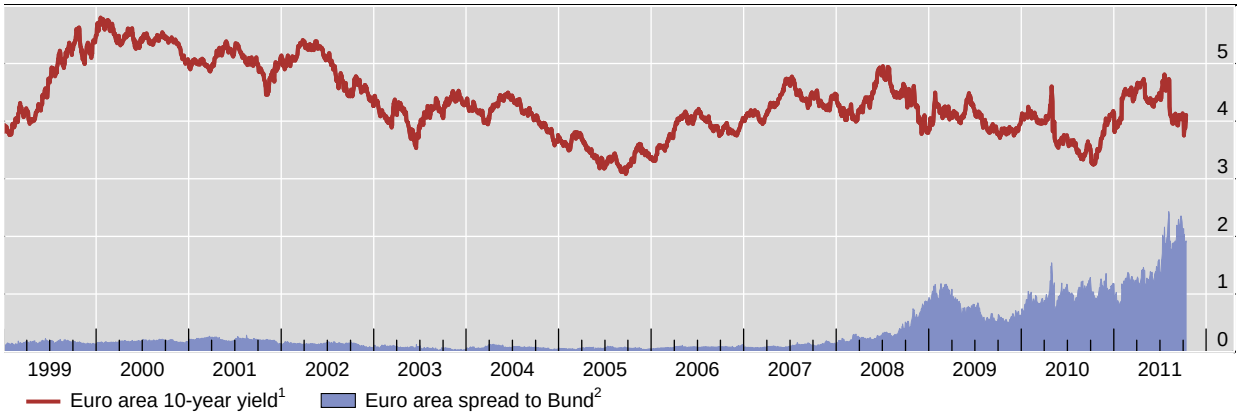
In per cent — Graph 2



Source: Bloomberg.

Euro area 10-year government bond yield

In per cent — Graph 3

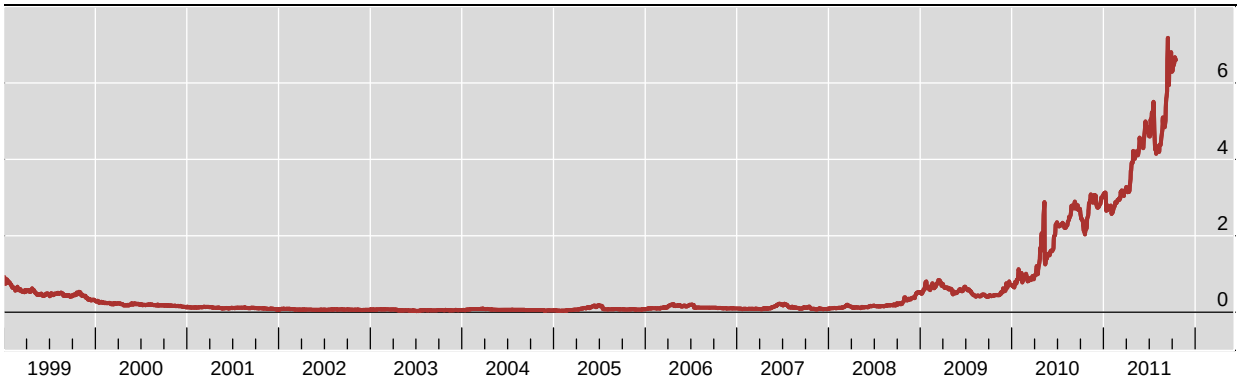


[1] Weighted average of 10-year national harmonized euro area government bond yields. The weights are the nominal outstanding amounts of government bonds in each maturity band. [2] Spread vis-à-vis 10-year German government bond yield.

Sources: ECB; Bloomberg.

Standard deviation of 10-year euro area yield spreads to Bund[1]

Dispersion of spreads to Bund, in per cent — Graph 4



[1] Daily standard deviation across the spreads between 10-year government bond yields of Austria, Belgium, Spain, Finland, France, Greece, Ireland, Italy, the Netherlands and Portugal and the 10-year German government bond yield.

