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# Disappearing government bond spreads in the eurozone – Back to normal?

Paul De Grauwe and Yuemei Ji

No. 396 / May 2014

## Abstract

Since the announcement of the Outright Monetary Transactions (OMT) programme by Mario Draghi, President of the ECB, in 2012, the government bond spreads began a strong decline. This paper finds that most of this decline is due to the positive market sentiments that the OMT programme has triggered and is not related to underlying fundamentals, such as the debt-to-GDP ratios or the external debt position that have continued to increase in most countries. The authors even argue that the market's euphoria may have gone too far in taking into account the same market fundamentals. They conclude with some thoughts about the future governance of the OMT programme.



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# Disappearing government bond spreads in the eurozone – Back to normal?


## Paul De Grauwe and Yuemei Ji*



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## 1. Introduction

Since the announcement of the Outright Monetary Transactions (OMT) programme by ECB President Mario Draghi in 2012, the government bond spreads started a strong decline, as illustrated in Figure 1. By taking away the intense existential fear that the collapse of the eurozone was imminent, the ECB's lender-of-last-resort commitment pacified government bond markets. This pacification was the start of a strong decline in the spreads of the eurozone countries, which has continued until today.

The issue that arises here is how much of this decline is due to the OMT announcement and how much is the result of developments in the fundamentals – government debt, external debt, competitiveness, growth, etc. – that influence the spreads. This question is important. If the decline of the spreads is primarily the result of improved fundamentals, then the need for the OMT programme can be questioned. More generally, if the spreads are mainly driven by fundamentals, the ECB has no business in trying to influence these spreads as these can only decline with an improvement in the fundamentals.

This is also the position taken by the German Constitutional Court. The latter declared OMT to be illegal and referred the case to the Court of Justice of the European Union with the demand that conditions be imposed on the OMT programme that would render it ineffective and useless. The main argument in the German judges' ruling is that the spreads reflect underlying economic fundamentals. Attempts by the ECB to reduce these spreads are attempts to counter the view of market participants. In so doing, the ECB is in fact pursuing economic policy – an activity that falls outside its mandate.

Implicit in this argument is the view that markets are efficient (see De Grauwe (2014), Winkler (2014) and Gerner-Beuerle et al. (2014)). The surging spreads observed from 2010 to the middle of 2012 were the result of deteriorating fundamentals (e.g. domestic government debt, external debt, competitiveness, etc.). Thus, the market was just a messenger of bad news. Its judgment should then be respected, also by the ECB. The implication of the efficient market theory is that the only way these spreads can go down is by improving the fundamentals, mainly via austerity programmes aimed at reducing government budget deficits and debts. With its OMT programme, the ECB is in fact reducing the need to improve these fundamentals.

