Douglas J. Elliott
The Brookings Institution
October 12, 2011

# Eurozone Governments and the Financial Markets: A Troubled Marriage

Financial markets and the governments of advanced economies around the world are inextricably tied together in an unbreakable marriage. The two sides need each other. Governments borrow huge sums of money and, for its part, the financial system requires a large base of safe, liquid assets to function efficiently. In some times and places, however, that marriage is very troubled. Right now, the Eurozone is a prime example. The financial markets do not seem to understand or trust the governments and those sentiments are returned by many policymakers, including key ones.

My previous paper, "Why can't Europe get it right the first time … or the second … or the third?[1]", laid out the painful political constraints that explain some of the confusion and apparent irrationality in the government responses to the Euro Crisis. This paper tries to explain why the markets react as they do to those government decisions and signals. It addresses these key points:

- Eurozone sovereign bonds lie on a spectrum between national bonds and Eurobonds, from a financial perspective
- Changing perceptions of where bonds are on that spectrum can substantially alter their value, which explains why prices of bonds of troubled countries are so closely linked
- Bond prices are inherently more affected by risk perceptions than by upside potential
- Eurozone governance is so complicated that it is natural that markets misjudge policies at times
- Speculation in troubled eurozone bonds plays a significant role, but one which is often exaggerated

**Eurozone sovereign bonds lie on a spectrum between national bonds and Eurobonds, from a financial perspective.**

The eurozone is somewhere between a grouping of national governments and a single, larger entity. National governments of its 17 countries make most of their own decisions, as nation-states have since the Treaty of Westphalia in 1648 established the basic rules of the road for interactions between countries. However, they have ceded monetary policy decisions to the European Central Bank (ECB) and have agreed upon a host of other common economic arrangements. These include business regulations of various kinds, common trade policies, and even transfers of aid to weaker regions within the eurozone. There are also agreed caps on fiscal deficits, although these caps were largely eroded a few

[1] See http://www.brookings.edu/papers/2011/0822_euro_crisis_elliott.aspx

years into the eurozone's existence and were temporarily blown away by the financial crisis and the severe recession that followed.

As a result of this hybrid nature, investors in, say, Italian debt do not know definitively whether they are holding the debt of a stand-alone country or a kind of "Eurobond" that reflects the creditworthiness of the entire zone, or something in between. (Eurobonds are a financing mechanism proposed by many analysts that would be backed by the joint guarantees of all the eurozone members, including Germany and the other strongest credits in the zone.) For much of the previous decade, eurozone government bonds traded at very similar interest rates, suggesting that the markets really thought they owned something much like a Eurobond. Once that complacency was shattered, interest rates diverged and now vary sharply within the eurozone, but are still not as disparate as they would be if there were no expectation of help from the richer eurozone countries to the poorer[2].

**Changing perceptions of where bonds are on that spectrum can substantially alter their value, which explains why prices of bonds of troubled countries are so closely linked.**
European policymakers often express exasperation that the markets are not differentiating sufficiently between the situations of the different troubled eurozone countries. For example, when Italian government responses in August were deemed quite insufficient by the markets, there was a knock-on effect on bond prices in Spain and other troubled countries.

The key to understanding these reactions is to realize the extent to which it matters where sovereign bonds lie on the spectrum from national debts to eurozone debts. A hypothetical numerical illustration, laid out in greater detail in the appendix, illustrates how important this factor is. For simplicity, assume that investors believe that there will be complete clarity a year from now as to whether Italy will have as much support as needed from the stronger eurozone countries or whether it is effectively to be left to its own resources as "Too Big to Bail," as some in the market describe it. Further, assume that investors are demanding a 6% interest rate on 10-year Italian government bonds[3]. This could plausibly represent the average of three potential scenarios for the situation a year from now, weighted by the probability of their occurring:

*Scenario A*: There might be a 60% probability that it will be clear a year from now that the eurozone really is sticking together and that an Italian bond is quite similar to a Eurobond supported by the

[2] In addition to benefitting from the belief that there is still a substantial probability of aid, bonds of the weaker countries also gain from other advantages of being in the eurozone. If any of these countries left the euro, the market would begin charging them substantially for the much higher foreign exchange rate risk that they would face. They would also be free from the fiscal disciplines imposed by eurozone membership which, while far from perfect, do push countries towards actions necessary to keep their houses in order and therefore provide some reassurance to investors in their bonds. One cause of the extremely high market interest rates on Greek debt, although not the primary one, is the possibility that Greece might leave the eurozone.
[3] I have rounded up modestly, for simplicity. The September 29th auction of Italian bonds produced a 5.49% interest rate on a 10-year bond and such bonds were available in the market a few days ago for an effective yield of 5.52%.

strength of all eurozone countries. At that point, a fair rate of interest on the bond might be a mere 3%[4], making the actual interest rate of 6% very attractive, driving its price up by 23% and making owners of Italian bonds very happy[5].