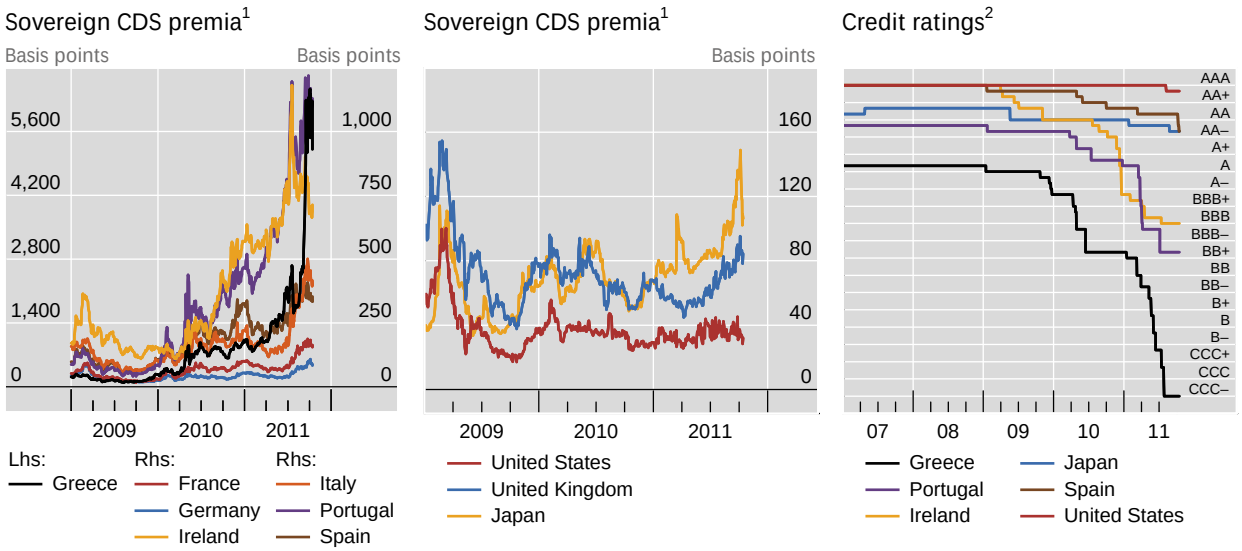
Sources: Bloomberg; BIS calculations.

The repricing of sovereign risk since 2009 follows a prolonged period of underpricing, especially in the euro zone where the compression of sovereign bond spreads (vis-à-vis German bund) reflected complacency among market participants. Market discipline broke down between 1999 and 2009 but has kicked in with a vengeance over the past 18 months.

- If we take a shorter-term perspective, the recent period has seen **an across-the-board rise of sovereign risk in financial markets**. This is reflected in the widening of sovereign spreads in the bond (cash) markets and sovereign CDS premia as well as in sovereign ratings downgrades (Graph 5).

Sovereign risk in financial markets

Graph 5



[1] Five-year on-the-run CDS premia. [2] Average of Fitch, Moody's and Standard & Poor's foreign currency long-term sovereign ratings.

Sources: Bloomberg; Markit.

The rise in sovereign risk in financial markets reflects a rise in the probability of default of most sovereigns as implied by their CDS spreads (Table 1).

One-year CDS implied probability of default

(in per cent)

Table 1

Sovereign	United States	Canada	United Kingdom	Germany	Japan	France	Spain	Italy
30/9/2010	0.05	0.05	0.09	0.04	0.07	0.10	0.57	0.43
30/9/2011	0.05	0.06	0.11	0.11	0.21	0.28	0.99	1.42

Source: Moody's capital markets research.

Highly rated sovereigns are still low-risk assets but they are no longer perceived as risk-free, they are no longer zero credit risk assets.

In terms of risk management, it is important to distinguish between credit risk (default risk) and credit spread risk. Credit risk reflects the risk of potential credit losses due to a counterparty default event (default risk), or a credit migration event (a downgrade from one rating grade to another) or a country transfer event. Credit

spread risk, which is part of the market risk incurred by a bank, reflects the market risk due to fluctuations in daily credit spreads (assuming no rating change) as distinct from the credit risk arising from a rating downgrade.

Both credit risk and credit spread risk are reflected in the sovereign spreads measured in the bond (cash) markets and in the CDS (derivatives) markets. Adequate capital requires coverage of both risks.

➔ Sovereign assets are no longer risk-free assets, and have increasingly become spread products or credit products

> "Markets are questioning the risk-free status of debt issued by a number of governments worldwide. This morphing of sovereign debt from a risk-free into a 'credit risk' instrument has far-reaching implications, not least for the smooth functioning of financial systems. It creates adverse feedback effects on financial institutions and, in particular, it magnifies counterparty credit risk and creates significant funding challenges for banking systems."[2]

B Volume of banks' sovereign exposure

The rise in sovereign risk incurred by banks is also reflected in the volume of banks' sovereign exposures. Since 2005, the BIS has compiled comprehensive data on national banking systems' exposure to sovereign borrowers on an ultimate risk basis, which take into account guarantees and other off-balance sheet exposures. Such exposures include not only cross-border exposures but also the local claims on governments of subsidiaries of foreign banks. But, and this is an important limitation, banks' claims on their home sovereigns are not included, although they often represent the major part of banks' sovereign exposure.

The earliest available data compiled on this basis pertain to the first quarter of 2005. The latest data published in the BIS *Quarterly Review* relate to the first quarter of 2011 (Table 2). Clearly, sovereign exposures of banks are very substantial. Given these exposures, sovereign debt strains immediately become bank debt strains.