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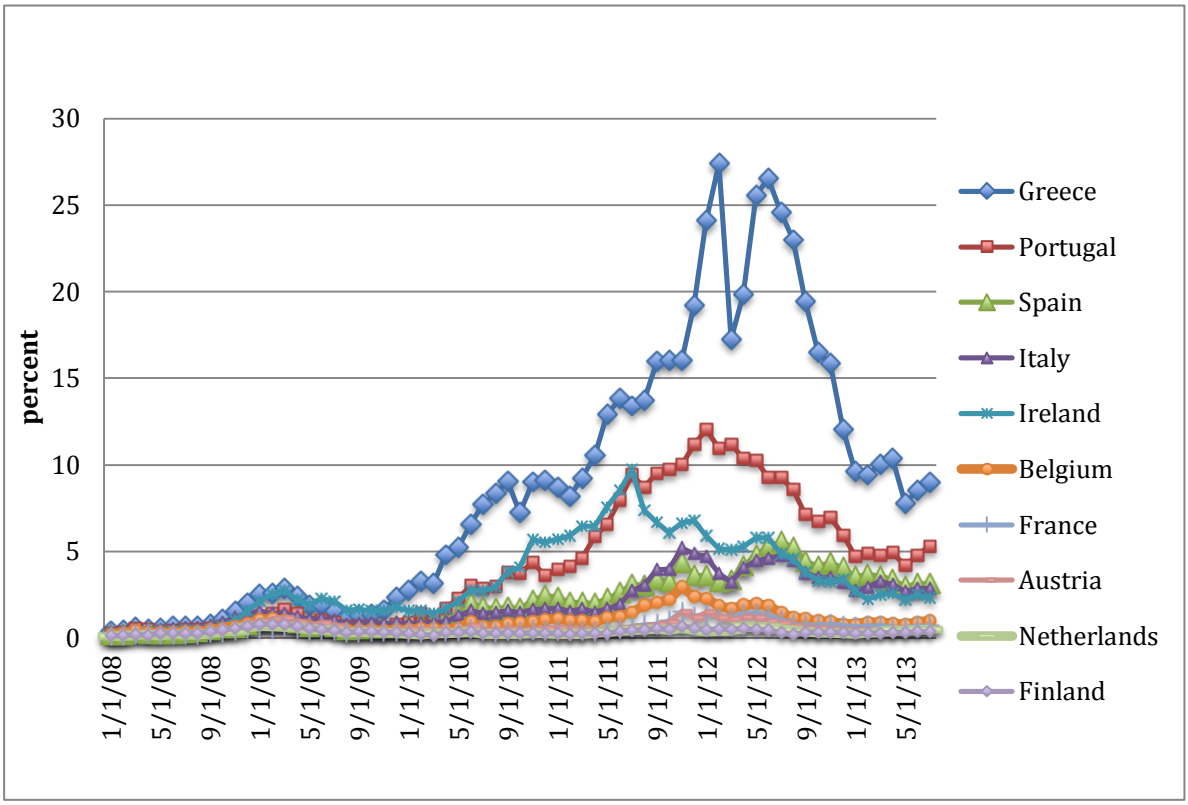
*Figure 1. Spreads on 10-year government bond rates in selected eurozone countries*




*Source*: Datastream.

Another theory, while accepting that fundamentals matter, recognises that collective movements of fear and panic can have dramatic effects on spreads. These movements can drive the spreads away from underlying fundamentals, very much in the way that stock market prices can be gripped by a bubble, pushing them far away from underlying fundamentals (Corsetti & Dedola (2011), De Grauwe (2011) and Gros (2011)). The implication of that theory is that while fundamentals cannot be ignored, there is a special role for the central bank to provide liquidity in times of market panic.

This OMT decision of the ECB provides us with an interesting experiment to test these two theories about how spreads are formed. In De Grauwe & Ji (2013a) such a test was performed. The data sample, however, ended just before the OMT announcement. More data have now become available, allowing us to also test for the impact of OMT, which we do in the next section.

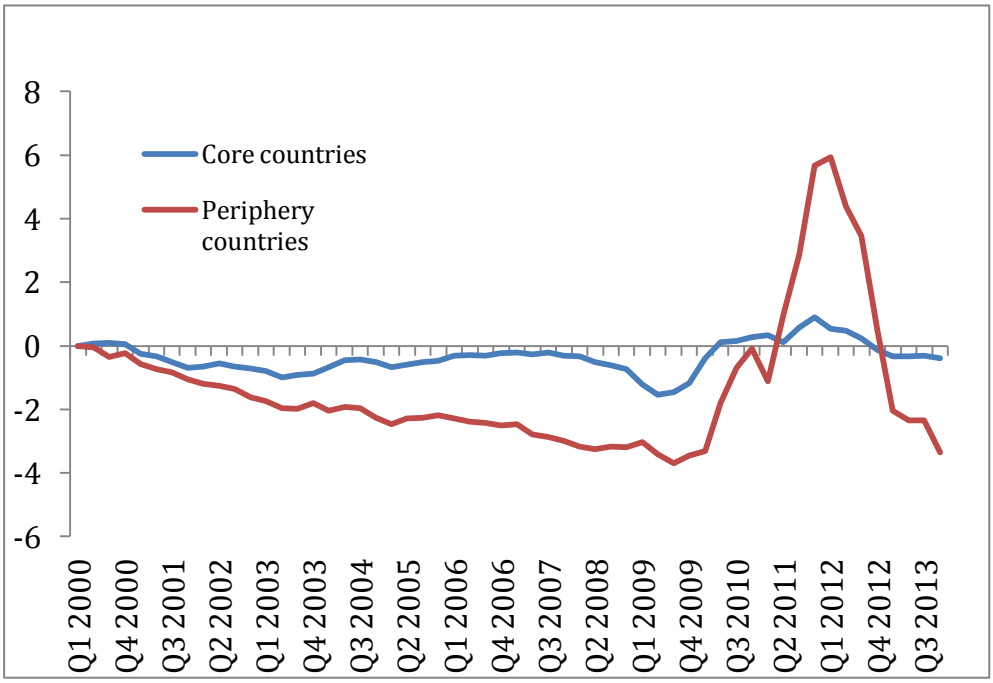
## 2. Testing two theories of the spreads