*Scenario B*: There might be a 10% probability that Italy stands on its own and appears likely, but not certain, to muddle through without a default. The clarity that it is largely on its own might well cause investors to demand an 8% interest rate, since there is enough of a chance of a future default to warrant an increase in the interest rate. This would imply that Italy is currently receiving a 2 percentage point discount on its market interest rate because support from the stronger credits in the eurozone appears likely if needed. The disappearance of that hope is assumed to cause the market rate to rise to 8%, producing a 12% loss of value, since the bonds are paying only 6% annually, a rate below the new market rate.

*Scenario C*: Finally, there might be a 30% probability that Italy is on its own and chooses to restructure its debt, with or without the consent of the bondholders, to bring its debt burden down to a controllable level. This might seem like an excessively high probability, and perhaps it is. But, it is not hard to construct a political and economic case in which things fall apart in the eurozone sufficiently to produce such serious problems that a restructuring would seem a sensible action. (The problem is not that any one disaster scenario is very likely but that there are so many ways it could all go wrong.)

In this scenario, I assume that there would be a 30% writedown of principal and a reduction in the interest rate paid by Italy to 4%. This is considerably harsher than what was proposed for Greece a few months ago, but the Greek action was intended to be moderate enough not to frighten holders of the bonds of other weak eurozone countries too much. For Italy to be moved to restructure, the problems in the eurozone would already have to be so great that the country is more likely to initiate a harsher restructuring so as to have a hope of managing the resulting debt burden. I assume that a market interest rate for the restructured bonds might be 6%, reflecting the positive aspects of the reduced debt burden offset by the considerable negative that Italy will have demonstrated a willingness to let bondholders take losses and might do so again at some future time. In truth, it is very difficult to know what the market would demand after such a restructuring. Under these assumptions, the fall in the value of the bonds from the assumed reduced principal and interest would be 40%.

Under these assumptions, the value of a $100 bond a year from now should be (60% times $123) plus (10% times $88) plus (30% times $60) or approximately the current value of $100. Assuming investors

[4] We do not know the required rate on a Eurobond, but 10-year German government bonds are yielding about 2%. A Eurobond would likely need a somewhat higher interest rate, both because the zone as a whole is weaker on average than Germany and because German bonds currently benefit from a “safe haven” effect, as it is perceived to be significantly safer than many other European countries. This effect would diminish considerably if current tensions passed and if Germany’s creditworthiness helped back the Eurobonds.

[5] Market prices for bonds move in the opposite direction of market interest rates. If market rates rise, then bonds issued earlier with lower rates become less attractive and fall in price. The decline needs to be sufficient to make the effective yield (counting any capital gain or loss from buying below or above the principal amount) equal to current market rates.

view the 6% interest received over the next year to be adequate compensation for that year, this suggests that the upside and downside cases roughly balance out at present prices under these assumptions about the probabilities and effects of the different scenarios.

This is purely an illustration to show the importance of the different factors, although I have tried to make assumptions that are very broadly reasonable. Whatever the actual numbers used by investors in their own, much more sophisticated[6], analyses, the overall approach reflects the balancing act they must manage in determining the value of Italian bonds.

One important implication is that the key factor is likely to be the assumed probability that the eurozone really does stand behind Italy. If, for example, we used the same assumptions except that there is only a 50% probability of eurozone support and a 40% chance of a restructuring, then the market would need to demand roughly a 6.5% interest rate rather than a 6% rate. Thus, a relatively small change in the probability that the eurozone sticks together can have a significant effect on the interest rate the country needs to pay. This could then be magnified further by the higher estimate of the future debt burden on Italy as a result of the increased interest rate, unless markets are confident that the rise is only temporary. In contrast, a 10 percentage point shift in the probability of Scenario B versus Scenario C, would only move Italian interest rates by about a quarter of a percentage point. This illustrates that developments purely within a given country can be less significant than indications of likely eurozone activity.

Thus, strong market movements based on indications about the relative political willingness of the stronger eurozone countries to stand with the weaker ones can be quite rational. This is a key reason why market interest rates for the weakest eurozone countries show a strong tendency to move in parallel, often shaped by developments in the overall tone of the debate about how much the eurozone should support troubled economies. The market *does* differentiate; an adverse political development in Italy will have more effect on Italian bonds than on Spanish bonds. However, Spanish bonds will still move because of the information provided about potential reactions by the stronger eurozone countries, who may find it harder to support greater fiscal integration in the eurozone if there is a perception that a major country of concern to the market is not taking appropriate steps. The sheer size of the support potentially needed also influences its likelihood and is affected by the number of countries perceived to be in trouble and the depth of their problems.