Foreign claims[1] on the public sector of selected countries, by bank nationality — Table 2

		Foreign claims on						
		Belgium	Greece	Ireland	Italy	Portugal	Spain	Total
Bank nationality	Euro area	81.1	38.3	9.8	215.4	30.1	80.1	454.8
	France	51.5	13.4	2.9	105.0	8.6	32.6	214.0
	Germany	11.3	14.1	3.2	51.0	8.8	29.4	117.7
	United Kingdom	5.3	4.0	4.6	12.7	1.8	8.6	37.0
	United States	11.4	1.9	1.7	14.4	1.3	6.1	36.8
	Japan	9.4	0.2	1.1	29.8	1.1	10.4	51.9

[1] Foreign claims consist of cross-border claims and local claims of foreign affiliates. Not included are bank claims on their home sovereigns.

Source: BIS consolidated banking statistics (ultimate risk basis).

[2] J Caruana, "Basel III: New strains and old debates – challenges for supervisors, risk managers and auditors", speech delivered at the Bank of Portugal conference, Lisbon, 14 October 2011.

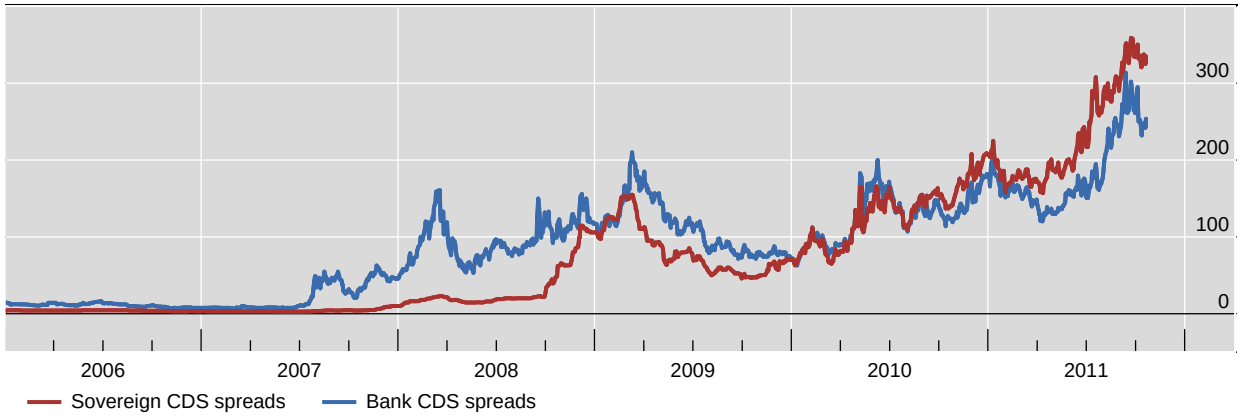
C Interaction between bank and sovereign spreads: probabilities of default

The following graphs illustrate the malign feedbacks between weak sovereigns and still fragile banking systems.

- Since the bank bailouts of 2008–09, market participants have priced sovereign and banking default risks as closely intertwined, with varying situations from country to country (eg contamination of banks by the sovereign in Greece, contamination of the sovereign by banks in Ireland).

iTraxx Europe CDS spreads

Five-year on-the-run CDS premia, in basis points — Graph 6

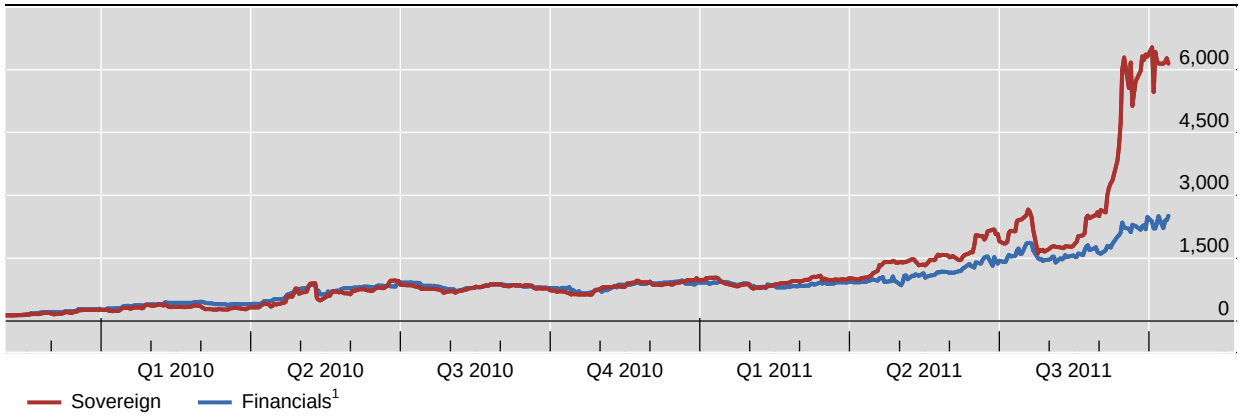


Source: JPMorgan Chase.

