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Market Discipline Under A Politicised Multilateral Fiscal Rule - Lessons from the Stability and Growth Pact Debate

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Market Discipline Under A Politicised Multilateral Fiscal Rule: Lessons from the Stability and Growth Pact Debate

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Abstract

Does a multilateral fiscal rule improve market discipline in a monetary union? This paper studies the impact of political events that systematically undermined the Stability and Growth Pact (SGP) on EMU sovereign default risk for the period 2001 to 2005. For various EMU member countries our findings suggest that credit risk did not increase in the SGP's early years in response to the political undermining of the Pact. Due to the existence of systematic volatility effects we conclude that from its beginning the Pact was not perceived as a credible institution by financial markets. Bond markets have not been the watchdogs the proponents of transparency enhancing fiscal rules frequently claim them to be. Investors did not anticipate any serious consequences arriving from political non-ownership of the Pact and corresponding fiscal leeway on national public finances in the euro zone back then. In this context, policymakers working on a reform of Europe's fiscal framework should abstain from enhancing multilateral fiscal rules lacking political ownership, including the reformed SGP and the new "European Fiscal Compact".

JEL Classification: E62; F55; C22; C58

Key words: fiscal rules, market discipline, sovereign credit risk, GARCH

I. Introduction

Focussing the current discussion about the European sovereign debt crisis, which is by many recognised as a crisis of the euro, it becomes obvious that the united core of Europe, the European Monetary Union (henceforth EMU), was and is often characterised by contradictions. There are countries that are more fiscal sinners than others. There are countries that are now heavily indebted, whereas few have followed the path of fiscal prudence and consolidation. Nowadays there are EMU members, like Greece, Ireland, Italy, Portugal and Spain, that are suffering from the market disciplining process while others do not. Referring to the initial EMU fiscal framework, the Stability and Growth Pact (henceforth SGP, the Pact) and its interrelation with sovereign debt markets, these issues are of concern in this paper.

The SGP was set up to enforce budgetary discipline after the beginning of the third stage of EMU on 1st January 1999, ie after national currencies had been replaced by the euro. In order to implement a behaviour of budgetary discipline a number of rules have been put forward. To play by the rules, however, appeared to be rather

difficult for the member states of the European Union.¹ In this context, particularly larger EMU countries promoted a softening of the SGP. This development, however, constituted the risk of losing reputation because for market participants the SGP became a focal point in forming expectations about the long-term public debt (see eg Faini, 2006 and Bernoth et al., 2006).

For some EMU members the loss of credibility and high debt levels recently (eventually) turned into serious financial trouble. Mario Draghi (November 18th, 2011), the current president of the European Central Bank (ECB), emphasised that its aftermath would for a long time last on the European currency area at all: “Gaining credibility is a long and laborious process. Maintaining it is a permanent challenge. But losing credibility can happen quickly and history shows that regaining it has huge economic and social costs.” Actually made in the context of monetary policy-making, Draghi’s words are an allegory for the loss of credibility resulting from the political undermining of the European fiscal framework. Already in the early years of the SGP, credibility in this framework was seriously undermined by European policymakers.

Academic cognoscenti and policymakers often refer to the poor performance of both the European fiscal framework and the performance of capital markets in their role of preventing sovereigns from unsustainable borrowing. Yet debates about the interrelation of these two institutions are characterised by controversial positions. In this paper we review the drivers of sovereign credit risk in order to reflect these positions and we analyse the interaction of these two institutions in more detail.

We focus on where we see the roots of the current European sovereign debt crisis, dated back roughly 10 years from now. In more detail, we concentrate on the period 2001 to 2005 when the initial SGP was gradually softened. We investigate the effects of destabilising political decisions and statements, made by the European Commission, the European Council and the Economic and Financial Affairs Council (henceforth EcoFin), on the yield spread of government bonds by using an ARMA-GARCH approach. Particularly, we are interested in analysing whether and how capital markets exerted disciplinary pressure on national EMU governments when they were losing reputation owing to the undermining of the SGP, and the effects on bond market uncertainty. We concentrate on the question whether the SGP debate has systematically affected expectations of government bond market participants. If so, this would be a sign for the loss of credibility of the EMU framework at all, which in turn would have the potential to cause serious disturbances on individual countries’ future refinancing operations.

We will show that market participants react sensitively to political events though not necessarily disciplining. 1) We do not find consistent, systematic and sizeable level effects in response to political events of relevant national and supranational

¹Between 2001 and 2008 the European Commission initiated 15 Excessive Deficit Procedures (EDP) in order to urge the particular Member States to follow the rules of the Pact.

institutions. While destabilising decisions by the European Commission tend to increase yield spreads, destabilising decisions by the EcoFin tend to decrease yield spreads. The results indicate, however, that Greek government bond yield spread levels are sensitive to destabilising EcoFin statements, with the expected sign. 2) Owing to the absence of systematic sizeable level effects we conclude that bond markets did not exert market discipline over the period under review. Put differently, the often asserted transparency-enhancing role of the Pact does not improve market discipline. 3) Due to the veto power of the EcoFin, destabilising EcoFin decisions generally reduce market uncertainty. Similar results are found for European Commission decisions. Apparently, destabilising decisions by both politics and the European Commission as the guardian of the Pact calmed bond market participants when international risk perception was comparatively low. 4) Destabilising statements of national politicians potentially reduce market volatility, whereas statements of the European Commission, are found to be less relevant for market expectations, indicating that politics rather the watchdogs determine capital market expectations. Based on these results, we argue that market participants soon adjusted their expectations thereby anticipating a poor future of the SGP, or, to put it another way: already in the early years after setting up the Pact bond markets anticipated its politically induced demise.

The remainder of the paper is organised as follows: we first provide a survey of the literature and a theoretical framework explaining market discipline in a monetary union (section 2). After the description of our data (section 3), we explain the design of the empirical analysis and discuss the results (section 4). The final section concludes and provides policy implications.

II. Literature Review

II.1. Market Discipline: Determinants of Government Bond Yield Spreads

Lane (1993) argues that financial markets should set the conditions for lending thereby urging sovereign borrowers to ensure solvency. With respect to the accumulation of sovereign debt, lenders should claim a higher interest rates or even exclude sovereigns from further lending when borrowers face difficulties in debt servicing. Given that financial market participants prudently assess the risks inherent in lending to governments, the market discipline mechanism should work effectively and decisionmakers in a certain country should be prevented from pursuing ongoing excessive deficits that would eventually end up in a liquidity crisis or even the sovereign's default.²

²In a monetary union a national fiscal crisis does not occur in isolation. National fiscal leeway causes adverse spillover effects on other members of the currency club and might even end up in a systemic crisis. For a discussion of the "Greek Case", for example, see Katsimi and Moutos (2010).

In a monetary union sovereign borrowers should basically face similar restrictions on capital markets since sovereigns that have an own national currency and are free in the choice of monetary policy. EMU history has shown, however, that capital markets apparently turned a blind eye on certain members that have built up huge levels of sovereign debt over time. Thus, with hindsight, one might argue that appropriate incentives for governments to adjust borrowing according to market signals did not emerge.

For market discipline to work effectively, Lane (1993) postulates the fulfilment of four conditions: 1) Open markets, ie lenders do not face captive markets in which they are in some way urged to lend to public authorities.³ 2) The existence of all relevant information about the borrowers financial position.⁴ 3) The adequate response of the sovereign borrower, ie after facing rising interest rates or even the perspective of being excluded from capital markets sovereigns should (more or less rapidly) adjust lending and fiscal policy considerations in order to ensure sustainable public finances. 4) No-bail-out. According to Lane (1993, p. 83) the “Achilles heel of market discipline” is the so-called no-bail-out condition, ie market discipline would not work effectively, if financial market participants can expect that sovereign borrowers in severe financial trouble would be bailed out - a condition that is crucial for a monetary union.⁵

History has shown that market discipline does not necessarily improve fiscal discipline. This insight was already stressed in one of the EMU’s initial contributions about the foundations for the single European currency - the 1989 Delors-Report. “The constraints imposed by market forces might either be too slow and weak or too sudden and disruptive. Hence countries would have to accept that sharing a common market and a single currency area imposed policy constraints.” (Delors Report, 1989, p. 20). Amongst others, the insights about insufficient market discipline on the one hand and too strong market forces on the other hand have led to the implementation of multilateral institutional policy constraints. However, the interaction of specific policy constraints with capital markets is still not as clear as promoted by many. Since fiscal rules and market discipline do not operate in isolation a crucial question still is, whether both in fact reinforce or potentially weaken each other.