The spreads in the government bond rates (10-year) have been subjected to wild fluctuations since the start of the financial crisis in 2008. While prior to the crisis these spreads had been close to zero, they started to increase spectacularly from 2010 on. In De Grauwe & Ji (2013a) we showed that this spectacular increase can be associated with deteriorating fundamentals only in a limited extent, and that most of the surge is due to strongly negative market sentiments. Since 2012 Q3, the spreads have started to decline spectacularly (see Figure 1). Our econometric analysis aims at determining how much of the decline is due to improving

fundamentals and how much should be attributed to positive market sentiments triggered by the announcement of OMT in the third quarter of 2012.

We specify an econometric model of the spreads, relying on the existing literature to do so.[1] The most common fundamental variables found in this literature are variables measuring the sustainability of government debt. We will use the debt-to-GDP ratio as a measure of sustainability. In addition, we use the current account position, the real effective exchange rate and the rate of economic growth as fundamental variables affecting the spreads. We then add to this fundamental model of the spreads an index of market sentiments. We obtain the latter by introducing time dummies in the model that are independent from the fundamental variables. We show the detail of this model (including the estimation results) in the Appendix. Here we discuss the results that relate to the relative importance of the fundamentals and the market sentiment index.

*Figure 2. Time components of spreads in the eurozone (2000 Q1-2013 Q4)*




*Source*: Calculations based on regression equation (for details, see the Appendix).

We plot the time dummies obtained from the econometric model in Figure 2. We have split the countries into two groups: the core and the periphery countries of the eurozone. We find very strong time dummies for the countries in the latter group, which suggests that "departures" occurred in the spreads especially in the periphery. That is, during 2010-12, these countries experienced a marked increase in their spreads that cannot be accounted for by fundamental developments, in particular by the changes in the debt-to-GDP ratios.

[1] See Attinasi et al. (2009), Arghyrou & Kontonikas (2010), Schuknecht et al. (2010), Caceres et al. (2010), Aizenman & Hutchinson (2012) and Beirne & Fratzscher (2012). There is of course a vast literature on the spreads in the government bond markets in general. See for example the classic Eaton, Gersovitz & Stiglitz (1986) and Eichengreen & Mody (2000). Much of this literature has been influenced by the debt problems of emerging economies. See, for example, Edwards (1984), and Min (1999).

Similarly, since 2012 (Q3), the spreads have further declined significantly. This decline cannot be associated with changes in fundamentals but rather are again due to changing market sentiments, this time in a positive direction. This change coincides exactly with the announcement of OMT by the ECB.

Given the fact that the time dummies reached negative territory in 2013, one may raise the question of whether the market has become too optimistic about the periphery, in a similar way as it was prior to the start of the crisis. During that period the time dummies were negative, suggesting that according to the fundamentals the spreads of the periphery countries should have been higher. Optimism (euphoria), however, prevailed then and prevented the markets from seeing the risks. Our results suggest that the same phenomenon may have been happening since 2013.

These observations suggest that since 2010 the markets were first gripped by negative sentiments and tended to exaggerate the default risks of individual countries, i.e. they pushed the spreads way above the fundamental risks. Since the announcement of OMT, the reverse has happened: the spreads went down spectacularly, mostly driven by positive market sentiments unrelated to the improvements (if any) in the fundamentals.

