



Government bond risk premiums in the EU revisited: The impact of the financial crisis

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ABSTRACT

This article looks at US\$ and DM/Euro-denominated government bond spreads relative to US and German benchmark bonds before and after the start of the current financial crisis. The study finds, first, that bond yield spreads during the crisis can largely be explained on the basis of the same variables as before the crisis. Second, markets penalise fiscal imbalances much more strongly after the Lehman default in September 2008 than before. There is also a significant increase in the spread on non-benchmark bonds due to higher general risk aversion, and German bonds obtained a safe-haven investment status similar to that of the US which they did not have before the crisis. These findings underpin the need for achieving sound fiscal positions in good times and complying with the Stability and Growth Pact.

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1. Introduction

The potential effect of credit risk on government bond yields has received heightened attention when yield spreads started rising significantly as the global financial crisis intensified in September 2008.¹ This article addresses four important questions related to this experience: first, are market valuations of government debt during a crisis still in line with “economic rationality”? Second, do the larger spreads observed during the crisis result from larger fiscal deficits and debt or do they also reflect a regime shift in the market pricing of government credit risk? Third, to what extent are the larger spreads during the crisis a result of a general increase in risk aversion? Fourth, what are the magnitudes of market penalisation of fiscal imbalances in crisis compared to more “normal” times?

The first question is motivated by the view, common in the public debate, that the financial crisis revealed that financial markets do not work according to “economic rationality”. This view would lose some of its justification if one could show that, even in times of crises, markets consistently price government bonds on the basis of the same set of macroeconomic and financial variables as before.² The second question is motivated by the experience that, prior to the debt crisis of New York City in 1975,

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¹ Earlier literature studying European government bond yield spreads, generally finds that these spreads are smaller than comparable spreads on bonds issued by state governments in the US, and that the effect of fiscal variables on these spreads is significant but small. A recent exception is Mody (2009) who finds no effect of fiscal variables on bond yield spreads in Europe. For a recent review of the relevant literature see Haugh et al. (2009).

² Of course, this does not exclude some other forms of irrationality, as changes in coefficients could be seen as a sign of incorrect pricing behaviour.

municipal bond markets in the US did not pay much attention to public debts and deficits. After that, however, at least for some time, these markets charged risk premiums on bonds issued by cities and states with large public debts.³ The third and the fourth questions focus on the role of fiscal performance versus investors' preferences in the pricing of sovereign risk.

To answer these questions, we start from the results of our recent empirical study of government bond yield spreads (Schuknecht et al., 2009). We extend the data base used in that study for the European central governments until May 2009 and distinguish between two phases of the current crisis; a period of market turmoil starting in August 2007 and lasting until August 2008, and a period of the acute crisis starting with the collapse of Lehman Brothers in September 2008.

While caution in drawing conclusions is needed given the limited number of observations in the crisis period, the results of our study suggest, first, that bond yield spreads in the crisis up to May 2009 can still largely be explained on the basis of the same set of variables as before the start of the crisis. Second, markets penalise fiscal imbalances much more strongly than before only after the Lehman default in September 2008. This shift in behaviour is responsible for much of the spread increase for EU country government bonds relative to German or US treasury benchmark bonds. Coefficients for deficit differentials are three to four times higher during the post-Lehman crisis period than earlier and for debt differentials they are seven to eight times higher. In addition to fiscal deficits and debt, however, there is also a significant increase in the spread on non-benchmark bonds due to general risk aversion. After the Lehman default, German government bonds, the benchmark in the euro-denominated bond market, assumed a safe-haven investment status similar to US government bonds, which they did not have before.

The first policy implication of the above findings is that market valuation of sovereign risk remains a valid mechanism to discipline fiscal policy in times of financial crisis, reflecting underlying credit risk concerns. The second implication is that, to avoid high borrowing costs, fiscal policies in "good" times should be sounder, creating leeway for crisis times.⁴ For euro area countries in particular, this suggests that achieving budgetary positions close to balance or in surplus, in line with the Stability and Growth Pact, is a necessary (though perhaps not sufficient) condition to safeguard against the high costs of public debt.

2. Methodology and data

This article applies the approach of Schuknecht et al. (2009) and examines the determinants of yield spreads at launch on sovereign bonds denominated in DM/euros and US\$ relative to the benchmark (German and US federal government treasuries, respectively) via panel analysis with time fixed-effects. Below, we set out the main methodological points and data-issues, but the reader is referred to Schuknecht et al. (2009) in this journal for more details on the approach taken and a review of the relevant empirical literature.

In line with standard portfolio theory, our hypothesis is that the yield spread depends on the government's probability of (partial) default on its debt, a liquidity premium, and the investor's risk premium. The ratio of the central government debt to GDP and the ratio of the central government budget surplus to GDP, both measured as differences relative to the benchmark country, are used as determinants of the government's probability of default.⁵ We interact these variables with an EMU dummy to see whether the effects of the fiscal variables changed with the start of EMU. The novel element compared to Schuknecht et al. (2009) is that we also interact the fiscal variables with a "turmoil" dummy, to test whether the influence of the fiscal variables changed when the financial turmoil started in August 2007, and with a "crisis" dummy, for the period after the Lehman default in September 2008.

We approximate the liquidity premium by the size of a debt issue.⁶ As usual in this literature, we capture the impact of general investors' risk aversion on yield spreads by the yield spread between low grade US corporate bonds (BBB) and benchmark US government bonds. Since general risk aversion may also depend on financial market conditions, we also add the short-term money market rate in the reference country as a regressor (see Manganelli and Wolswijk, 2009). We also use a maturity variable counting the years until maturity of each individual bond to account for the fact that bonds of longer maturity typically yield a higher interest rate. This leads to the following estimation-equation:

$$\frac{r_{it} - r_{jt}}{1 + r_{jt}} = \beta_0 + \beta_1' z_{it} + \gamma s_t + \varepsilon_{ijt}. \quad (1)$$

Here, β_0 and γ are scalar parameters and β_1 is a vector of parameters. r_{it} is the yield-at-issue of a security issued by government i at time t and r_{jt} is the yield-at-issue of a security issued by the benchmark government j at the same time. z_{it} is a vector containing the fiscal indicators, the short-term interest rate, and the years to maturity. The variable s_t is the corporate spread, while ε_{ijt} is a stochastic error term.

³ See for instance Hoffland (1977).

⁴ This is also one of the key lessons that Blanchard et al. (2010) draw from the crisis.

⁵ Earlier studies, e.g. Bernoth et al. (2006), usually found a significant effect from deficits and debt on spreads which, however, decreased markedly with the start of EMU. ECB Monthly Bulletins of July and September 2009 (European Central Bank, 2009a,b) have pointed to the importance of both fiscal and liquidity factors in bond spread developments in the euro area during the crisis period. Haugh et al. (2009) argue on the basis of quarterly bond spread data that risk aversion and fiscal fundamentals contributed to spread increases.

⁶ The bid-ask spreads cannot be used as a liquidity-indicator in this study since the yields in this paper are yields at issue, and bid-ask spreads do not exist on the first day of trading.

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