The analysis of government bond yield spreads has broadly been addressed by the literature so far. The empirical research predominantly finds evidence that fiscal indicators rather than liquidity considerations determine differentials in government

³The capital adequacy requirements imposed on financial institutions under the Basel Accord can support capital markets “willingness” to lend to public borrowers. See Montgomery (2005) for an analysis of portfolios of Japanese bank balance sheets.

⁴The degree of fiscal transparency as well as the degree of creative accounting can distort capital market perceptions of the true fiscal position of a bond issuing country. See, for example, Bernoth and Wolff (2008) for an analysis of EMU bond yields.

⁵The particular relevance of the prohibition of bail-outs was already discussed in the early years of the EMU. See for example Bovenberg et al. (1991, p. 377).

bond yields. The role of transparency enhancing fiscal rules still lacks attention by scientific research.

General drivers of sovereign credit risk

Alesina et al. (1992) investigate OECD country data for the period 1974 to 1989. They show that, for heavily indebted governments, the differential between public and private bond yields is positively related to the level of outstanding public debt and the growth of debt accumulation.

Based on a study of municipal bond yields of US federal states Bayoumi et al. (1995) conclude that market discipline worked over the period 1981 to 1990. While debt accumulation is related positively to bond yields, also constitutional fiscal controls lead to lower interest expenditures. However, based on their findings, the authors claim that market discipline alone might be insufficient to discipline sovereign borrowers. They suggest a rules-based framework as an additional measure to secure fiscal discipline. In this regard, the authors argue in favour of penalty taxes related to countries' yield spreads, or critical yield levels that might trigger a multilateral surveillance procedure.

Codogno et al. (2003) analyse EMU government bond spreads in the period January 1999 to December 2002. The authors argue that before the euro was introduced in 1999, yield differentials in government bond yields were determined by currency risk, tax treatments, capital controls, liquidity risk, and credit risk. According to the authors, after the elimination of foreign exchange risk in 1999, liquidity factors played only a minor role in explaining yield spreads in the EMU. Rather yield spreads are found to be systematically related to international risk factors, which in turn are found to be linked to debt-to-GDP ratios relative to Germany for certain countries. In addition, international risk is argued to be possibly related to rather unobservable factors such as the reputation of a government and the uncertainty about future fiscal outcomes, particularly future budgetary surpluses.

Lemmen and Goodhart (1999) investigate government bonds and corresponding swap yields. They find that the difference between government bond yields and swap yields (as a measure of credit risk) is positively related to the level of public debt. Balassone et al. (2004) study yield spreads of European government bonds against the German benchmark between 1980 and 2003. They find yield differentials to be positively related to indicators of fiscal position (change in the debt-to-GDP ratio) and credit risk (based on credit ratings). Since the authors analyse bonds issued in national currencies they do not distinguish between currency and credit risk before the EMU was introduced.

In a recent study Barrios et al. (2009) analyse the determinants of weekly and quarterly euro area government bond yields during the financial crisis over the period August 2007 to April 2009. According to their findings, average 10-year government bond yield spreads have risen sharply since the outbreak of the financial crisis. Average yield spreads relative to the German Bund increased from 18 basis points

in the period 1999 to 2007 to 56 basis points in the period 2007 to 2009. The rise in spreads can be explained by an increasing risk perception in financial markets, ie spreads were driven up owing to investors' increased risk awareness during the financial crisis. In addition, domestic fiscal positions (public deficits and debt levels) and liquidity (bid-ask spreads relative to the German benchmark) are found to have a statistically significant influence on the yield spreads under investigation.

Government bond spreads of new EU countries relative to an average euro area yield are analysed by Alexopoulou et al. (2009). For the period 2001 to 2008 their findings suggest that economic fundamentals including the national fiscal positions and external (im)balances are the main long-run determinants of government bond spreads of these countries relative to the euro area average.

De Grauwe and Yuemei (2012) argue that financial markets have systematically underpriced the risk inherent in certain EMU government bonds in the period 2001 to 2008. The authors investigate EMU government bond spreads versus Germany. They point out that at the beginning of the European sovereign debt crisis financial markets suddenly overestimated credit risk inherent in bonds issued by the so-called PIGS countries⁶. During the period 2010 to 2011 credit risk was disconnected from underlying growth in debt-to-GDP ratios and overall public debt levels. The authors thus claim that financial markets systematically mispriced euro zone sovereign debt, which has, in consequence, distorted the incentives of policy-makers and caused various "bad" economic equilibria.

Market Discipline and Fiscal Rules

Afonso and Strauch (2004) provide an assessment of the credibility of European fiscal institutions by analysing the response of interest rate swap spreads⁷ to European fiscal events for the year 2002. The authors show that market participants have been perceptive to the political debates concerning the implementation of the SGP. According to their results, market perception changed in the course of the year 2002, causing the authors to conclude that the confidence in the fiscal framework has been affected negatively by political events, ie credibility decreased accordingly. Overall, however, Afonso and Strauch do not find a sizeable systematic reaction of credit risk on their political events at hand.

For the period 1999 to 2006 the spread of 10-year EMU government bond yields relative to the German benchmark is analysed by Manganelli and Wolswijk (2007). The authors deal with the question whether fiscal rules and financial integration reduce or advance market discipline. It is found that government bond spreads are largely driven by short-term interest rates and credit ratings. In addition the authors find that financial integration improves market discipline by due to improved market efficiency. However, though not accounted for in their empirical analysis,

⁶Portugal, Italy, Greece and Spain

⁷Interest rate swap spreads serve as a proxy for the default risk premium inherent in government bond markets.

it is argued that fiscal rules potentially reinforce disciplinary market forces. Particularly, it is pointed out that fiscal rules might provide guidance to financial markets and the an increased awareness about adverse fiscal policy events together with increased transparency about national fiscal data improves market discipline. In this context, the SGP is argued to offer a “common language” in order to guide market participants. Based on their results, the authors conclude that market discipline was evident over the period under study, but that national governments would need to achieve greater “fiscal sustainability” in order to achieve a closer substitutability of EMU government bonds.

Heppke-Falk and Huefner (2004) analyse swap spreads for the period 1994 to 2004. For Germany and France they find evidence that expected budgetary deficits can explain swap spreads. The authors also find that market discipline was stronger after the establishment of EMU. This finding is argued to be rooted in the loss of monetary policy, and thus the possibility to monetise public debt thereby attracting an increasing awareness of capital markets. In addition, the authors show the existence of stronger market discipline after EMU as a result of the transparency-enhancing role of the SGP. In turn, according to the authors, this reasoning justifies the establishment of this intergovernmental pact. Nevertheless, the authors question whether the risk premium priced into government bonds is adequate in order to prevent countries from accumulating excessive debt levels.

Bernoth et al. (2006) provide an analysis of European government bond issue yield differentials for the period 1993 to 2005. They show that, before and after the establishment of the EMU, yields spreads can be explained by the countries’ debt position. According to their results, capital markets attention shifted from sovereign debt and fiscal deficits to debt-service ratios.⁸ A trend that, according to the authors, might be a result of the politicised debates over the EMU’s fiscal framework. Nevertheless, based on their findings Bernoth et al. conclude that, in the period under review, capital markets did not anticipate that countries with fiscal imbalances would be bailed out by solvent EMU members or the ECB.

Based on a survey dealing with the capital markets’ perspective of sovereign credit risk, ie based on the analysis of the perception of financial market actors, Brandner et al. (2007) conclude that debt levels as well as current and future budget deficits are the most relevant contributors inherent in an assessment of a governments credits risk. Interestingly, the majority of market participants quoted to view the no-bail-out clause in the EU treaty as credible.

Schuknecht et al. (2009) focus on the in the development of risk premiums paid by central and sub-national governments after the introduction of the euro in 1999. By analysing bond issues over the period 1991 to 2005 the authors find indicators of fiscal performance to have explanatory power with respect to sovereign risk

⁸Following the methodology of Bernoth et al. (2006) the debt-service ratio is the difference of debt service payments to total revenue in the current fiscal year between the issuer country and a benchmark country (expressed in percent).

premiums. Regarding risk premiums paid for sub-national debt it is found that German federal states have lost its low priced position after EMU. Schuknecht et al. argue that this phenomenon can be explained by a higher degree of capital market integration which led financial markets to abandon the belief that German federal states would be bailed out by the central government. Spanish provinces, on the other hand, did not have a pre-EMU benefit at all. The authors conclude that these findings provide evidence in favour of the no-bail-out provision in the EU legislation.