It is interesting that Vitor Constancio, the Vice President of the ECB, did not mention this particular aspect of market movements in an otherwise excellent and detailed recent speech about contagion effects in the eurozone sovereign debt markets[7]. It may be that this reflected political constraints on

[6] Serious investors and speculators would generally use a wider range of scenarios and more detailed assumptions about timing, the shape of any restructuring, etc. They would also take into account illiquidity in the markets, current and potential bond purchases by the ECB, and other "technical" factors.

[7] See http://www.ecb.int/press/key/date/2011/html/sp111010.en.html

what he could highlight, given the tensions between the ECB and Germany, or it might be further anecdotal evidence of the misunderstandings that currently exist between policymakers and markets.

**Bond prices are inherently more affected by risk perceptions than by upside potential**

Bonds are not priced like stocks, because the returns received by their holders differ. Stock investors are co-owners of the companies and share in both the downside and the upside, which tends to make them trade on what is *most likely* to happen to the company's future profits, although the price will also reflect strong opportunities and risks even if they are not probable. Bondholders, however, are capped on the upside. The most they receive is what was originally promised them, but they can receive as little as nothing if things really go wrong. (Generally bonds will pay out something even in a bankruptcy or restructuring, but the losses can be very significant.)

Bond investors therefore focus on risk more than they do on unexpectedly positive outcomes. When things are going well, this does not make too much difference, since the risks are not significant enough to warrant a significant price discount. However, in a situation such as exists today in the eurozone for the weaker countries, the severity of risks, and their associated probabilities, largely determine where bonds trade.

Thus, financial markets are not saying, with the possible exception of Greece, that the situation in the eurozone countries will blow up. Rather, bond prices indicate that the risks of default or restructuring are high enough for investors to demand a significantly increased interest rate to protect them. Even this should be kept in perspective. Right now, Italian bonds may be trading at 3 percentage points a year in interest rate higher than a true Eurobond would trade in calm markets. This is not the kind of premium that would be demanded if an Italian default or restructuring appeared to be the most likely scenario.

**Eurozone governance is so complicated that it is natural that markets misjudge policies at times**

Government decisions at both the national and eurozone levels will be the key determinants of whether bondholders receive their promised principal and interest payments. This is typical of investments in sovereign debt. Judgments about their creditworthiness are usually inherently more political than economic. Economics does clearly play a role – there are economic conditions and levels of debt that make it virtually impossible to pay and other conditions that make payment nearly certain.

However, even the most-stretched eurozone countries are in the range of circumstances where politics is more critical than economics. Greece, the weakest of the group, could handle its large debt burden if its politicians and public made it their absolute top priority, just as Latvia was recently willing to undergo a very severe recession (essentially a depression) in order to avoid default. However, it is rare for a country to be willing to go as far as Latvia was to preserve its credit record and Greece does not appear to be such a country. For its part, many bond investors have indicated that they would be relatively calm about Italy's ability to pay, were it not for its very troubled political dynamics.

So it matters that there is considerable truth in the premise that markets are confused about how the eurozone works politically. But, who can blame them? The political structure of the European Union (EU), and of the eurozone within it, is extremely complicated. Further, the most critical decisions need the approval of 17 eurozone countries, requiring an understanding of the political structures of each of those nations, as well as the dynamics of negotiations between those countries. It does not help that there are so many politicians and bureaucrats who speak on the subject, often to cross purposes. Beyond all that, the banking systems of the eurozone countries are so intimately connected with the sovereign debt problem that it helps to understand them as well if one wants to see how the political and economic dynamics will play out.

Moreover, pessimism and impatience are realistic reactions to the underlying situation and the political complexities. The financial crisis demonstrated that complex systems are particularly prone to failure and that bad economic situations usually fail to improve when allowed to marinate for long periods. Even those who are optimistic about the chances for a successful resolution of the Euro Crisis are forced to admit that there are many ways in which this happy conclusion could be forestalled, ranging from the refusal of a small country to participate, to the German Constitutional Court disallowing various proposed solutions, to the most fundamental question of what Chancellor Merkel will choose to do if backed into a corner. I am a relative optimist on the likelihood of the eurozone avoiding the worst outcomes, but the many complex potential sources of failure create a substantial probability of worst case outcomes nonetheless.

If the earlier numerical illustration is at all indicative of the views of investors, the markets probably believe an acceptable outcome is more likely than not, even if the process of getting there is ugly. They cannot, however, be blamed for seeing considerable risk of the downside case occurring despite their hopes. It would be unrealistic not to have substantial fear.

Adding still further to the confusion is that key players in the eurozone have changed their minds over time, either through the weight of argument or due to changing circumstances. If powerful participants in the decision-making can misjudge, why would we expect markets to always understand and correctly weigh what is going on?