In order to find out the relative importance of the fundamental variables and the market sentiments (as measured by the time dummies) in influencing the spreads, we computed the quantitative importance of these two factors in explaining the predicted spreads in the model. We analyse two periods, the first of which runs from 2008 Q1 to 2012 Q2. This is the period of the build-up of the sovereign debt crisis. The second period goes from 2012 Q3 to 2013 Q4, just following the OMT announcement that triggered the decline in the spreads. We show the results in Figures 3 (first period) and 4 (second period).

Concentrating on Figure 3, we find that the largest part of the surge in the spreads during 2008-12 is due to negative market sentiments that were unrelated to the fundamentals (the time dummies). Nevertheless, the fundamentals play some role in explaining the surge in the spreads in the case of Greece and to a lesser extent in Portugal.

Things are very different during the second, post-OMT period (Figure 4). We find that the sharp decline of the spreads since OMT is totally dissociated from changes in fundamentals. The latter play no role at all in explaining this decline in the spreads. This result strongly suggests that the ECB's OMT announcement was quite effective in turning around market sentiments. These became very positive and corrected for the excessive pessimism that existed before the announcement. These results also suggest that the view that countries can be pushed into bad equilibria in a self-fulfilling way is the right one. This view provides the major justification for a role of the central bank as lender of last resort. It is particularly worrisome that this role is being questioned by the German Constitutional Court's ruling of February 2014, and that this ruling is based on a theory that is rejected by the data.

*Figure 3. Contribution of fundamentals and time dummies in predicted change in spreads (2008Q1-2012Q2)*

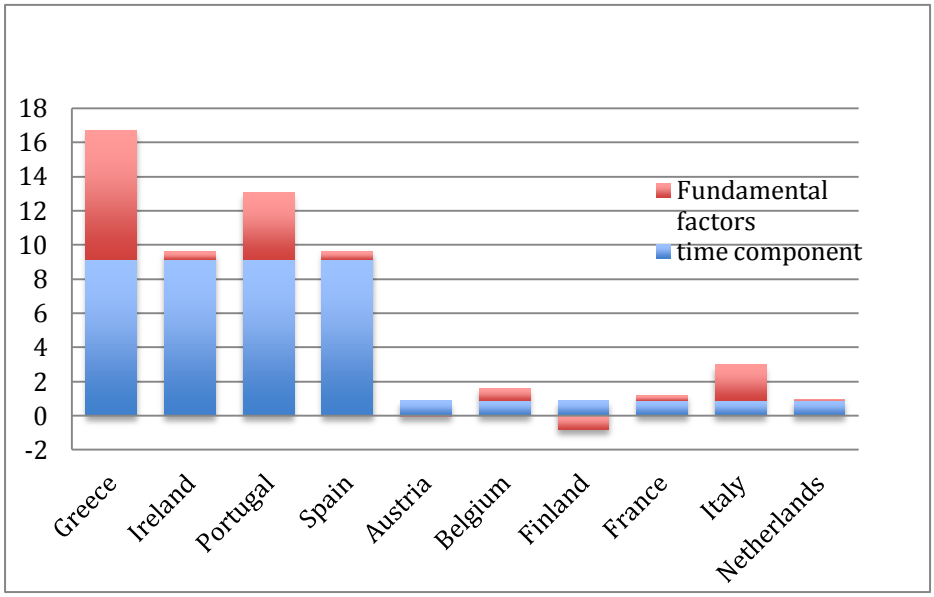
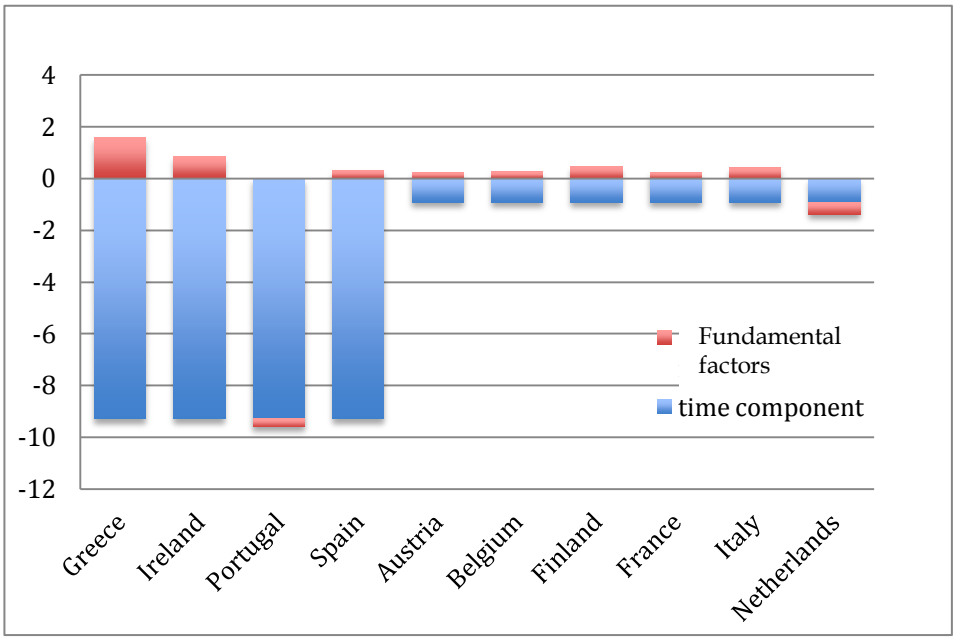