In an analysis of government bond spreads relative to the German benchmark von Hagen et al. (2011) argue that after the breakdown of Lehman Brothers in September 2008 sovereign credit risk still was a function of certain macroeconomic and financial data (as before the crisis). However, according to the authors elasticities for differentials in government deficits became three to four times larger compared to pre-crisis values. Von Hagen et al. conclude that these results point to the necessity for governments to comply with the SGP framework.

Goldbach and Fahrholz (2011) analyse whether political events that undermine the credibility of the SGP affect the creditworthiness of the EMU's common default risk. For the period 2001 to 2005 they find that political rhetoric as well as political action systematically influence financial investors' expectations, leading to systematic volatility effects on the dependent variable time series (interest rate swap spreads). However, based on their results the authors conclude that the debate about the softening of the SGP did not have any "bearing" on the level of EMU common default risk.

To summarise: most of the literature refers to current and future fiscal indicators and their interrelation with yields and interest rates of government bonds. International risk perception which is based on fiscal indicators and political factors plays an important role in explaining sovereign credit risk. Various authors question the power of market discipline. Some argue fiscal rules would improve transparency and thus sanctioning by capital markets. Others argue that credibility by market participants in the SGP was weak and that the size of yield spreads was insufficient to exert disciplinary pressure on national fiscal policies. As regards EMU government bonds in particular, interestingly and contrary to intuition, various authors conclude that the no-bail-out clause was perceived as credible by financial markets before the outbreak of the EMU sovereign debt crisis.

II.2. Market Discipline in a Monetary Union - A Theoretical Framework

The following theoretical framework is mainly based on the fourth condition, ie the probability for a country in financial trouble to be bailed out by the rest of the countries of a monetary union.

Suppose a country i which is a member of a monetary union. Country i 's policy-

makers can choose between a tight fiscal policy T_i or a loose fiscal policy L_i . A tight fiscal policy would correspond to the rules of the SGP, ie a low fiscal deficit or a budgetary surplus. On the contrary, a loose fiscal policy would imply an excessive deficit, eg a budgetary deficit ratio which exceeds the 3 per cent of GDP reference value, or exceeding a certain limit of accumulated public debt.

Fiscal policy decisions are taken simultaneously across all countries of the monetary union. At a certain level of accumulated debt the fiscal position of a single country is perceived by financial markets to be unsustainable. In this situation the default of one country might threaten the stability of the overall monetary union.⁹

Policy-makers take into account their expected utility EU_i that depends 1) on the utility resulting from a certain deficit level u_i and 2) the utility loss S_i resulting from a sanction that might be imposed to a country running a loose fiscal policy. In this model the sanction S_i is induced by capital markets. Capital markets anticipate a potential threat for a single member or even the overall monetary union. Creditors thus claim higher risk premia from the very country in financial trouble and, if credit risk spillovers occur, from other participants of the currency area. However, as long as capital markets believe that a sovereign borrower will be bailed out in the case of liquidity problems or even in the case of bankruptcy, creditors do not necessarily claim higher risk premia from a single sovereign debtor.

Regarding the choice of fiscal policies, for each country the probability p_i of being sanctioned by capital markets not only depends on the behaviour of national policymakers, but also on the behaviour of policymakers in other countries of the monetary union. National policymakers maximise their expected utility EU_i by applying a certain fiscal policy F_i in their country:

$$EU_i = u_i - p_i (F_i, F_{\neq i}) S_i, \quad (1)$$

where

$$u_i = \begin{cases} u_i & \text{if } F_i = T_i \\ \bar{u}_i & \text{if } F_i = L_i . \end{cases} \quad (2)$$

In order to capture the political economy beyond the choice of fiscal policy, it is

⁹Threats that would arise from undisciplined budgetary policies are: 1) The loss of price stability. A monetary bail-out would compromise price stability by inducing temporary inflationary pressures. The loss of central bank reputation then hampers an effective monetary policy. The independence of the European Central Bank aims for taking the pressure from central banks to finance budgetary deficits. 2) Bail-outs of excessively indebted member countries by solvent members of the monetary union. This is argued to cause higher risk premia on solvent countries' debt issuances and burdens on solvent members taxpayers. Additional fears can be attributed to adverse shocks to the overall EU/EMU economy, potential crowding-out of private debtors, tax distortions and distortions of intra-EU/EMU capital and resource allocation (Bovenberg et al., 1991, Eichengreen et al., 1998, and more general Schuknecht, 2004).

assumed that $\bar{u}_i > u_i$. This assumption is based on the insight that, due to political motivations, policymakers generally do not take into account the medium-term consequences of fiscal leeway, ie ruling policymakers are rather time-myopic.¹⁰

The probability p_i of being sanctioned accounts for the capital markets' response to national fiscal policy in country i and capital markets' anticipation of a bail-out by other members of the currency area. A potential bail-out in turn depends on the choice of other countries' fiscal policy.

$$p_i = \begin{cases} 0 & \text{if } F_i = T_i \wedge F_{\neq i} = T_{\neq i} \\ \bar{p}_i & \text{if } F_i = L_i \wedge F_{\neq i} = T_{\neq i} \\ \hat{p}_i & \text{if } F_i = T_i \wedge F_{\neq i} = L_{\neq i} \\ \underline{p}_i & \text{if } F_i = L_i \wedge F_{\neq i} = L_{\neq i} \end{cases} \quad (3)$$

with $1 > \underline{p}_i > \bar{p}_i > 0$ and $1 > \underline{p}_i > \hat{p}_i > 0$.

The probability of being sanctioned by capital markets is 0 when country i and all other countries of the monetary union stick to the rules, ie as long as $F_i = T_i$ and $F_{\neq i} = T_{\neq i}$ (*ceteris paribus*) no additional risk premia will be charged. In this case, country i 's reputation as well as the reputation of the overall currency area will not be affected negatively. If country i runs a loose fiscal policy $F_i = L_i$, p_i is larger than 0. In this case p_i does not only depend on country i 's own choice. It is also a function of capital markets' expectations whether country i is likely to be bailed out by other members.

Beyond political considerations, from an economics perspective p_i is an implicit function of the fiscal policy prevailing in other member countries at the same time. Loose fiscal policies in other countries of the monetary union would make sanctions arising from capital markets more likely. This holds particularly because capital markets would anticipate the deterioration of financial resources of the public sector, ie the (leveraged) capacity to bail out, in other countries of the currency area. In addition, the probability of being sanctioned p_i is larger than 0 if country i itself runs a tight fiscal policy $F_i = T_i$, but is expected to bail out other members of the currency union that are in financial trouble. In this case, depending on the fiscal capacity of country i , lenders will claim higher risk premia inherent in higher interest rates paid by i .

It is assumed that for country i the probability p_i of being sanctioned by capital markets is the higher, the more other countries of the currency area run loose fiscal policies. This applies because a decreasing number of financially solid countries would have to bail out an increasing number of countries in financial trouble. Put differently, a fund of decreasing financial resources would have to bail out a rising

¹⁰See Pina and Venes (2011) for evidence that policymakers' underlying opportunistic political considerations (particularly prior to elections) affect budgetary forecasts. See eg Freytag and Paldam (2012) on myopia of politicians.

amount of outstanding debt. Consequently, due to national economic budgetary constraints as well as concerns of political rationality at national level, it is plausible that it needs a certain fraction α of financially solid countries to bail out a certain fraction $1 - \alpha$ of countries in financial stress.

Beyond the number of countries that run loose fiscal policies the size of these countries matters. For simplification the country's size is related to the level of accumulated debt. The economic capacity of a currency club that runs tight fiscal policies to bail out a large country i that is in financial trouble might be depleted with a certain amount of outstanding debt obligations (potentially) revoked by that large country.¹¹ From above considerations thus follows that $\underline{p}_i > \bar{p}_i > 0$ and $\underline{p}_i > \hat{p}_i > 0$.

It turns out that an individual members' choice of national fiscal policy takes the form of a Nash-game where country i 's fiscal policy choice not only depends on i 's own preferences, but also on the fiscal policy choice of other countries and on corresponding capital market perceptions. Country i 's choice over T_i and L_i is determined by a situation in which policymakers are indifferent between these two options, that is either

$$\underline{u}_i = \bar{u}_i - p_i S_i \quad (4)$$

or

$$\underline{u}_i - \hat{p}_i S_i = \bar{u}_i - p_i S_i. \quad (5)$$

Equation (4) applies when country i does not face any sanctions from choosing a tight fiscal policy, ie a situation in which all other countries choose a tight fiscal policy, too. Equation (5) applies when country i is sanctioned by capital markets owing to the fiscal leeways occurring in other countries. Although country i itself applies a tight fiscal policy.