- Contamination of the banks by the sovereign (Greece)

Greek CDS spreads

Five-year on-the-run CDS premia, in basis points — Graph 7



[1] Simple average over a sample of domestic financial institutions.

Source: Markit.

- Contamination of the sovereign by banks (Ireland)

Irish CDS spreads

Five-year on-the-run CDS premia, in basis points — Graph 8

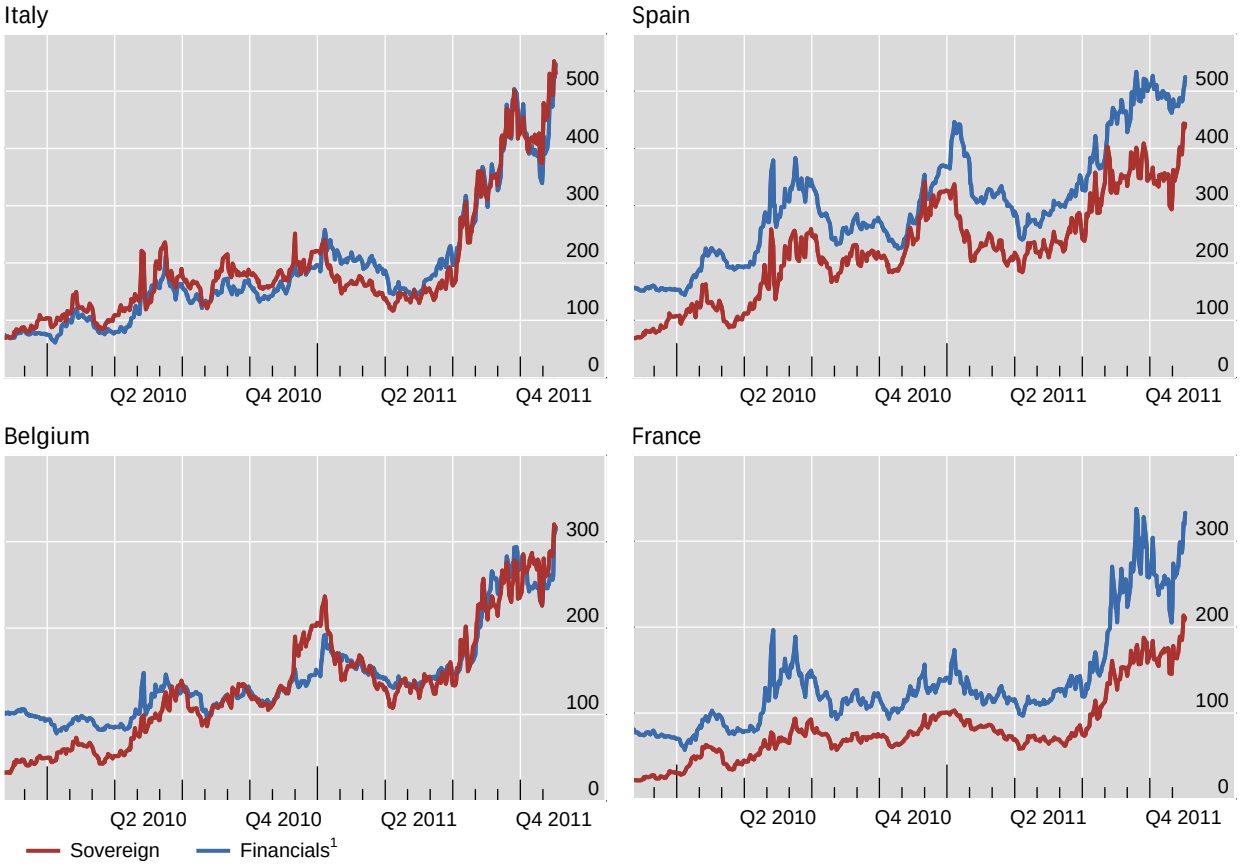
[1] Simple average over a sample of domestic financial institutions.

Source: Markit.

- Banks and sovereign spreads are highly correlated (in Italy, Spain, Belgium, and France).