*Figure 4. Contribution of fundamentals and time dummies in predicted change in spreads (2012Q1-2013Q4)*




*Source:* Calculations based on regression equation (1).

Note that our results in spirit are consistent with the well-known findings of Robert Shiller, who detected that the large variability of stock prices cannot be accounted for by the variability of dividends (Shiller, 1981).

## 3. Completing the monetary union with political union

The institutional set-up that has been created in the eurozone is not sustainable and will have to be completed with steps towards a fiscal union. The latter implies a degree of political union that goes much farther than what has been achieved so far. Let us develop these points further.

The present institutional set-up of the eurozone is characterised by the fact that a number of bureaucratic institutions have acquired significant responsibilities without political accountability. Thus, there has been a transfer of sovereignty without a concomitant democratic legitimacy.

The European Central Bank's power has increased significantly as a result of the sovereign debt crisis. With the announcement of the OMT programme and given the success of this programme it has become clear (at least outside Germany) that the ECB is the ultimate guarantor of sovereign debt in the eurozone. In this sense the ECB has become a central bank like the Federal Reserve and the Bank of England. There is one important difference, however. In the US and the UK, the government exercises control over the central bank, i.e. in times of crisis it is the government that will force the central bank to provide liquidity. When the sovereign in these countries is threatened, it will prevail over the central bank. This is not the case in the eurozone. In the latter, the governments depend on the goodwill of the ECB to provide liquidity. They have no power over the ECB and cannot force that institution, even in times of crisis, to provide liquidity. Thus, in the eurozone today, there is a primacy of the central bank over the sovereigns.

This is a model that cannot be sustained in democratic societies. The ECB consists of unelected officials, while governments are populated by elected officials. It is inconceivable that these governments will accept to be pushed into insolvency while unelected officials in Frankfurt have the power to prevent this but refuse to use this power. When subjected to a true test, such a model of the governance of the eurozone will collapse and rightly so.

Thus, we arrive at the following conundrum. The role of the ECB as a lender of last resort is essential to keep the eurozone afloat. Yet, at the same time, the present governance of this crucial lender-of-last-resort function is unsustainable because its use depends on the goodwill of the ECB, thereby making the fate of democratically legitimate governments dependent on the judgment of unelected officials. In order to sustain this role of the central bank as a lender of last resort, it has to be made subordinate to the political power of elected officials, as is the case in modern democracies such as the US, Sweden, the UK, etc. This can only be achieved by creating a eurozone government that is backed by a European Parliament and that has primacy over the central bank. Until then, the eurozone will remain a fragile and vulnerable institution, which will be reflected in volatility in the government bond markets.