From applying (2) and (3) and rearranging utilities, it follows the level of S_i that fulfils (4) and (5):

$$S_i^* = \frac{\bar{u}_i - \underline{u}_i}{p_i} = \begin{cases} \frac{\bar{u}_i - \underline{u}_i}{p_i} \equiv \underline{S}_i^* \text{ if } L_i \wedge T_{\neq i} \\ \frac{\bar{u}_i - \underline{u}_i}{\hat{p}_i} \equiv \bar{S}_i^* \text{ if } L_i \wedge L_{\neq i} \end{cases} \quad (6)$$

¹¹Note that policymakers face various budgetary constraints at national level, such as limits on enforceable public revenues and limits on minimum government expenditures as well as varying tax bases. This fact might predominantly constrain the bail-out of a large member state or even a group of states. In addition, public choice considerations at national level might contribute to a denial of a bail-out when the majority of voters do not favour financial support to certain countries that lack a certain degree of political integration. Beyond budgetary restrictions this fact might predominantly constrain the bail-out of a number of member states.

and

$$S_i^* = \frac{\bar{u}_i - u_i}{\hat{p}_i - p_i} = \begin{cases} \frac{\bar{u}_i - u_i}{\hat{p}_i - p_i} \equiv \bar{S}_i^* \text{ if } L_i \wedge T_{\neq i} \\ \frac{\bar{u}_i - u_i}{\hat{p}_i - \bar{p}_i} \equiv \underline{S}_i^* \text{ if } L_i \wedge L_{\neq i} \end{cases} \quad (7)$$

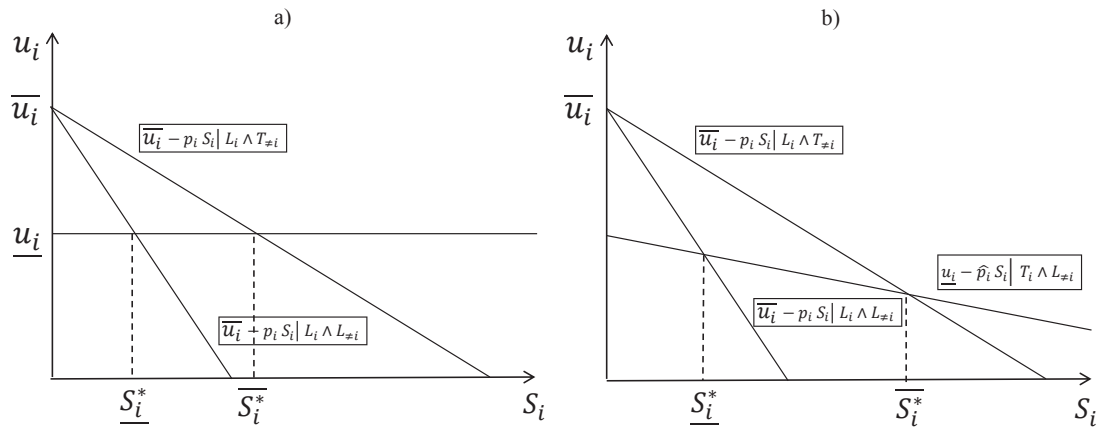
respectively. See Figure 1 part a) for a graphical illustration of the incentives that national policymakers face from potential sanctions by capital markets when country i does not face any interest rate spillovers if it runs a tight fiscal policy.

According to this model, small members of a currency club are tempted to breach the rules. This is because the probability that capital markets expect a bail-out by the rest of the solid club is (*ceteris paribus*) relatively high, ie for small members $S_i < \bar{S}_i^*$. The opposite is true for large countries. These countries are, owing to their size of accumulated debts, less likely to be bailed out. Thus for large members $S_i > \bar{S}_i^*$.

For the market discipline channel the intermediate case, ie $\underline{S}_i^* < S < \bar{S}_i^*$, can be expressed as a coordination game. Country i will choose its own fiscal policy on the basis of i 's assumption on what other countries of the currency area would do. If other countries run loose fiscal policies country i 's expected utility from sticking to the rules is higher than its expected utility from running loose fiscal policies - sanctions arising from financial markets in the form of higher risk premia are less probable. The opposite is true, if country i expects other countries to run tight fiscal policies. In this case, country i might have an incentive to breach the rules. The outcome of this coordination game consists of two Nash equilibria: $(T_i, L_{\neq i})$ and $(L_i, T_{\neq i})$.

Figure 1 part b) illustrates the more realistic case in which, due to higher credit risk of other members, higher interest rates spill over to country i even in the case i runs a tight fiscal policy. Given that spillovers occur, country i 's incentives to run a tight fiscal policy are distorted. The critical values of S_i^* now are larger than in the previous case, ie in an environment of this type punishment by capital markets needs to be stronger in order to urge both small and large members to run tight fiscal policies.

Figure 1: Incentives Resulting from Capital Market Pressure



Although the SGP rules were the same for all EMU members at the time the European sovereign debt crisis emerged, budgetary leeway previously has been common in almost all euro area member countries. While large countries, namely Germany and France (and also Portugal) have been the first sinners that violated the rules, smaller countries took this course later on. Peer pressure *de facto* vanished and so did the power of the disciplining institutional framework. In other words, the market discipline channel in principle was the only mechanism left to restrain policymakers from additional fiscal leeway.

In the following section we analyse the market discipline channel empirically. The aim of the empirical analysis is to study capital market reactions in the wake of the political debate undermining the SGP. Since political events not only affect the level of asset prices but also market uncertainty, we apply a level and volatility analysis. In more detail we test the following two hypotheses:

Hypothesis 1 (level effects): Due to the loss of credibility, political events signalling a softening of the Pact increase the level of sovereign bond yield spreads.

Hypothesis 2 (volatility effects): Due to the loss of credibility, political events signalling a softening of the Pact increase the volatility of sovereign bond yield spreads.

III. Empirical Analysis

III.1. Data

In our research design we link events of political rhetoric and political action to financial time series data. In order to calculate our dependent variable yield spread we collected data of 10-year government bond bid yields of Germany, France, Italy,

Spain, Greece, USA and UK. All data are sourced from Datastream. Table 1 reports descriptive statistics of the calculated yield spreads time series.

Table 1: Descriptive Statistics

	France	Italy	Spain	Greece	USA	UK
Mean	-0.010	-0.032	-0.025	-0.037	0.067	0.099
Standard Deviation	1.793	1.631	1.635	1.659	5.321	2.690
Minimum	-11.300	-9.600	-9.500	-8.400	-23.100	-9.200
Maximum	9.200	10.400	9.200	11.300	25.000	12.600
Skewness	-0.233	0.120	0.311	0.426	0.113	-0.004
Kurtosis	8.113	9.734	9.833	11.299	4.361	4.026
Jarque Bera	1149.7***	1980.9***	2053.4***	3036.2***	82.9***	45.9***
Observations	1047	1047	1047	1047	1047	1047

The values of the dependent variable yield spread are first-differenced and multiplied by 100 (in basis points).

We focus on the analysis of government bond yields of four EMU countries relative to the corresponding German debt instrument. First of all, we incorporate France to our empirical study because France is the second largest EMU country as regards GDP. Thus, France combines economical and political power. Italy, a further country under consideration, combines a number of interesting aspects, too. Beyond the political and economic power (as regards GDP Italy is the third biggest EMU country), over the period under study Italy exhibits a comparatively high level of public debt. Just before the beginning of EMU, Italy's ratio of government debt relative to GDP has been far beyond the level of 60 per cent. Moreover, the country is assigned by capital markets to the group of so-called PIGS-borrowers today¹² - indicating unsustainable public finance in the past. As regards Spain, in the course of the recent financial crisis government debt relative to GDP increased significantly. During the period under review, however, Spanish policymakers behaved more or less as opponents compared to the positions of Germany, France, Italy and Greece. As regards the period 2001 to 2005, Spanish government debt relative to GDP decreased steadily, the budget never exceeded the three per cent limit and an EDP was not taken into consideration for Spain by EU officials. Although Greece is a rather small EMU member, the country always revealed a tendency to breach the Pact's rules thereby permanently destabilising the SGP. In the period under review the Greek's debt-to-GDP-ratio has always been above 60 per cent,

¹²Portugal, Italy, Greece and Spain.

the budget deficit-to-GDP-ratio always exceeded the three per cent limit and, according to the EU Commission (2010), there have been 11 individual incidences of misreporting fiscal figures by the Greek authorities just until 2004.¹³ All in all, this country selection allows the analysis of different EMU countries in different circumstances, ie it allows a holistic approach. In order to check our empirical results for robustness we incorporate government bonds of two further countries to our empirical tests: the United States of America (USA) and the United Kingdom (UK).