**Speculation in troubled eurozone bonds plays a significant role, but one which is often exaggerated**

There is no doubt that speculators have sometimes played a substantial role in moving the prices of bonds of troubled eurozone countries, particularly during otherwise slow trading days, such as in August. At times, rumors, probably spread in part by speculators, have combined with market ignorance about some of Europe's complexities, and with short-term supply and demand factors, to create panics. For its part, the ECB has also contributed to unnatural market conditions by acting as a buyer of last resort for eurozone bonds. Its actions have generally contributed to stability, but add another non-market element to what used to be a genuinely free and liquid market in the debt of all eurozone countries. (For example, it is fairly clear that the ECB let Italian rates rise at points where the Berlusconi government appeared to be watering down fiscal reforms, in order to make clear that tough actions had to be taken.)

However, it is important not to fall into the misconception that the low level of liquidity in many of these markets and the unusually strong role of speculators drains all meaning from the price movements. Even if the degree of speculation in these markets is unhealthily high, this does not mean that the speculators are misreading the significance of developments. Market movements have seemed to respond fairly closely to the relevant political and economic developments, even if one could argue with the magnitude of the swings at times. News that would make a reasonable observer more nervous about the situation of a particular country or about the certainty of eurozone solidarity has been pushing market interest rates up and more positive news has been bringing rates down. Therefore, it would be a mistake to ignore these market signals altogether.

Further, we do not know how much of the action is speculative. For one thing, it is quite hard to draw the line between speculators and investors. The working definition of speculator often appears to be a market participant who disagrees with the policymaker who is speaking. In addition, the actual data about who is buying and selling is not available to the public, and may be difficult even for regulators to obtain in a timely manner. My intuition, based on my previous two decades in the investment banking business and my observations of market participants in the Euro Crisis, is that the core underlying market movements are not primarily driven by speculators. At an absolute minimum, “real money” investors (insurers, pension funds, mutual funds and their European equivalents) have been selling off their debt holdings in the weaker eurozone countries out of justifiable fear and uncertainty, which drives up interest rates by substantially reducing the investor base willing to own these securities.

One thing is clear. Normal market functioning, and sustained lower interest rates for the troubled eurozone bond markets, will not be restored until “real money” investors can be comfortable again making long-term commitments to these markets.

## Appendix (Illustration of Market Pricing Mechanisms)

**Market terms for Italy (approximate)**

| | |
|---|---|
| Original principal amount | 100 |
| Original interest rate | 6.0% |
| Discount rate | 6.0% |

**Valuation in 1 year**

| | Probability | Value | Weighted Value |
|---|---|---|---|
| Scenario A | 60% | 123 | 74 |
| Scenario B | 10% | 88 | 9 |
| Scenario C | 30% | 60 | 18 |
| Total | | | 101 |

| | | Year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Sum |
| **Assumed Current Market Terms** | | | | | | | | | | | | |
| Interest rate | 6.0% | | | | | | | | | | | |
| Interest payments | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| Principal payment | | | | | | | | | | | 100 | |
| Total cash flows | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 106 | |
| Discount rate | 6.0% | | | | | | | | | | | |
| Discount factor | | 94% | 89% | 84% | 79% | 75% | 70% | 67% | 63% | 59% | 56% | |
| Value in today's euros | | 6 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 59 | 100 |
| **Scenario A, valued 1 year from now** | | | | | | | | | | | | |
| Interest rate | 6.0% | | | | | | | | | | | |
| Interest payments | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| Principal payment | | | | | | | | | | | 100 | |
| Total cash flows | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 106 | |
| Discount rate | 3.0% | | | | | | | | | | | |
| Discount factor | | | 97% | 94% | 92% | 89% | 86% | 84% | 81% | 79% | 77% | |
| Value in today's euros | | - | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 81 | 123 |
| **Scenario B, valued 1 year from now** | | | | | | | | | | | | |
| Interest rate | 6.0% | | | | | | | | | | | |
| Interest payments | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| Principal payment | | | | | | | | | | | 100 | |
| Total cash flows | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 106 | |
| Discount rate | 8.0% | | | | | | | | | | | |
| Discount factor | | | 93% | 86% | 79% | 74% | 68% | 63% | 58% | 54% | 50% | |
| Value in today's euros | | - | 6 | 5 | 5 | 4 | 4 | 4 | 4 | 3 | 53 | 88 |
| **Scenario C, valued 1 year from now** | | | | | | | | | | | | |
| Restructured principal amount | 70 | | | | | | | | | | | |
| Restructured Interest rate | 4.0% | | | | | | | | | | | |
| Interest payments | | | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | |
| Principal payment | | | | | | | | | | | 70 | |
| Total cash flows | | | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 72.8 | |
| Discount rate | 6.0% | | | | | | | | | | | |
| Discount factor | | | 94% | 89% | 84% | 79% | 75% | 70% | 67% | 63% | 59% | |
| Value in today's euros | | - | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 43 | 60 |