CDS spreads

Five-year on-the-run CDS premia, in basis points — Graph 9



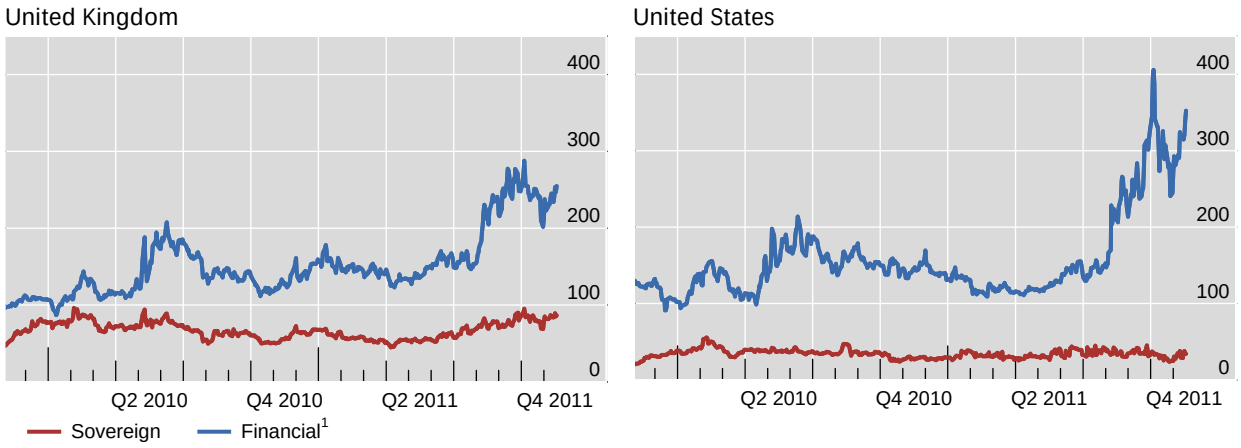
[1] Simple average over a sample of domestic financial institutions.

Source: Markit.

- The lower correlation in the US and UK cases is worth noting.

CDS spreads

Five-year on-the-run CDS premia, in basis points — Graph 10



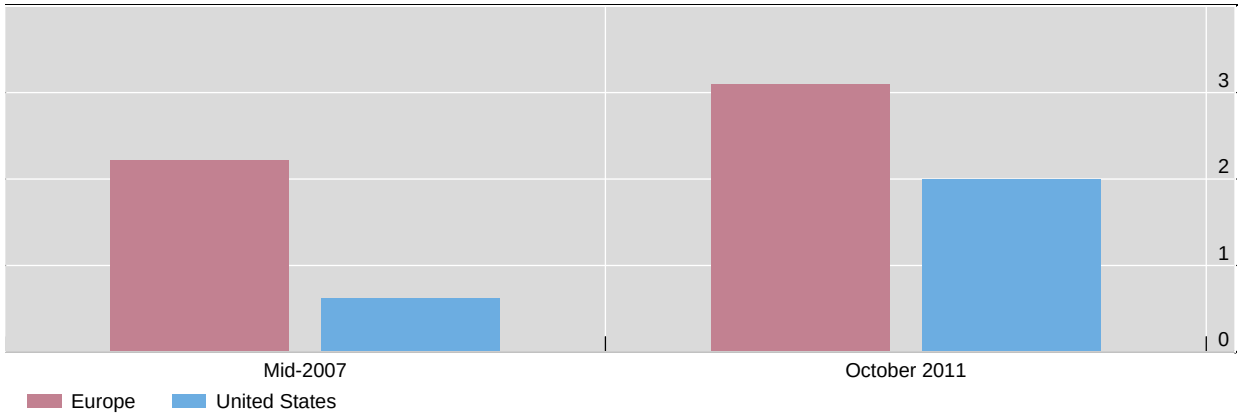
[1] Simple average over a sample of domestic financial institutions.

Source: Markit.

D Interaction between bank ratings and sovereign ratings: probability of bailout

- The bank rating methodology used by credit rating agencies takes into account not only a bank's standalone credit profile but also the prospect of government support in times of stress. As shown in Graph 11, rating upgrades that reflect implicit government support have increased since 2007. This means that credit rating agencies are still inviting investors to price in a large degree of public support for large banks – and this despite any "no bailout" policy stance that denies the use of public funds to rescue "too big to fail" institutions. The "probability of bail-out" as perceived by markets doesn't seem to have declined

Rating upgrade due to implicit official support[1] — Graph 11



[1] Rating upgrade is the number of notches that banks' ratings are increased based on the implicit expectation of official support.

Sources: Fitch Ratings and FSB calculations.

so far. However a number of recent downgrades of banks' ratings have been motivated by the recognition that the implicit government support may be weakening due to fiscal strains.

E The rise in sovereign risk in financial markets is not fully reflected in banks' accounting framework

In the absence of a full fair-value accounting framework, the sharp widening of sovereign credit spreads is not fully reflected in banks' financial reporting. This explains the very divergent estimates of the recapitalisation needed by European banks, depending on whether their sovereign holdings are marked to market or accounted for as held to maturity (amortised cost).

