σCμ

risConometrics Weekly Comment

Author: Aly Iman
aiman@risConometrics.com
risConometrics Inc.
212 518 8910

April 10, 2010

Greece Sovereign Debt Crisis & Co-ordination Failure

Section 1: Co-ordination Failure as a Prisoners' Dilemma

Mohamed El-Erian of Pimco writing in the FT ('Why the Greek rescue isn't going to plan', April 7), spoke of Greece as a sovereign risk problem that is not going as per plan because of, what he referred as, a co-ordination failure. He wrote "It is a classic co-ordination failure in game theory. Any first mover will become worse off. Indeed, it is in the interest of any single party to wait for others to move first. As a result, no meaningful progress is made, the problems fester, and the risks of a disorderly outcome increase".

This sounded exactly like the Prisoners' Dilemma (PD) problem in classical game theory that shows why two economic actors may not co-operate despite it being in their best interests to do so. The dilemma is as follows.

Two crime suspects are taken in by the police. The police have insufficient evidence for a conviction. They separate both the prisoners, visit each of them and offer the same deal. If Prisoner A testifies (or defects against the other Prisoner) for prosecution against Prisoner B and the latter remains silent (and hence co-operates with Prisoner A), A goes free and B receives the full sentence of twenty years. If both remain silent, both prisoners are sentenced to a diluted sentence of five year as the more serious charge cannot be proven. If each betrays the other, each receives a ten year sentence. Each prisoner must either betray the other and testify against his partner, or remain silent and thus cooperate with his partner. Each one is assured that the other would not know about the betrayal or cooperation before the end of the investigation.

If such a game is played once and only once, defecting against the other prisoner is the rational outcome over co-operating. Irrespective of the actions of the Prisoner B, Prisoner A will always gain a greater payoff by choosing defect. Similarly, Prisoner B will always gain a greater payoff by choosing to defect regardless of Prisoner A's actions.

If the game is played repetitiously with each player, both of who are aware as to how many times the game will be played and, both of who, are in possession of the opportunity to punish the other player for previous non-co-operative play, it turns out that the rational outcome for the two players continues to be to defect again and again, irrespective of how many times the game is repeated.

Only when the players play the game an indefinite or random number of times, it is possible to enforce co-operation as a rational equilibrium outcome. Only in such a case, the incentive to defect can be overcome by the threat of punishment.

risConometrics Inc.
www.risConometrics.com
Blog: http://www.risConometrics.com/webblog
PLEASE SEE END OF NOTE FOR IMPORTANT DISCLAIMER/DISCLOSURE

Section 2: Greece and Germany as Players in the Game

Greece and EU are playing such a one-shot (unrepeated) PD game.

Greece's crime is that is did not heed the EU directives and put its fiscal situation in order in line with the Maastricht Criteria. EU's crime is that it did not enforce the Maastricht Criteria and temporarily suspend Greece as punishment when it failed to follow the guidelines on fiscal debt.

Now that both the EU and Greece have been 'caught' by the Sovereign/Euro crisis, each is figuring out its best response. For Greece the optimal outcome, in the context of the prisoners' dilemma, is to defect, while EU co-operates. Defection would imply that Greece does not rectify its finances and is instead bailed out by the EU. The optimal outcome for the EU in such a game is to force Greece to rectify its finances - Greece cooperates. Thus EU does not bail Greece out –in the context of game, EU defects.

If both the EU and Greece defect as is the optimal rational outcome in the game, both lose out somewhat. Specifically, Greece is likely suspended from the Euro region until it fixes its finances and the EU suffers a bout of credibility as markets begin to question the future of the Euro.

An IMF-led bailout in this context would be akin to both parties pleading guilty to partial charges. This again is not the rational equilibrium outcome and undermines the situation as a non-European solution. It would be somewhat of a co-ordinated outcome.

It is optimal for both Greece and EU to cooperate with each other and put forth a credible plan internally to resolve both the fiscal deficit situation of Greece (and to some extent rest of the imbalances amongst the PIIGS), and - as suggested by Martin Wolf – to stimulate aggregate demand in countries running surpluses (like Germany) for goods from countries with deficits (like Greece). This would prevent Greece from wading deeper into recession, and help preserve the Euro region in its present shape and form. However such an outcome is difficult to achieve as in the context of the game it is not a self-enforcing, rational outcome. Consequently, solutions suggested by Germany hover around a zero-sum world of beggar-my-neighbor policies in which a country attempts to play to its benefit alone by increasing market share from the rest of the region.

Expertise of Trichet notwithstanding, a currency union without a fiscal and political union is difficult to succeed as it distorts incentives for members to part take in the benefits of a monetary union without necessarily incurring all the costs such a union imposes.

Section 3: A Similar Story

Greece's actions are no different fundamentally than the actions of banks going into 2007. Banks took on excessively risky exposures, without allocating appropriate levels of capital, to increase potential profits as they implicitly, and correctly, assessed that, on failure, there was a reasonable likelihood of a potential bail out. Thus, they enjoyed the benefits of being the key actors in a subsidized payments system.