One may argue that a challenge in choosing yield spreads is to distinguish between credit risk and liquidity risk. Liquidity risk, however, plays at most a minor role in explaining time series behavior of yield spreads in “normal times”. Beber et al. (2009) argue that during a period of financial stress liquidity risk is important. During normal times liquidity is rather redundant and credit risk remains observable. Due to its interaction with fundamental risk or market sentiment (which was not perceived as high over the period under study) liquidity risk has not been an important driver of yields during the time under review. Consequently most explanatory power can be attributed to credit risk (see eg Codogno et al., 2003 and Pagano and von Thadden, 2004).

In the literature, few empirical studies focus on interest rate swap spreads (IRSS) rather than on yield spreads (see for instance Lemmen and Goodhart, 1999, Heppke-Falk and Huefner, 2004, Afonso et al., 2007 and Goldbach and Fahrholz, 2011). One could argue that in the comparison of yields relative to Germany, the German benchmark is also affected by the political process under consideration. In other words: if government bond yields are affected by the political debate over the reform of the SGP, then German government bonds would be affected, too. Therefore, an analysis based on the IRSS should be preferred. However, over the time under study, there is empirical evidence that the no-bail-out rule was perceived as credible by capital market participants (see section II.1). Beyond this argument, an analysis based on IRSS which is in turn based on high-quality private sector debt instruments (eg high-quality- or at least AA-rated financial institutions), is questionable. This argument applies due to the fact that one might underestimate credit risk inherent in private sector debt instruments. For example, it is likely that even AA-rated banks held portfolios of government bonds of doubtful creditworthiness. For that reason, there might be a correlation between the credit risk of private banks and the credit risk of governments (see also Afonso et al., 2007, Faini, 2006 and Heppke-Falk and Huefner, 2004).

In order to identify the relevant political events we systematically analyse news from the FACTIVE database for the period 2nd January 2001 to 24th March 2005. There are two reasons for defining this time period: First, in January 2001 Greece

¹³When considering the PIGS-countries it becomes obvious that Portugal is missing in our analysis. However, it turned out that the Portuguese time series did not meet the GARCH specifications of the other estimated time series. Due to the claim of consistency we did not consider Portugal.

acceded the EMU, so the number of EMU member states remains stable over the entire period under review. Second, *de jure* there have not been any adjustments in the letters of the Pact over the time period under review (until the Pact's reform on the 23th of March 2005).

First of all, we evaluate all the event sourced from FACTIVA thereby determining whether these news contain information about statements and decisions concerning the SGP. We then encode the selected news data in order to enable statistical computation. Thus, each event is decoded with discrete values ("destabilising" = 1, "neutral" = 0) according to its very content. Simultaneously, relevant news events are allocated to different categories (main and sub-categories). Decisions and statements, as elements of the main category, provide information about whether a particular news event can be defined as scheduled or spontaneous. Moreover, each main category consists of sub-categories. Decisions, which can be considered as scheduled, concerning the SGP can only be attributed to the European Commission and the EcoFin. The other main category (unscheduled) statements can be attributed to the European Commission, the European Council and to the EcoFin.¹⁴ In a final process, these two individual datasets are examined and adjusted for discrepancies.

FACTIVA is a high news frequency database. Occasionally a number of statements arrive on one day. In order to obtain a proper database consisting of one statement each day we apply the following rule: according to its power to monitor and enforce the rules of the SGP, we consider statements from the European Commission to be of higher relevance to financial markets than statements arriving from EcoFin members. Moreover, we consider European Council statements to be least relevant for market participants.

In addition, due to the fact that statements are frequently released, it is likely that some releases occur on non-trading days (such as weekends). However, in the following analysis we focus on weekly trading days only. Therefore, we assign affected events to the next trading day. Moreover, by dealing with event studies it is crucial to set up an event window. This is necessary because a number of market participants anticipate political events. Furthermore, as MacKinlay (1997) argues, markets occasionally react time-delayed. Owing to the fact that statements are rather surprising for market participants our applied event window for statements comprises 1) the trading day that coincides with the very statement and 2) the next trading day. As said above, decisions can be considered as scheduled. Therefore, we extend the event window in a way that it covers a three-day event window, ie the day prior and the one succeeding the actual event.

View Figure 3 in appendix A.1 for an illustration of the frequency of destabilising EcoFin statements. Figure 4 in appendix A.1 shows the frequency of destabilis-

¹⁴In October 2002, for example, the former President of the European Commission, Romano Prodi, stated the SGP was stupid. This unscheduled European Commission statement can be interpreted as "destabilising" with respect to the credibility of the SGP.

ing statements of the heads of government. Both descriptive illustrations are not adjusted for event windows.

III.2. Model Estimation

In the following analysis, we study daily yield spreads of 10-year government bonds of France, Italy, Spain, Greece, USA, UK relative to Germany. The pre-diagnostics of the government bond yield spreads under observation justify the choice of an ARMA-GARCH specification. Table 2 reports the corresponding numbers.

Table 2: Diagnostic statistics

	France	Italy	Spain	Greece	USA	UK
Heteroskedast. Test						
ARCH-LM(1)	262.26***	96.14***	122.57***	57.21***	13.89***	21.29***
Ljung-Box(1)	157.85***	150.87***	143.76***	117.26***	49.35***	62.85***
Ljung-Box(10)	180.72***	188.93***	173.20***	122.22***	62.19***	84.22***
sq. Ljung-Box(1)	210.76***	87.74***	110.31***	54.36***	12.06***	20.98***
sq. Ljung-Box(10)	400.35***	104.47***	126.29***	61.66***	26.49***	53.48***
Unit Root Test						
Augmented DF	-21.703***	-21.559***	-25.567***	-23.243***	-25.132***	-24.853***

By considering bonds and yield spreads two main characteristics become obvious: serial correlation and heteroscedasticity (see Engle, 1982, Bollerslev, 1986 and Engle, 2001). The developed Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model by Bollerslev (1986) is an extension of Engle's (1982) ARCH(p) model. The special feature of the GARCH model is that a second equation is designed, which focuses on the conditional variance. The conditional variance equation depends on a long-term average value (ω), the ARCH term (ϵ_{t-1}^2) and the GARCH term (σ_{t-1}^2). Therefore, the conditional variance not only depends on the history of the time series, but also on the history of its own as well as on the history of the error term. These features are important because our emphasis is not only on the mean, but also on the volatility process.

In order to select the most appropriate model we test whether our data set fulfills the characteristics of serial correlation, conditional non-normality and conditional heteroscedasticity. Since these characteristics prevail for all daily yield spread time series we specify GARCH models. In order to deal with dependent variable time-dependency in the mean equation we compute different ARMA(p,q) variations.

The application of ARMA models allows explaining the conditional mean of the process of the dependent variable based on past realisations. This approach thus allows accounting for time-varying processes in both the variance equation owing to the GARCH specification and the mean equation due to ARMA extensions (see Figure 2). The ARMA-GARCH-approach is often used in modelling financial time series on a daily basis (see eg Curto et al., 2009 and Sadique and Silvapulle, 2001). By taking into consideration the Akaike (AIC) as well as the Schwarz Information Criterion (SIC), we test a number of different GARCH approaches. We find the most appropriate model to be the ARMA(p,q)-GARCH(1,1)-procedure.

The model estimating yield spread adjustments of different European government bonds that are affected by destabilising political events is described by the following conditional mean (8) and conditional variance equation (9):

$$y_t = c + \gamma(y_{t-m}) + \delta(\epsilon_{t-1}) + \sum_{j=1; (k=0)}^2 \theta_{j(k)}(D_{j(k)t}) + \epsilon_t \quad (8)$$

$$\text{with } \epsilon_t \sim N(0, \sigma_t^2)$$

$$\sigma_t^2 = \omega + \alpha_1 \epsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2 + \sum_{j=1; (k=0)}^2 \phi_{j(k)}(D_{j(k)t}) \quad (9)$$