According to a recent IMF analysis of sovereign holdings by European banks, 12% of these exposures were included in the trading book (with fair value reflected in profit and loss), 49% were classified as available for sale (with any unrealised loss reducing equity, but with no hit to profit and loss) and 39% were classified as held to maturity (valued at amortised cost net of any impairment provision). As a result, the pricing of sovereign risk in financial markets currently diverges from the accounting framework applicable to the banking book, which does not reflect the widening of sovereign spreads in the profit and loss until an impairment provision is taken.[3] The repricing of sovereign risk in financial markets has found its way into banks' financial reporting only to a limited extent.

European banks: loss recognition on sovereign exposures — Table 3

	Percent of total exposures[1]	Accounting standards	Accounting practices	
		Impact	Valuation method	
Trading book	12	Realized loss/gain in profit and loss account	Fair value	Generally MTM. Mark-to-model if the market is inactive. As some banks, internal models for "illiquid" assets are used.
Available for sale	49	Unrealized loss/gain, impact on equity	Fair value	Generally MTM. Mark-to-model if the market is inactive. As some banks, internal models for "illiquid" assets are used.
Held to maturity	39	Provisions in profit and loss account	Amortized cost, net of any impairment provision, based on "incurred loss"	Provisions mostly taken on eligible Greek government debt.

[1] Based on the European Banking Authority's data on banks' exposures to high-spread euro area sovereigns. Held-to-maturity value is calculated as the residual. MTM = mark to market

Source: IMF Global Financial Stability Review, September 2011.

[3] That said, this same banking book accounting doesn't reflect in the profit and loss any capital gains resulting from the decline in "risk-free" rate (US Treasuries and German bunds), which may partially offset the widening of sovereign credit spreads.

II. Treatment of sovereign risk in banking regulation and supervision: Basel rules, Brussels rules, National rules

The global sovereign debt crisis has exposed fault lines in the regulatory treatment of sovereign risk. However, the deficiency is not in the Basel standards but in the way the global standards have been applied in some countries and especially in the European Union. But, as mentioned earlier, the main anomaly with hindsight remains how complacently sovereign risk was priced by financial markets in the decade up to 2009. At most, European regulation especially the zero risk weight assigned to sovereign exposure may have encouraged a complacent assumption among market participants that a "euro area umbrella" existed.[4]

A Mounting criticism of the regulatory treatment of sovereign risk

Critics have charged bank regulators and supervisors with tilting the treatment of sovereign risk to provide regulatory incentives for banks to accumulate large sovereign exposures. They cite three aspects:

a) Number one: a zero risk weight is applied to AAA and AA- rated sovereigns. The chairman of the IASB is said to have gone so far as to call this the "biggest accounting scam in history".

b) Number two: government bills and bonds form a substantial part of the liquid assets required in the newly established liquidity coverage ratio (LCR). This new ratio could be seen as incentivising banks to hold sovereign debt.

c) Number three: the large exposure regime in Europe excludes highly rated sovereigns from the 25% of equity limit on large exposures.

Combined, these three elements in the regulatory treatment of sovereign risk could be seen as supporting "financial repression" (ie policies that require private savings to be invested in government bonds and are likely to end up with a long-term misallocation of capital).

B Such criticism does not apply to Basel regulatory standards:

Let me explain why:

1. Risk weights for sovereign assets in Basel II and Basel III

(a) sovereign exposures in the banking book

True, the Basel II standardised approach allows a zero risk weight to be applied to AAA and AA- rated sovereigns[5] (Table 4).

[4] R McCauley and W White, "The euro and European financial markets", in P Masson, T Krueger and B Turtelboom (eds), *EMU and the international monetary system*, IMF, 1997, pp 352–53.

[5] Paragraph 54 of Basel II (comprehensive version published in June 2006) also mentions that, "At national discretion, a lower risk-weight may be applied to banks' exposures to their sovereign (or central bank) of incorporation denominated in domestic currency and funded in that currency." Many jurisdictions have applied zero risk weight to such exposures. This paragraph relates to the standardised approach only.

Basel II standardised approach: sovereign risk weights — Table 4

Credit assessment	AAA to AA–	A+ to A–	BBB+ to BBB–	BB+ to B–	Below B–	Unrated
Risk weight	0%	20%	50%	100%	150%	100%

However, large and sophisticated banks are expected to implement the IRB (internal ratings-based) approach and not the standardised approach. The Basel II internal ratings-based approach for calculating credit risk capital does not imply a zero risk weight for highly rated sovereigns. It calls instead for a granular approach allowing for a meaningful differentiation of sovereign risk. The IRB approach requires banks to assess the credit risk of individual sovereigns using a granular rating scale, accounting for all relevant measured differences in risk with a bespoke risk weight per sovereign.