Figure 1: Greek over German Spread at historic highs is making Greek Bonds as expensive to issue as Junk Bonds. Source: Bloomberg.

Figure 1:

Similarly, Greece has enjoyed the benefits of the single currency without having picked up the costs that come with such a union, specifically in terms of strapping its

expenses and putting its fiscal house in order.

Worse still, the situation is not getting better. Yesterday, Markit reported that CDS protection on Greece had become more costly than that on Iceland. Earlier, Iceland had to seek a $4.6 billion IMF-led bailout after its three biggest banks collapsed in October 2008.

Ironically despite their demonization, CDS markets have been helping Greek to continue to issue primary debt as CDS trading is providing an avenue to hedge Greek exposure. This has eased hedging concerns in the primary issuance market allowing it to work, albeit at costs of issuance similar to that of junk bonds. Such a prohibitive cost undermines Greek government's ability to continue to fund itself in the coming months.

Section 4: That May Get Enroll More Players

El-Erian ended his FT article by emphasizing "……Greece is part of a wider, and historically unfamiliar phenomenon – that of a simultaneous and large disruption to the balance sheet of many industrial countries. Tighten your seat belts".

This bears to mind the remarks of CLSA analyst Chris Wood on CNBC (March 01, 2010) that "….Credit Crisis we saw in the West in 2008 and 2009 has simply been deferred, because 95% of the so-called government policy solutions to deal with this Crisis have simply been to extend government guarantees. So the problem has been transferred from the private sector to the public sector. It is just a matter of time before investors' revolt against these sovereign guarantees. The crisis is going to happen first in Europe. The U.S. will be the endgame."

Figure 2:

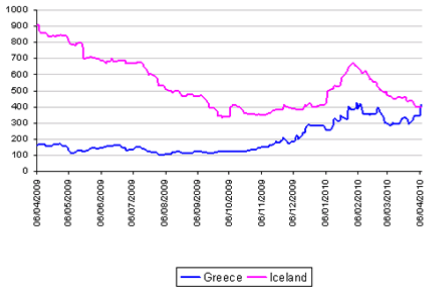
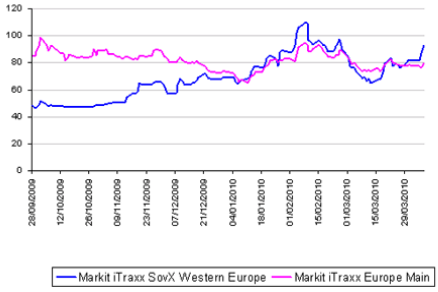


Figure 3:



Two astute market observers may not be completely right but one may ignore them at one's own peril.

Aly Iman
aiman@risConometrics.com
Chief Strategist & Partner
risConometrics Inc.

Aly Iman

Digitally signed by Aly Iman
DN: cn=Aly Iman, o=risConometrics Inc., ou, email=aiman@risConometrics.com, c=US
Date: 2010.04.09 15:59:19 -07'00'

σCμ

Figure 2: Cost of insurance for Greece touched that of Iceland, a country that was bailed out by the IMF. Source: Markit's CDS Report, Courtesy Gavan Nolan

Figure 3: Cost of insurance for Western European Sovereigns is rising once again indicating possible spreading of concerns. Source: Markit's CDS Report, Courtesy Gavan Nolan

σCμ

IMPORTANT DISCLOSURE: The views expressed in this report (which includes the actual rating assigned to an investment as well as the analytical substance and tone of the report) accurately reflect the personal views of the analyst(s) covering the subject securities. No part of said person's compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this research report.

The information in this report, or on which this report is based, has been obtained from sources that the author(s) believe to be reliable and accurate. However, it has not been independently verified and no representation or warranty, express or implied, is made as to the accuracy or completeness of any information obtained from third parties. In addition, the statements in this report may provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to a historical fact or a current fact. These statements involve known and unknown risks, uncertainties and other factors which are not exhaustive. The companies contributing to this report operate in a continually changing environment and new risks emerge continually. Readers are cautioned not to place undue reliance on these statements. The analysts contributing to this report undertake no obligation to publicly revise or update any statements, whether as a result of new information, future events or otherwise and they shall in no event be liable for any loss or damage arising in connection with the use of the information in this report.

This work was prepared by Aly Iman at risConometrics Inc.
risConometrics Inc.
65 Broadway, Suite 712
New York, New York 10006
Tel.: +1 (212)518 8910
E-mail: aiman@risConometrics.com
http://www.risConometrics.com
Blog: http://www.risConometrics.com/webblog/
© 2010 risConometrics Inc.
All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording, or by any information storage and retrieval system without explicit written permission of author or risConometrics Inc or as set forth in the section titled 'Reproduction' below.

All risConometrics Inc. research reports are distributed electronically and are available to clients at the same time via the firm's website (http://www.risConometrics.com). Immediately upon being posted to the client section of the firm's website, the research reports are then distributed electronically to clients via email upon request. Selected research reports are also printed and mailed at the same time to clients upon request. Requests for risConometrics research may be made by contacting the risConometrics Inc. during market hours at +1 (212)518 8910.