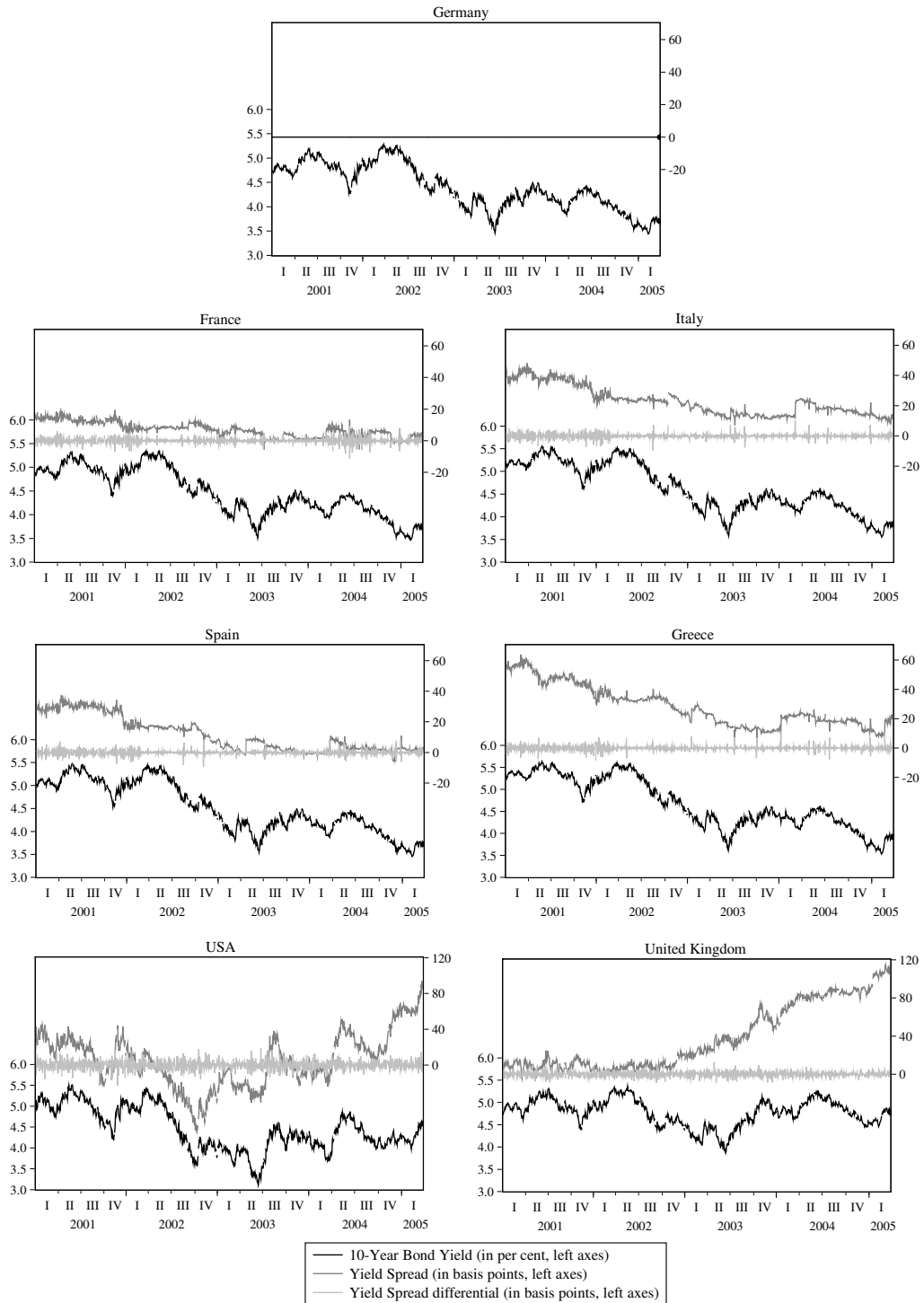
$$\text{with } \omega > 0; \alpha_1, \beta_1 \geq 0; \alpha_1 + \beta_1 < 1$$

The dependent variable of the conditional mean equation (8) is the yield spread (y_t) measuring the spread of the 10-year bond yield of a country under review versus the German 10-year bond yield. The right hand side includes a set of different independent variables: the coefficient c refers to a constant term that is only applied to Greek government bond yields.¹⁵ In order to cover various political events in our model we include a set of dummies $D_{j(k)t}$ (with $j \in \{1, 2\}$ and $k \in \{0, 2\}$). The index j is defined as Decisions ($j = 1$) and Statements ($j = 2$), whilst the index k describes the key actors in each category, ie the European Commission ($k = 0$), the EcoFin ($k = 1$), and the European Council ($k = 2$). The error term is denoted as ϵ_t , which has a time-varying variance. Moreover, the error term is normally distributed with mean zero and unit variance. Additionally, with the exception of Italy and UK, we include an autoregressive term (γ) with a lag period of $m \in \{1, 2\}$ ¹⁶ and a first lagged moving average term (δ). To estimate the model it is important to take into consideration these two terms because they enable the incorporation of the time dependent return processes of the explained variable.

¹⁵Although this coefficient does not gain any statistical significance, the constant for Greece is significant in order to increase the information criteria and to eliminate heteroscedasticity in the residuals.

¹⁶The lagged ARCH term for France, Spain and USA is $m = 1$, whereas for Greece only $m = 2$.

Figure 2: 10-Year Government Bond Yields and Yield Spreads relative to Germany



Source: Own illustration based on data of Datastream.

The conditional variance equation (9) contains the same set of political event dummies as the conditional mean equation since we also focus on market uncertainty, ie market volatility. Moreover, the variance equation consists of three additional terms: a GARCH constant term (ω) that is the long-term mean of the variance, the ARCH term (α_1) that represents a parameter for the error term of $t - 1$ and the coefficient for the variance of $t - 1$ is denoted by the GARCH term (β_1).

III. 3. Empirical Results

As regards the general conclusions of our analysis, our results are broadly in line with those of Afonso and Strauch (2004) and Goldbach and Fahrholz (2011). However, due to methodological differences and differences in the data we outline the effects of political events on different sovereign bond yield time series.

As mentioned above, we choose an ARMA-GARCH approach in order to capture the systematic influence of destabilising political decisions and statements on the yield spread of selected EMU countries. Table 3 presents the results of the models estimated for the sample period 2nd January 2001 to 24th March 2005. To start with, we briefly focus on the results of the ARCH and GARCH effects. The former provides information about how intensive volatility reacts after a shock to the market. The latter sheds light on how long a shock is perceptible in the market's volatility. After a shock has arrived to the market, an increased volatility is more persistent in the market for French and Spanish government bonds compared to the market for Greek bonds. For all countries under consideration the volatility reaction is relatively spiky as one can see in comparatively high ARCH-Terms.

We now turn to the test of hypothesis 1. Regarding level effects, we do not find systematic and consistent effects of destabilising political events on the level of credit risk inherent in EMU government bonds. The analysis of the mean equation reveals three controversial aspects. First, for Spanish government bonds we find that European Commission decisions systematically lead to an increase in level of yield spreads. Second, for Greek government bonds we find that EcoFin Statements systematically increase bond yields. Third, for French and Greek government bond yields we find that EcoFin Decisions systematically reduce the level of bond yields. Though these level effects were statistically significant, they have opposite signs and are only small in magnitude.

While destabilising decisions by the European Commission tend to increase yield spreads, destabilising decisions by the EcoFin tend to lower yield spreads. The former finding can be attributed to the enforcement of the SGP's rules, ie the early warning mechanism and the excessive deficit procedure. The latter finding can be explained by the veto power of the EcoFin and its attempts to qualify the decisions of the European Commission. Only Greek government bond yield spreads are sensitive to destabilising EcoFin statements with the expected sign. This finding

indicates that for Greece only market participants anticipated some adverse fiscal developments resulting from the political haggling over the SGP.

According to the market discipline theory, credit risk inherent in government bond yields should have increased systematically in response to destabilising decisions (political action) and statements (political rhetoric) arriving from the political actors under study. However, our results are non-consistent and non-sizeable. Thus we find that capital markets did not punish sovereign borrowers at a time when the European institutional framework was suspended. Put differently, capital markets did not anticipate any serious consequences for national public finances and the euro zone as a whole. Investors did not sanction governments for softening the Pact and political non-ownership of the underlying rules.

We now deal with hypothesis 2. Volatility clustering is a typical characteristic of the yield spreads time series (see Figure 2). The ARMA-GARCH-model we apply allows for detailed analysis of what causes volatility to increase or decrease. Although the results are not consistent across the sample of countries, the numbers presented in Table 3 indicate that destabilising decisions and statements reduce market volatility, particularly volatility of yield spreads of French and Spanish government bonds. This result is contrary to hypothesis 2.

As long as a multilateral fiscal rule is perceived as credible, political decisions and statements should not exert any volatility effects. The reduction of market volatility, however, can be explained as the result of adjusted expectations in response to destabilising signals, which, according to our results, have a stabilising effect on yields. These results thus indicate that capital markets already anticipated the gradual demise of the Pact instead of being surprised by destabilising events. Based on these results capital markets appear to have underestimated the longer-term consequences of the *de facto* loss of an institution that was aimed to be an external anchor for national fiscal policies.