Basel II: illustrative IRB risk weights and capital charge for sovereigns[1] — Table 5

Asset class: LGD: 45% Maturity: 2.5 years	Sovereign exposure	
Probability of default (in %)	Risk weight (in %)	Capital charge (in %)
0.01	7.53	0.60
0.02	11.32	0.91
0.03	14.44	1.16
0.05	19.65	1.57
0.10	29.65	2.37
0.25	49.47	3.96
0.40	62.72	5.02
0.50	69.61	5.57
0.75	82.78	6.62
1.00	92.32	7.39
1.30	100.95	8.08
1.50	105.59	8.45
2.00	114.86	9.19
2.50	122.16	9.77
3.00	128.44	10.28
4.00	139.58	11.17
5.00	149.86	11.99
6.00	159.61	12.77
10.00	193.09	15.45
15.00	221.54	17.72
20.00	238.23	19.06

[1] Assumes loss-given-default of 45% and maturity 2.5 years.

Source: Basel Committee on Banking Supervision.

Under the IRB approach to credit risk, there is no explicit stipulation with regard to sovereign exposure, except that the 3-basis point probability of default (PD) floor that was prescribed for corporate and bank exposures does not apply. However,

there are qualitative requirements that govern the design and operation of the IRB approach. In particular, paragraph 389 of the Basel II framework requires that there be a "meaningful differentiation" of risk. Banks opting for the IRB approach are allowed to use their own internal measures for key drivers of credit risk and, in this context, have the obligation to determine their own estimates of sovereigns' probabilities of default. Further, banks using the Advanced IRB approach can also rely on their own estimates of loss-given-default for each sovereign. These risk measures form the input parameters (PDs, LGDs…) that are converted into risk weights and regulatory capital requirements (Table 5). Treating a significant portion of sovereign exposure as risk-free contradicts the granularity required for a meaningful differentiation of risk. This does not comply with the Basel II framework.

(b) Sovereign exposures in the trading book

With the introduction of an incremental risk charge on the trading book, Basel III also goes in the direction of risk differentiation (not zero risk weight) through the capture of default risk (including sovereigns) in the trading book. In addition, other risks like interest rate risk are captured under the trading book rules.

(c) Leverage ratio: guarantees a non-zero capital charge for sovereign exposures.

In addition, the introduction in Basel III of a leverage ratio backstops the risk-based system of capital requirements and reduces the costs of any model risk in the system of risk-weighted assets. Sovereign exposures are fully included in the denominator of the leverage ratio, another step away from a zero risk weight for them.

2. Liquidity requirements (Basel III)

The liquidity requirements under Basel III do not designate government securities as the only qualifying liquid assets. In the Basel III liquidity rules, high-quality liquid assets are categorised into Level 1 and Level 2 assets. Level 1 assets (mainly highly rated sovereigns) are considered to be of the highest credit quality and best market liquidity. But highly rated corporate and covered bonds also qualify as liquid assets (Level 2), albeit subject to some limits, including a 40% limit for Level 2 assets. Therefore the Basel III liquidity requirement cannot be seen as "financial repression". On the contrary: it recognises that, for most banks, corporate and covered bonds will help promote a diversification of the liquid asset pool. Indeed, the Basel Committee's quantitative impact study found that banks currently hold Level 2 assets amounting to well below 40% of their total liquid assets. Moreover, banks are free to diversify both their sovereign and corporate liquidity buffers globally, provided they have sound processes to manage any foreign exchange risk.

3. Large exposure regime

The large exposure regime is part of the EU capital requirements directives (CRDs). The exemption of sovereigns from the large exposure limits is not part of a global standard but a regional decision. It is important to recall, however, that Basel II

addresses concentration risk through the Pillar 2 provisions,[6] and that the BCBS established in June 2011 a group to review the large exposures regime.

C Brussels standard: a generalised zero risk weight

The European CRDs have introduced a generalised zero risk weight which is not in line with the spirit of Basel II. Article 89(1)(d) of the CRD (amended by Directive 2009/111/EC or "CRD II"), and Annex VI Part 1 paragraph 4 assign a risk weight of 0% for "exposures to Member States' central government [...] denominated and funded in the domestic currency of that central government". The main criticism which can be levelled at the European directives is that, instead of confining the zero risk weight to the standardised approach, they permit a generalised zero risk weight through the so-called "IRB permanent partial use" rules. According to these rules, a bank can apply the IRB approach to corporate, mortgage or retail exposures, while applying a one-size-fits all zero risk weight to the sovereign debt of EU member states. This is equivalent to a mutual and unqualified exemption of certain sovereign risks from capital charges, an exemption inconsistent with Basel II's risk-sensitive framework.[7]

In fact, it is evident from the 2011 European stress test report that only 36 out of the 90 participating banks applied their own internal model to sovereign risk, a lower fraction than for the corporate, mortgage or retail asset classes (see Table 6).