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## Appendix: The econometric model

In this appendix we describe the econometric model used to separate the effects of fundamental variables from the effects of market sentiments. The fundamental variables and their expected effects on the spreads are described below:

- The *government debt-to-GDP ratio:* when this fundamental increases, the burden of the debt service increases, leading to an increasing probability of default. This in turn leads to an increase in the spread, which is a risk premium that investors demand to compensate them for the increased default risk.[2]
- The accumulated *current account* measures the net foreign debt of the country as a whole (private and official residents). It is computed as the current account accumulated since 2000 Q1 divided by its GDP level. If the increase in net foreign debt arises from the private sector's overspending, it will lead to default risk of the private sector. However, the government is likely to be affected because such defaults lead to a negative effect on economic activity, inducing a decline in government revenues and an increase in government budget deficits. If the increase in net foreign indebtedness arises from government overspending, it directly increases the government's debt service, and thus the default risk.
- The *real effective exchange rate* as a measure of competitiveness can be considered as an early warning variable indicating that a country that experiences a real appreciation will run into problems of competitiveness, which in turn will lead to future current account deficits, and future debt problems. Investors may then demand an additional risk premium.
- *Economic growth* affects the ease with which a government is capable of servicing its debt. The lower the growth rate, the more difficult it is to raise tax revenues. As a result, a decline of economic growth will increase the incentive of the government to default, raising the default risk and the spread.

We specify the econometric equation in a non-linear form in the debt ratio. The reason comes from the fact that every decision to default is a discontinuous one, and leads to high potential losses. Thus, as the debt-to-GDP-ratio increases, investors realise that they are coming closer to the default decision, making them more sensitive to a given increase in the debt-to-GDP ratio (Giavazzi & Pagano, 1996).

$$I_{it} = \alpha + z * CA_{it} + \gamma_1 * Debt_{it} + \mu * REE_{it} + \delta * Growth_{it} + \gamma_2 * (Debt_{it})^2 + \alpha_i + \beta_t + \varepsilon_{it} \quad (1)$$

where:

- $I_{it}$ is the interest rate spread of country i in period t.
- $CA_{it}$ is the accumulated current account-to-GDP ratio of country i in period t.
- $Debt_{it}$ is either the government debt-to-GDP ratio or the fiscal space of country i in period t.
- $REE_{it}$ is the real effective exchange rate.

[2] We also experimented with the government deficit-to-GDP ratio. But this variable does not have a significant effect in any of the regressions we estimated.

- $Growth_{it}$ is the GDP growth rate.
- $\alpha$ is the constant term.
- $\alpha_i$ is country i's fixed effect. This variable measures the idiosyncrasies of a country that affect its spread and that are not time dependent. For example, the efficiency of the tax system, the quality of the governance, and many other variables that are country-specific are captured by the fixed effect.
- $\beta_t$ is the time dummy variable. This measures the time effects that are unrelated to the fundamentals of the model or (by definition) to the fixed effects. If significant, it shows that the spreads move in time unrelated to the fundamental forces driving the yields. We interpret this time dummy as reflecting market sentiments that exist at a point in time.

The results of estimating this equation are shown in Table A1. We observe that the debt-to-GDP ratio has the expected sign and is significant. The same can be said about growth. The accumulated current account and the real effective exchange rate have the expected sign but are not significant. The time dummies have a jointly significant effect on the spreads.

*Table A 1. Estimation results equation (1)*

| | |
|---|---|
| Debt/GDP ratio (%) | -0.1202 *** (0.0304) |
| Debt/GDP ratio squared | 0.0009 *** (0.0002) |
| Accumulated current account/GDP ratio (%) | -0.0048 (0.0034) |
| Real effective exchange rate | 0.0554 (0.0332) |
| Growth rate (%) | -0.1851 ** (0.0659) |
| Country fixed effects | Controlled |
| Time fixed effects (quarterly) | Controlled |
| Number of observations | 560 |
| Number of countries | 10 |
| R-squared | 0.8601 |

*Notes*: Cluster at country level and robust standard error is shown in brackets.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Sample period: (2000Q1-2013Q4).