Table 3: Empirical Results

		France	Italy	Spain	Greece	USA	UK
Mean Equation							
Constant	d				-0.025 (-0.883)		
Autoregressive Term ^a	γ_o	0.229*** (2.792)		0.161 (1.534)	-0.072* (-1.823)	0.222** (2.074)	
Moving Average Term ^b	δ_o	-0.704*** (-15.256)	0.044*** (-9.425)	-0.619*** (-6.592)	-0.386*** (-9.475)	-0.483*** (-4.855)	-0.285*** (-8.814)
European Commission Decisions (n=64)	$\delta_{i,o}$	0.066 (1.315)	0.163 (-0.529)	0.197** (2.057)	-0.016 (-0.058)	0.546 (0.566)	0.070 (0.120)
EcoFin Decisions (n=27)	$\theta_{i,i}$	-0.191* (-1.905)	0.315 (-0.123)	-0.090 (-1.116)	-0.680** (-2.235)	0.467 (0.376)	-0.148 (-0.149)
European Commission Statements (n=96)	$\theta_{2,o}$	-0.037 (-0.453)	0.062 (-1.045)	-0.087 (-0.895)	-0.136 (-1.511)	-0.259 (-0.557)	0.299 (1.291)
EcoFin Statements (n=82)	$\theta_{2,i}$	0.060 (1.321)	0.044 (0.827)	-0.044 (-0.553)	0.243** (2.208)	-0.284 (-0.866)	0.160 (0.873)
European Council Statements (n=90)	$\theta_{2,2}$	-0.026 (-0.388)	0.054 (-1.103)	-0.128 (-1.155)	-0.060 (-0.714)	0.7868* (1.795)	0.027 (0.127)
Variance Equation							
Constant	ω	0.232*** (2.962)	0.638*** (2.983)	0.384** (2.279)	0.614*** (4.136)	1.465** (2.127)	1.079* (1.908)
ARCH	α_i	0.351*** (3.863)	0.532*** (5.146)	0.477*** (5.414)	0.243*** (3.283)	0.050*** (2.955)	0.061** (2.394)
GARCH	β_i	0.619*** (8.206)	0.344*** (4.757)	0.475*** (6.311)	0.497*** (5.694)	0.895*** (27.46)	0.772*** (7.905)
European Commission Decisions (n=64)	$\theta_{i,o}$	-0.197*** (-4.646)	0.456 (0.539)	-0.446** (-2.183)	0.703 (0.681)	0.979 (0.397)	1.200 (0.786)
EcoFin Decisions (n=27)	$\theta_{i,i}$	-0.1006* (-1.785)	0.4343 (1.293)	-0.7380** (-1.993)	-0.769 (-1.355)	-1.592 (-0.600)	2.765 (0.993)
European Commission Statements (n=96)	$\theta_{2,o}$	0.271 (1.104)	-0.157 (-1.000)	-0.040 (-0.158)	-0.141 (-0.478)	0.168 (0.121)	0.556 (0.852)
EcoFin Statements (n=82)	$\theta_{2,i}$	-0.166*** (-2.700)	-0.447*** (-2.795)	0.280 (0.672)	0.798 (1.356)	0.031 (0.030)	-0.129 (-0.241)
European Council Statements (n=90)	$\theta_{2,2}$	-0.090 (-1.158)	-0.277*** (-3.073)	-0.072 (-0.257)	-0.526*** (-2.623)	-0.872 (-0.582)	-0.472 (-0.896)
Postdiagnostics							
Log likelihood	LL	-1767.600	-1747.800	-1772.581	-1839.141	-3174.105	-2472.006
Akaike info criterion	AIC	3.408	3.365	3.418	3.551	6.098	4.749
Schwarz criterion	SIC	3.479	3.432	3.489	3.626	6.169	4.815
ARCH-LM(1)	$LM(1)$	0.402	0.209	0.139	0.003	0.067	0.243
ARCH-LM(10)	$LM(4)$	0.488	0.230	0.234	0.266	0.315	1.202
Q(1)		5.124	0.679	0.228	0.735	0.402	0.039
Q(10)		11.440	13.876	10.555	5.439	10.662	20.223**
Q ₂ (1)		0.404	0.2101	0.139	0.003	0.068	0.245
Q ₂ (10)		4.834	2.131	2.211	2.782	3.1317	13.783
Jarque-Bera	JB	1084.1***	8054.6***	10944.0***	4265.2***	59.0***	74.1***
LR-Ratio Test(10)	LR	35.8***	57.7***	19.9**	56.4***	5.7	9.4

^a If applicable the AR-Term is first lagged except for Greece (second lagged).

^b For all countries under consideration the MA-Term is first lagged. Key parameters of conditional mean and variance equation depict coefficients with HCSE in brackets; *, **, and *** represent 0.1-, 0.05-, and 0.01-levels of significance.

Interestingly, not only EcoFin decisions cause volatility to decrease, also statements given by members of the EcoFin generally cause market uncertainty to decline in the French and Spanish bond market. This means that EcoFin members' statements were systematically taken into consideration in the expectation building process. However, detached from their nature (destabilising from a "rule of law" point of view) these statements were not perceived as a surprise by financial market participants. A similar pattern is found for European Council statements, whereas European Commission statements did not systematically affect bond yield spreads. It remains to be noted that national politicians rather than the multilateral watchdog of the Pact, ie the European Commission, affected capital market expectations in the early years of the Pact.

III.4. Robustness Tests

In order to test our empirical results for robustness, we apply Log-Likelihood-Ratio-tests (LR-tests) for each country. In addition, we test two control groups.

- 1) LR-tests relate to the baseline model, ie a model that does not contain any political dummy as regressor, neither in the mean, nor in the variance equation. Beyond significant LR-test statistics also other information criteria point out that the model specification and estimation improve owing to the inclusion of political event variables.
- 2) We estimate the models for two non-EMU control groups, namely the yield spreads for 10-year government bonds of US and the UK government bonds. Column 5 and column 6 of Table 3 show the estimation results for these two time series. The estimates suggest that the political events we analyse do not systematically affect these yield spread time series. For both countries LR-test statistics point out that the model extended by political variables does not improve the baseline model with any statistical significance.

IV. Policy Implications

Our empirical results indicate that destabilising political events did not systematically affect European sovereign bond yield spread levels, but systematically reduced volatility. We thus conclude that the demise of this politicised multilateral fiscal framework was anticipated by capital markets. Important, however, is that although the softening of the Pact was anticipated by bond markets, market participants did not exert disciplinary pressure on EMU sovereign borrowers. Otherwise credit risk would have systematically increased.

From a theoretical perspective (see section II.2), in a monetary union loose fiscal policies in one country would make sanctions arising from capital markets likely under two conditions: 1) A no-bail-out rule is perceived as credible by financial

markets. 2) If the no-bail-out provision is not credible, investors anticipate the deterioration of financial resources of the public sector in other countries of the currency area, that impose an economic constraint on the ability to bail out. The latter was less relevant for in the period under study and general risk perception was comparatively low over the period 2001 to 2005.¹⁷

Since we do not find systematic level effects in sovereign bond yield spreads, our results indicate that bond markets had confidence in individual member countries' ability to further refinance outstanding debt. Closely related, our results also indicate that the EMU no-bail-out principle was not perceived as a credible institution. This finding is contrary to Brandner et al. (2007) and Schuknecht et al. (2009) who present arguments in favour of the credibility of the no-bail-out provision.

In light of the theoretical framework presented above, our results suggest that the capacity to bail out both large and small members by the rest of the currency union was not in fact questioned by bond markets. Since the overall EMU capacity to bail out did not seriously deteriorate in the period under study, the political haggling over the SGP did not increase attention on bond markets, and more risk sensibility did not emerge.

In this context, policymakers working on a reform of Europe's fiscal framework should abstain from enhancing multilateral fiscal rules lacking political ownership. A politicised multilateral fiscal rule may increase public awareness of national fiscal accounts, but it does not improve market discipline when investors trust in individual members' ability to refinance outstanding debt smoothly. In other words, when bond markets primarily put an eye on national fiscal data, a politicised multilateral fiscal rule without binding elements is rather superfluous. In addition, a permanent EU/EMU bail-out mechanism, which is a politicised multilateral institution as well, undermines the power of market discipline. Rather policymakers should focus on the strengthening national constitutional budgetary restrictions¹⁸ and enhanced market discipline. Whereas the former would increase pressure from the electorate, the latter would impose a hard economic budget restriction on national fiscal leeway.

¹⁷However, the role of the capacity to bail-out started to matter in the advent of the European sovereign debt crisis (see eg De Grauwe, 2010).