Usage of IRB approach by banks involved in the 2011 European stress test — Table 6

Portfolio	Number of banks participating: 90 of which: number of banks with IRB models: 59
Sovereign	**36**
Institutions	44
Corporate	58
Retail residential mortgage	53
Retail revolving	31
Retail SME	44
Total retail	53
Commercial real estate	54
Total	59

Source: European Banking Authority, EU-wide stress test results, 2011.

To avoid this risk of "cherry picking" (applying IRB to most portfolios but the zero risk weight for sovereigns), some jurisdictions (Australia, Canada) prohibit the partial use of the standardised approach by IRB banks.

[6] Supervisory review process.

[7] In effect, this was a reversion to the risk-insensitivity of Basel I's treatment of sovereign risk: absent for OECD countries, present for non-OECD countries.

D US standard

The US situation regarding the treatment of sovereign risk is also unsatisfactory. It continues to be based on the zero risk weight applicable to OECD countries in the old Basel I framework, as the Basel II IRB approach is not yet fully in place.

III. Supervisory recognition of sovereign risk: the way forward

A Need to put an end to the fiction of a uniform zero risk weight for sovereigns

To that effect an amendment to the CRDs is, in my view, necessary. That said, it is fair to say that we do not know precisely how other jurisdictions treat sovereign risk. The EU directives have the merit of being transparent and it may well be that elsewhere in the world a zero risk weight is also widely applied to sovereign exposures in a more opaque, purely domestic, regulatory process.

B Need for supervisory recognition of sovereign risk: work in progress

In a number of advanced economies, sovereign debt has lost its apparent risk-free status. This cannot be ignored by the regulatory capital framework: Basel II (banking book) and Basel III (trading book and leverage ratio) allow for this recognition. But it is up to supervisors to enforce this recognition of sovereign risk in banks' risk measurement and capital adequacy.

The newly established European Banking Authority (EBA) has taken a major step in this direction. The 2011 EU-wide stress test included a stress test with haircuts applied to sovereign exposures in the trading book and increased impairment provisions for these exposures in the banking book. To prevent underestimation of risk for sovereign debt held in the banking book, the EBA set a floor on the sovereign

Probability of default used in the EU wide stress test for sovereign exposures — Table 7

S&P rating	Average two-year PD implied by external ratings in % (EBA calculations)
AAA	0.03
AA	0.03
A	0.26
BBB	0.64
BB	2.67
B	9.71
CCC-C	36.15

Source: EBA: methodology note for the 2011 stress test.

risk parameters. In particular, the EBA set probabilities of default based on external ratings (Table 7). For instance a non zero probability of default (0.03%) is applied to AAA and AA rated sovereigns. This represents a much more rigorous approach than before and paves the way for a sound implementation of Basel standards in the European Union, moving away from the zero risk weight for sovereigns.

C Importance of a consistent implementation of Basel standards across jurisdictions Basel Committee review of the consistency of risk weighting of assets

While the Basel standards are not liable to the criticisms regarding the regulatory treatment of sovereign risk, their implementation in national jurisdictions can be in some cases. To address this type of problems, the Basel Committee has initiated a full review of its members' implementation of the Basel regulatory capital framework. This includes the measurement of risk-weighted assets in both the banking book and the trading book, to ensure that the implementation of the global standards is consistent in practice across banks and jurisdictions. No doubt that the treatment of sovereign risk will be an important dimension of this review.

Conclusion

The sovereign debt crisis has revealed the full implications of lax fiscal policies in a number of advanced countries. These include large increases in the perceived default probability of a number of highly indebted sovereigns whose bonds were previously thought to be risk-free. These changed perceptions have understandably had a large impact on financial institutions and markets. I have argued, nevertheless, that the Basel II standards provide a framework that allows for an adequate reflection of these risks in banks' capital requirements. However, this requires that the national rules which implement the Basel global standards do not allow the sovereign risk exposures of domestic banks to be underestimated. The European directives that introduced a generalised zero risk weight for sovereign exposures provide an example of bank regulation that stands at variance with the spirit of Basel II. By contrast, efforts such as the 2011 EU-wide stress tests, which required additional capital backing for sovereign exposures, represent a step in the right direction towards sound implementation of the Basel II rules. In any case, it is clear that the European experience vis-à-vis sovereign risk offers useful lessons for the regulators and supervisors elsewhere.

A key objective for governments in advanced economies is to earn back the quasi-risk-free status of their debt. However, the return to fiscal discipline will bring public debt down only progressively and, in the meantime, the sovereign risk incurred by banks will have to be properly measured and covered by adequate capital. As the IMF recently pointed out, "Attempts to suppress adverse indications of sovereign risk (be they credit ratings, CDS positions or other indicators) may ultimately undermine market liquidity and the credibility of the authorities."[8] Moving from denial to recognition of sovereign risk in bank regulation is one key element that will help to restore confidence and to foster fiscal discipline.

[8] *IMF Global Financial Stability Report*, September 2011.