IMPORTANT DISCLAIMER: risConometrics Inc. IS NOT PAID BY ANY COMPANY TO RECOMMEND SECURITIES TO INVESTORS.

risConometrics Inc. and any of the company's publications whether in the form of a written opinion or material posted on the Web Site including but not limited to 'risConometrics Advisory Notes', 'risConometrics Quarterly Forecast', 'publication', 'research note', (hereinafter collectively referred to as 'risConometrics research', are published as an information service for subscribers, and it may include opinions as to buying, selling and holding various securities and opinions on future likely economic scenarios. However, the publishers of risConometrics research are not brokers or investment advisers, and they do not provide investment advice or recommendations directed to any particular individual, client, and subscriber or in view of the particular circumstances of any particular person. risConometrics research does not guarantee that you will out-perform the market. The information provided by risConometrics research is obtained from sources believed to be reliable but is not guaranteed as to accuracy or completeness. Subscribers to risConometrics research or any other person, who buy, sell or hold securities should do so with caution and consult with a broker or investment adviser before doing so.

Unless stated otherwise, risConometrics research does NOT receive compensation from any of the companies featured in our research. However, at various times, the publishers and employees of risConometrics research may own, buy or sell the securities discussed for purposes of investment or trading. risConometrics research and its publishers, owners and agents, are not liable for any losses or damages, monetary or otherwise, that result from the content of risConometrics research.

Past results are not necessarily indicative of future performance. Performance figures, if any, are based on actual recommendations made by risConometrics research. The exception is when the results are stated as being back-tested. Due to the time critical nature of securities trading, brokerage fees, slippage, and the activity of other investors, risConometrics research cannot guarantee that clients and subscribers will mirror the performance stated in our track records.

While many trade results are from actual trades, some results posted by risConometrics research are hypothetical. They are based on the price when the play was recommended by risConometrics research. risConometrics research cannot guarantee that any person bought or sold the actual security for the prices listed in this publication or the Web Site. The prices listed in the risConometrics research or its Web Site are the closing prices from publicly available sources on the day the play was published, unless a specific target or entry price was reached during that day, or unless an actual trade was placed by editors of risConometrics research. Investors may receive greater or lesser returns based on their trading experience and market price fluctuations.

The information contained on risConometrics research is provided for general informational purposes, as a convenience to the clients and subscribers of risConometrics research. The materials are not a substitute for obtaining professional advice from a qualified person, firm or corporation. Readers are advised to consult the appropriate professional advisor for more complete and current information. risConometrics research is not engaged in rendering any legal or professional services by placing these general informational materials on risConometrics research or the company's Web Site. risConometrics research and its publishers specifically disclaim any liability, whether based in contract, tort, strict liability or otherwise, for any direct, indirect, incidental, consequential, or special damages arising out of or in any way connected with access to or use of risConometrics research, even if risConometrics research has been advised of the possibility of such damages, including liability in connection with mistakes or omissions in, or delays in transmission of, information to or from the user, interruptions in telecommunications connections to risConometrics Inc., or its Web Site or viruses.

risConometrics research makes no representations or warranties about the accuracy or completeness of the information contained in its publication or on it Web Site. Any links provided to other server sites are offered as a matter of convenience and in no way are meant to imply that risConometrics research endorses, sponsors, promotes or is affiliated with the owners of or participants in those sites, or endorses any information contained on those sites, unless expressly stated. However, risConometrics research may receive compensation from server sites which may be provided through links. risConometrics research is the copyright owner of all text and graphics contained in this publication or on its Web Site, except as otherwise indicated.

Other parties' trademarks and service marks that may be referred to herein are the property of their respective owners. You may print a copy of the information contained herein for your personal use only, but you may not reproduce or distribute the text or graphics to others or substantially copy the information in this publication on your own server, or link to risConometrics research or its Web Site, without prior written permission of risConometrics. Reproduction: Permission to use and reproduce documents and related graphics available in this publication and on the Web Site is granted, provided that: (1) permission is sought by the author or from risConometrics Inc.; (2) the appropriate copyright notice appears in all copies and that both the copyright and this permission notice appear; (3) use and reproduction of documents and related graphics available in this publication and on the Web Site is limited to personal, non-commercial use; (4) no documents or related graphics, including logos, available in this publication of on the Web Site are modified in any way; and (5) no graphics, including logos, available in this publication of on the Web Site are used separate from accompanying text. Use or reproduction for any other purpose is expressly prohibited by law, and may result in civil and criminal penalties. Violators will be prosecuted to the maximum extent possible.

OTHER THAN AS SET FORTH ABOVE, ANY REDISTRIBUTION of the risConometrics research or the information contained therein or on its Web Site, without the written consent of the publishers of risConometrics research, is STRICTLY PROHIBITED. Copying and/or electronic transmission of risConometrics research is a violation of copyright law.