¹⁸The basic idea behind this argument is to strengthen ownership of national fiscal policies by the electorate. In a similar vein Muscatelli et al. (2012) argue that the European Commission should increase the public awareness of adverse national fiscal policymaking irrespective of any given numerical deficit ceilings by undertaking national parliaments to publish the motivations of their underlying decisions. The success of a procedure of this type remains an open question. As regards capital market expectations, such an approach might help to get a better picture about governments longer-term fiscal policy objectives and fiscal attitudes.

V. Conclusion

The political debate over suspending the rules of initial Stability and Growth Pact and its effects on sovereign bond yield spreads is subject of this analysis. We present a theoretical framework in which we explain the incentives that arise from capital market discipline for small and large member countries of a currency union. Focusing on the period 2001 to 2005, we analyse whether and how bond markets reacted to the political undermining of the Stability and Growth Pact. We find that market participants react sensitively to political events. Investors not only react on political decisions but also on mere political statements.

We show that for the period under study the effectiveness of signals arriving from financial markets in exerting disciplinary pressure on EMU sovereign borrowers (France, Italy, Spain and Greece) was low. Our results demonstrate that credit risk did not increase in the SGP's early years although from its beginning the Pact was not perceived as a credible institution by financial markets. Put differently, bond market participants did not hinder (discipline) European politicians in their motivation to soften the Pact.

In the time before the European sovereign debt crisis emerged, bond markets have evidently been aware of the suspension of the rules, but markets were not triggered to claim higher risk premia in anticipation of ongoing EMU fiscal leeway - which finally turned out to be unsustainable for some EMU members. What we can learn from the above analysis is that missing hard economic budget restrictions accompanied by weak and incredible institutions do not restrict national policymakers in their motivation to "over-borrow". A politicised multilateral fiscal rule, such as the SGP, does not improve market discipline, it is rather superfluous.

In this context, policymakers working on a reform of Europe's fiscal framework should abstain from enhancing multilateral fiscal rules lacking political ownership. Rather policymakers should focus on the strengthening of national constitutional budgetary restrictions and enhanced market discipline. Whereas the former would increase pressure from the electorate, the latter would impose a hard economic budget restriction on national fiscal policymaking.

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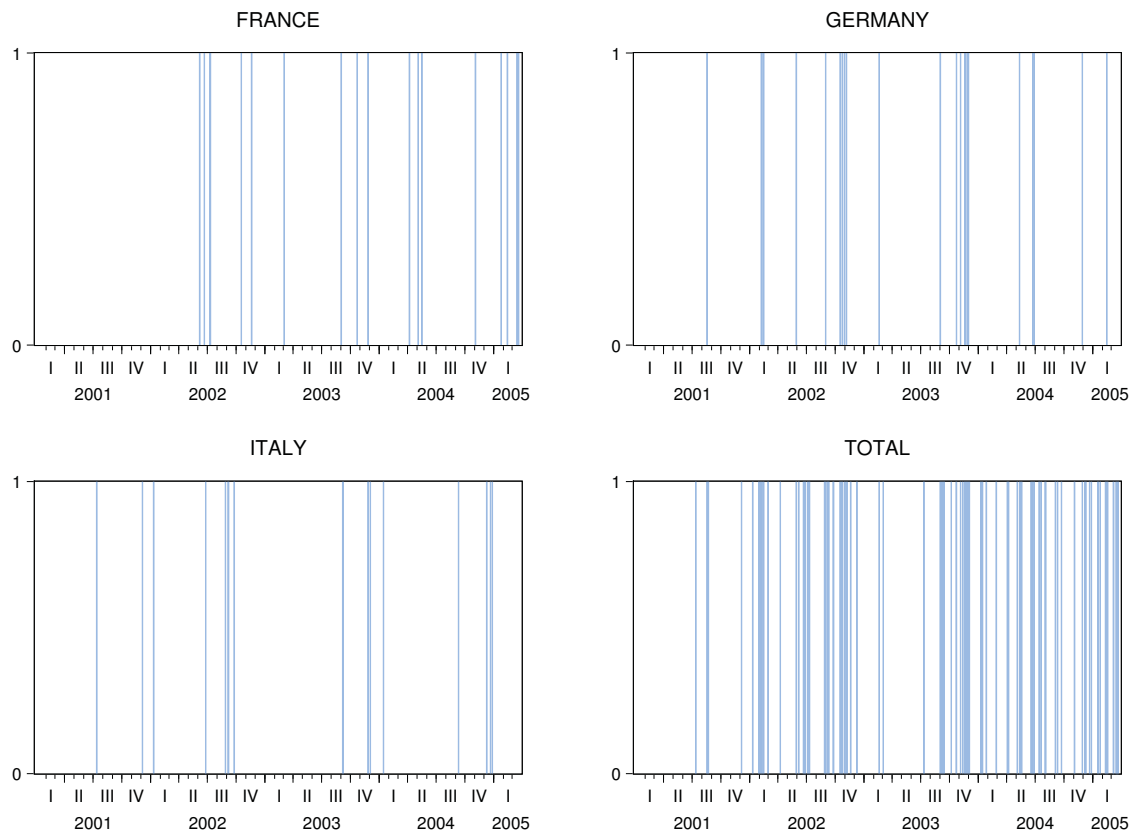
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A. Appendix

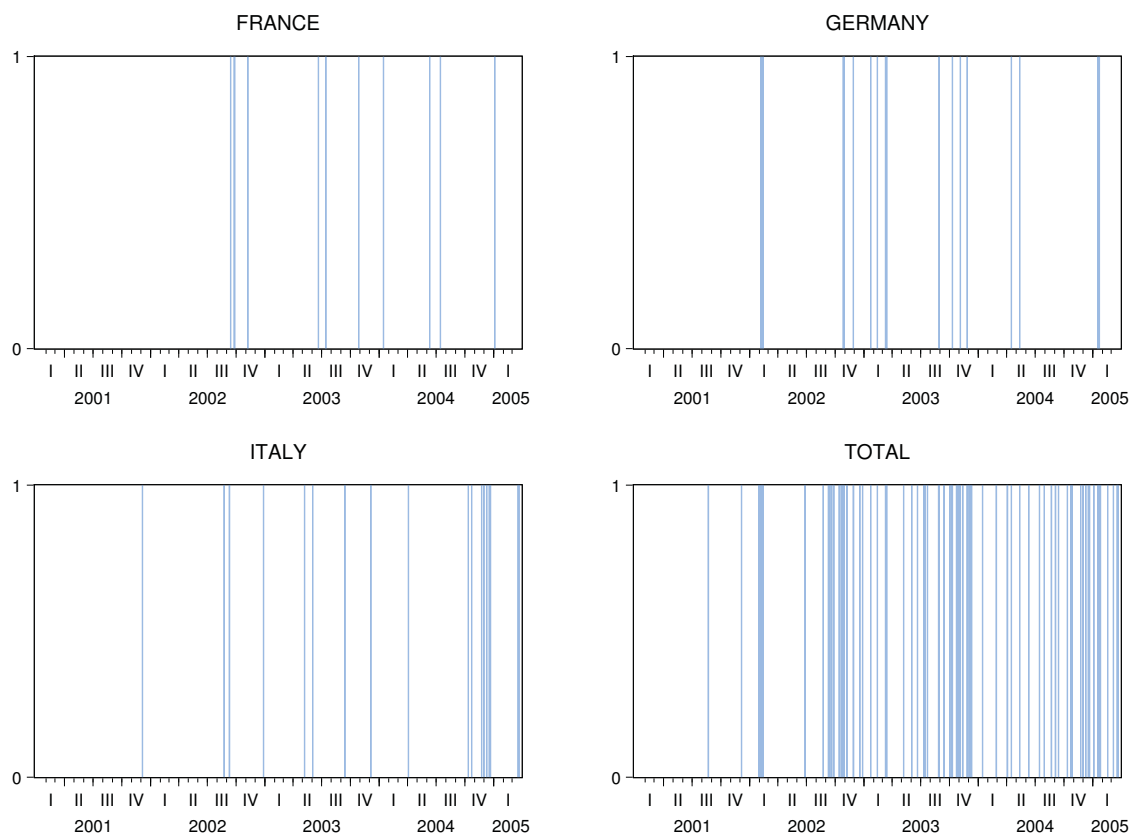
A.1. Frequency of Destabilising Statements

Figure 3: Frequency of Destabilising EcoFin Statements



Source: own illustration. Each line represents one event. The visualisation is based on our own database. For methodological issues view section 3.

Figure 4: Frequency of Destabilising Statements of EU Heads of Government



Source: own illustration. Each line represents one event. The visualisation is based on our own database. For methodological issues view section 3.